AN ASSESSMENT OF THE POLICY SHIFTS OF THE TURKISH CENTRAL
BANKING SINCE 2001

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

İPEK ŞENYARAR BAYRAK

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
ECONOMICS

JANUARY 2013

Approval of the Graduate School of Social Sciences

_____

Prof. Dr. Meliha Altunışık
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science/Arts / Doctor of Philosophy.

_____

Prof. Dr. Erdal Özmen
Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

_____

Assist. Prof. Dr. Hasan Cömert
Supervisor

Examining Committee Members

Assoc. Prof. Dr. Gökçer Özgür (Hacettepe U.,ECON)	_____
Assist. Prof. Dr. Hasan Cömert (METU, ECON)	_____
Assist. Prof. Dr. Seven Ağır (METU, ECON)	_____

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Name, Last Name: İpek Şenyarar Bayrak

Signature   :

ABSTRACT

AN ASSESSMENT OF THE POLICY SHIFTS OF THE TURKISH CENTRAL
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Şenyarar Bayrak, İpek
M.Sc., Department of Economics
Supervisor   : Assist. Prof. Dr. Hasan Cömert
January 2013, 132 pages

The understanding of central banking has evolved several times in the history. Different economic and political conditions shaped the structure of monetary policy and the stance of central banks. The Central Bank of Republic of Turkey (CBRT) also has experienced several reactionary policy shifts throughout its history. Nowadays, majority of central banks have started to follow financial stability programs after the Global Financial Crisis of 2008-09. The CBRT was one of the followers of financial stability targeting and has started to implement a new monetary policy structure after the Global Financial Crisis. The new monetary policy of the CBRT in which the financial stability was put nearby price stability came up with new challenges. Therefore in this thesis, we elaborate on the challenges of the CBRT and propose policy suggestions for the possible deficiencies of the new structure of the CBRT. We argue that the experiences of the CBRT in the inflation targeting period and the macroeconomic conditions of both during and post crisis period have shaped the new structure of the monetary policy, and the new policy mix of the CBRT may not be successful in all its targets at the same time because of the existence of "macroeconomic quadrilemma" tradeoffs as well as because of the ineffectiveness of the tool portfolio of the CBRT.

Keywords : Financial Stability, Exchange rate, Inflation rate, Required reserve ratio, Interest rate corridor.

ÖZ

TÜRKİYE'DE 2001 SONRASI MERKEZ BANKACILIĞI POLİTİKA DEĞİŞİMLERİNİN DEĞERLENDİRİLMESİ

Şenyarar Bayrak, İpek

Yüksek Lisans, Ekonomi Bölümü

Tez Yöneticisi   : Yrd. Doç. Dr. Hasan Cömert

Ocak 2013, 132 sayfa

Merkez Bankacılığı anlayışı tarih boyunca bir çok defa evrilmiştir. Değişen ekonomik koşullar ve politika hem para politikasını hem de merkez bankacılığının para politikası çerçevesinde duruşunu belirlemiştir. Türkiye Cumhuriyet Merkez Bankası da (TCMB) tarihsel süreç içerisinde bir çok tepkisel politika değişikliğine gitmiştir. Son günlerde, 2008-09 Küresel Finansal Krizin arkasından bir çok merkez bankası finansal istikrar politikalarına yönelmiştir. Küresel kriz sonrası TCMB de bu finansal istikrar hedefleyicilerinin takipçisi olmuş ve yeni bir para politikası izlemeye başlamıştır. Finansal istikrarın para politikası hedeflerinde fiyat istikrarı ile aynı düzeyde eklemlendiği bu yeni para politikasının yeni zorlukları beraberinde getirdiğine inanıyoruz. Bu tez bahsedilen zorlukları ayrıntılı olarak açıklamak ve TCMB'ye oluşması muhtemel yetersizlikleri düzeltici politika önerilerinde bulunmak üzere hazırlanmıştır. Bu çalışmada, enflasyon hedeflemesi dönemi ve hem kriz dönemi hem de kriz sonrası ekonomik koşullarının TCMB'nin yeni para politikasının çerçevesini oluşturmakta belirleyici olduğunu ve bu yeni para politikasının makroekonomik dörtlü açmazının varlığı ve politika araçlarının yetersizliği sebebiyle bütün hedeflerine aynı anda ulaşamayacağını tartışıyoruz.

Anahtar Kelimeler: Finansal İstikrar, Döviz Kuru, Enflasyon Oranı, Zorunlu Karşılık Oranı, Faiz Koridoru.

To My Beloved Family…

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

TABLES

LIST OF FIGURES

FIGURES

CHAPTER 1

INTRODUCTION

Monetary policy and central banking have dominated the macroeconomic discussions in the past decades. Different economic and political conditions have shaped the discussions on the structure of monetary policy and the stance of central banks in the economic sphere. The Central Bank of Republic of Turkey (CBRT) also has experienced several reactionary policy shifts throughout its history. Nowadays, majority of the central banks have started to follow financial stability programs after the Global Financial Crisis of 2008-09. The CBRT was one of the followers of financial stability targeting and has started to implement a new monetary policy structure after the Global Financial Crisis. Although there is no standard definition of the financial stability, in its financial stability report the CBRT (2010) described it as the use of more equity capital, more prudent borrowing and longer maturities for borrowing, a strong foreign exchange position and more effective risk management. We believe the new monetary policy of the CBRT in which the financial stability was put nearby price stability came up with new challenges. Therefore, the new challenges of the financial stability targeting draw up the purpose of this study. The purpose of this study is to evaluate the evolution of modern central banking in general, assessing the evolution of the CBRT in particular throughout its history, analyzing the reactionary policy shifts of the CBRT since 2001 and elaborate on the possible challenges of the new structure of monetary policy that the CBRT has started to implement since 2010.

Mainly, there are three interrelated arguments in this thesis which are symbiotically affecting each other. First of all we argue that the experiences of the CBRT with the inflation targeting regime and the economic conditions both during and after the Global Financial Crisis have shaped the new structure of monetary policy. Second, we argue that the new policy mix of the CBRT may not be successful in all its targets at the same time because of the existence of "macroeconomic quadrilemma" tradeoffs. Third, we argue that the new monetary policy structure of the CBRT may not be successful in all its targets because of the ineffectiveness of the tool portfolio of the CBRT.

As well known there has been an important shift in the world in terms of the understanding and implementations of monetary policy. However, there is a big gap in the literature on investigating the new shape of central banking structure in Turkey. Therefore this study tries to fill the gap in investigating the subject for the case of Turkey and contributes to the field by being one of the earliest studies on this new trend. The outline of the thesis is structured as follows.

In Chapter 2, the evolution of modern central banking will be explained in general. It will be divided into five. Evolution of the central banking in Gold Standard years, interruption during the First World War, developments in the interwar period, and progression in the Second World War will be summarized respectively. The primitive version of modern central banking was experienced during the Gold Standard years. The exchange rate system was constructed according to the valuation of the domestic currencies in exchange to gold during the Gold Standard years. The system collapsed during the First World War because of the suspension of convertibility during the war period. The central banks financed the heavy war expenditures and hyperinflations were experienced. There were important cornerstones in the understanding of central banking during the interwar and the Second World War periods. Majority of the central banks were nationalized during the interwar period. The nationalization movement influenced the understanding of central banking during this period. Majority of countries

followed closed economy policies and used central banks as the banker of the state. After the Second World War, a new exchange rate system, Bretton Woods system was applied. In this system all currencies were pegged to U.S. Dollar and the U.S. Dollar was indexed to gold. The Bretton Woods system collapsed due to the heavy defense industry expenditures of the U.S. during the Vietnam War. The next section will explain the dominant discussions on monetary policy in the 1970s, the 1980s and the 1990s in the world. The 1970s monetary policy was dominated by the monetarist ideas. Targeting certain monetary aggregates to find a panacea for high inflation trials were experienced during this period. The monetary targeting programs were collapsed as achieving the monetary aggregates became difficult. Following the collapse of monetary targeting programs, employment targeting concerns, independence of central banks and credibility of central banks dominated the discussions on monetary policy during the 1980s. The inflation targeting programs became famous during the 1990s. The majority of central banks did not implement inflation targeting fully, yet used inflation rate as an anchor to their economies. Meanwhile, the speed of globalization and developments in financial markets made it evident that the debate on searching for the right monetary policy should continue.

Following the evolution of modern central banking in the world, the Chapter 3 will summarize the evolution of the CBRT. It is divided into four parts as there are significant policy shifts of the CBRT thorough out its history. Following a short summary of historical background of the CBRT, the closed economy conditions and the stance of the CBRT in this economic environment will be summarized in a chronological order. The monetary policy in the 1980s, the influence of liberalization of international trade and financial system on central banking in Turkey will be elaborated respectively. After the January 24 Decisions, the Turkish economy experienced a series of transformations during the 1980s. Following the closed economy years, liberalization of trade program was implemented in Turkey. In this program, an export oriented economic targeting was followed. The CBRT implemented various incentives for exporters during this

period. The second transformation step was the liberalization of financial system. The convertibility of Turkish Lira to other currencies was maintained by the liberalization of financial system. Various changes in the law of the CBRT were enacted during this period. As there has been a dominance of banking sector in the financial markets in Turkey, the section 3.2.3 will be arranged to explain the banking sector reforms during the 1990s. The monetary policy during the 1990s in Turkey is subdivided into two as the crisis of 1994 divides the period in terms of monetary policy implications. First the pre-crisis period of 1990s will be discussed. Next, the second half of the 1990s, the exchange rate targeting trial of 2000 and the 2001 Crisis of Banking Sector will be analyzed. The exchange rate targeting trial of 2000 which was an IMF supported program was implemented for one and a half years. During this period the exchange rate was announced in advance. As there was a strong pass through effect between foreign currency and inflation rate, high dollarization problem of the 1990s was tried to be overcome by exchange rate targeting. The program collapsed because of a combination of political instability, fragility of the banking sector, high current account deficit, high inflation and interest rates in Turkey. Establishment of Banking Regulation and Supervision Agency (BRSA) in 1999 and regulations implemented to banking sector were other important cornerstones of the period for monetary policy.

Chapter 4 will discuss the monetary policy of the CBRT in the period from 2002 to 2008. In 2002, the CBRT started to implement an inflation targeting regime. Therefore, first we will provide a literature review on the theory of inflation targeting regime. It will be followed by the description of the policy structure and the tools that were used in the inflation targeting period of the CBRT. As an important aspect of the monetary policy, the exchange rate regime of the CBRT during the inflation targeting period will be explained in the following section. It will be discussed that during the inflation targeting period, the CBRT implemented a floating exchange rate regime. However, the CBRT tried to maintain foreign exchange rate stability by intervening in the markets several times during this period. After defining the structure of the monetary policy of the

period from 2002 to 2008, the merits and deficiencies of the economy during the inflation targeting period will be discussed. It will be argued that although there was an important progress in the economy during the inflation targeting period, some significant structural problems in the economy persisted. Therefore, some important macroeconomic indicators such as inflation rate, unemployment rate, current account deficit, and external debt profile of the period will be analyzed. As well known, the Global Financial Crisis hit the Turkish markets in the middle of inflation targeting regime. Therefore the Chapter 4 will continue with a summary of the effects of the Global Financial Crisis of 2008-09 in Turkey by focusing on some important macroeconomic indicators which are very relevant for a central banking perspective. The precautionary measures taken by the CBRT and BRSA in response to the crisis will follow the effects of the Global Financial crisis in Turkey. The use of macroprudential tools and their theoretical meaning will be discussed in this part. It will be argued that, the experiences of the CBRT in the inflation targeting period and the economic conditions of both during and after the Global Financial Crisis have shaped the structure of the new policy mix.

The new monetary policy of the CBRT which is the main motivation of this thesis will be explained in Chapter 5. The CBRT declared that it will use required reserve ratio, interest rate corridor besides the one week repo rates as policy rates in this new policy mix. The CBRT aims to control the liquidity management by interest rate corridor system and maintain financial stability by using required reserve ratio actively besides policy rates. Therefore the theory behind the new structure of monetary policy will be elaborated in this chapter.

In Chapter 6, which will include the most essential arguments regarding the purposes of this thesis, we first shall theoretically discuss the new policy mix by the help of macroeconomic quadrilemma framework. Second, with the help of some important macroeconomic indicators on the effectiveness of the tool portfolio of the CBRT we will evaluate the new policy mix. There are two arguments in this part which are symbiotically affecting each other. First, the

financial stability, price stability and foreign exchange rate stability which are the main concerns of the new policy mix, may not be maintained at the same time in an economic environment where capital is mobile. The policy maker will eventually face a tradeoff and two of the three desired goals will dominate the other. We will elaborate this by using the "macroeconomic quadrilemma" theory (Aizenman, 2011). Second, it is argued that, the tool portfolio of the CBRT may not be sufficient to achieve the targets of the new policy mix. As mentioned above, these two arguments are interrelated and affecting each other. To support our arguments we will first describe the classical macroeconomic trilemma framework and argue that the trilemma still exists in the countries where foreign exchange rate stability is a matter of concern. As well known, majority of central banks conduct floating exchange rate regimes and intervene in the markets by using foreign exchange reserves. We will theoretically explain the transition mechanisms of the monetary policy and argue that in an open economy maintaining foreign exchange rate stability by holding high reserves may not be a sustainable solution. Second, we will discuss how the addition of financial stability concern to the existing targets rendered the new macroeconomic trilemma to a quadrilemma. The theory states that, monetary policy makers can not pursue the foreign exchange rate stability, free capital mobility and sovereign monetary policy at the same time in an environment where financial stability is a restriction. Henceforth we will follow the "macroeconomic quadrilemma" framework to discuss the targets of the new policy mix of the CBRT.

Our second argument is that the new structure of the CBRT may not be successful in its all targets as the existing tool portfolio of the CBRT is ineffective. As mentioned previously, the CBRT uses a combination of interest rate corridor, policy rates and required reserve ratio in its new monetary policy structure. The interest rate corridor of the CBRT is only meaningful when the market rates float within the bands. Therefore, the CBRT should supply the necessary liquidity to the system when needed. We will support our argument by showing that in case of a match between maturities of the CBRT lending and banking sector credits, the

commercial banks may continue to their crediting behavior by using this liquidity. Moreover, The CBRT holds the interest rate corridor as wide as possible to create an uncertainty in the markets. It is believed that this uncertainty will decrease the credit expansion as it will increase the cost of risk exposures. However, this uncertainty may harm the inflation rate targets as it will worsen the future expectations. In addition to that, the usage of required reserve ratio may be ineffective because of the new financial instruments in the banking sector and growing non-banking sector. We will support our argument by showing the usage of off balance sheet items in the banking sector and the growth rates of non-banking sector which may create a significant vulnerability to external shocks. Following the discussion on the possible challenges of the new policy mix, we will propose some solutions to the possible tradeoffs that may be experienced.

The last chapter will conclude the discussions and discuss possible future directions of the research. As the CBRT newly started to implement the new monetary policy framework, there is no enough data and it is too soon to find strong empirical evidence on the arguments of this study. Therefore, an econometric analysis of the existence of the quadrilemma tradeoffs in the Turkish economy will be valuable.

CHAPTER 2

THE EVOLUTION OF MODERN CENTRAL BANKING

The story of modern central banking starts in the 17th century. From that time on, the understanding of modern central banking and its role in the economy has evolved as the needs of the financial systems have changed. To have a better understanding of the role of today's central banking and the responsibilities of a central bank, an acknowledgement of the history of modern central banking is valuable. The aim of this chapter is to shed some light on the evolution of modern central banking and monetary policy. In the first section of this chapter, the evolution of central banking in general will be discussed. Furthermore, the question of how today's monetary policy understanding has evolved will be answered in this section.

A central bank is the authority responsible for conducting policies on the supply of the money and credits of a country, which is called monetary policy. In other words, the responsibility of a central bank is to conduct monetary policy through its instruments, while analyzing the political, global and domestic juncture.

The choice of instruments to reach a particular target follows specifying the monetary policy structure. Therefore, it can be said that the monetary policy, the economic targets and the instruments to be used vary according to different economic environments. The effectiveness of transmission mechanisms may also vary from country to country. As Görmez and Yılmaz put it (2007), "Monetary

authorities, generally central banks, try their best to analyze the advantages and disadvantages of different alternative regimes and to find out which one applies best to their policy targets".

2.1. HISTORICAL BACKGROUND

The world's oldest central bank, the Bank of England which was established in 1694, operated as a joint stock company. The Bank of England was widely accepted as the first central bank in history because in 1844 it gained the monopoly power to supply paper money and conducted a primitive version of open market operations [1] (Önder, 2005). Central banks, which had formerly operated as commercial banks, evolved into central banks when they were given the monopoly power to issue notes and the role as the lender of last resort (Capie, 1995). The former commercial banks were reequipped by governments with the power of printing money and to be the lender of last resort in return for cheap credit to their main customers, governments. Therefore, the motive behind giving privileges to some existing commercial banks was that such privileged banks would offer additional government debt finance (Capie, Goodhart, and Schnadt, 1994). The main functions of central banks can be summarized as follows; being the banker of the state, having a monopoly power on money supply, and being the last resort of liquidity function.

2.2. THE GOLD STANDARD YEARS (1873 - 1914)

In its most general definition, a gold standard is a system in which other economic units of accounts are weighed according to their values in exchange to gold. As the value of gold appeared to be stable, it was the most suitable material to be chosen as an anchor to the currency valuation system around the world. In the gold standard years (1873 - 1914), central banks started to print money only in

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[1] Central Banks, to achieve a particular short-term interest rate and control the liquidity in financial markets, can sell and buy stocks in money markets. Central banks will have a short or long position if there is a liquidity shortage in the money markets. Moreover, the bank can export liquid bonds.

exchange for their gold reserves. In this way, money gained convertibility and the valuation of money could be controlled both within the country and in the international arena. Central banks tried to control interest rates by using their gold reserves. In the gold standard system, the target was the maintenance of the value of the domestic currency and central bank notes to be expressed in terms of their gold values. Central banks tried to keep this converted value stable in order to maintain control over the purchasing power of the domestic currencies.

2.3.   THE IMPACT OF WORLD WAR I (1914 - 1925)

With the widespread usage of paper money, improvements in banking systems and developments in international exchange rate system there were important developments in the understanding of central banks during the First World War years. The establishment of central banks in many countries was the result of the need for an authority that could print money, control the monetary policy and exchange information with other countries. Moreover, as previously mentioned, the motive behind giving privileges to some existing commercial banks and reshaping them as central banks was that such banks would offer additional government debt finance and that financing would be non-inflationary if the bank could meet convertibility obligations[2] (Capie, Goodhart and Schnadt, 1994).

During the First World War, central banks functioned as a money creator for financing the government budget. Maintaining the stability of money markets was a secondary priority to sustaining national unity during the war period. The First World War created a panic in many countries due to war financing concerns. A placatory mission was given to central banks. In many countries, the war expenditures were financed mainly by central banks. This resulted in hyperinflation and very high debt to GDP ratios (Önder, 2005). The convertibility mechanism of the gold standard became obsolete after the First World War for

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[2] The convertibility obligation of a central bank is described as determining the valuation of domestic currency in exchange for other currencies or valuable metals such as gold.

two important reasons. First of all, the majority of the goods and weapons needed for the war were supplied by the United States (the U.S.). As a result, the majority of the gold reserves were collected in the U.S.

Second, as a result of uncontrolled war expenditure, the European countries which had formerly had similar currency values faced differing inflation rates. Different inflation rates caused imbalances in the existing trade agreements. Therefore, the existing currency values became obsolete and a majority of the dominant countries did not agree to return to the gold standard.

2.4.   INTERWAR PERIOD: THE GREAT DEPRESSION

The monetary turmoil of the war period, the collapse of trade among countries, the effects of nationalism on the political arena, and discriminatory tariff barriers can be counted as some of the main footprints of the Great Depression in the understanding of monetary policy.

The Great Depression triggered the highest unemployment rates in history in the period from 1921 to 1939. The international trade and financial system was devastated by the Depression. In such turmoil, the government intervention in the markets was inevitable.

In the 1930s and 1940s, national economic policies evolved drastically, as the spreading nationalists supported the idea of establishing national, public central banks in the aftermath of the collapse of the gold standard (Singleton, 2011). Many central banks were nationalized. As Capie, Goodhart, Ficher and Schnadt (1994) put it;

> Central banks have almost invariably been established by an act of government and have been designated as banker to the government. Governments have a natural preference for cheap finance from their own bank, and, particularly when the existence of the state is threatened, notably by war, they have both the power and the incentive to force the central bank to give priority to their immediate needs.

11

During the Great Depression, most governments intervened in the policies of their national central banks in order to decrease interest rates. In this sense, the Great Depression was overcome by the help of falling nominal interest rates in addition to the help of the construction sector in leading countries such as the UK (Önder, 2005).

2.5.   THE SECOND WORLD WAR YEARS AND THE BRETTON WOODS SYSTEM

Throughout the Second World War years, the main strategy of central banks was to decrease interest rates and implement direct credit controls. The devastation of the First World War led countries to be skeptical about deregulated financial markets. Therefore, the independence of central banks was not on the agenda of governments in these years. Central banks were used to finance government expenditures. The majority of central banks were responsible for supporting development strategies by using monetary policy instruments (Singleton, 2011). The rise of the U.S. as a big economic power and the collapse of the Japanese and European economies gave rise to the Bretton Woods System in 1944. Under the Bretton Woods system, all currencies were pegged to U.S. Dollar and the U.S. Dollar was indexed to gold. As the majority of the gold reserves and industrial goods were located in the U.S., the Bretton Woods system seemed logical and sustainable to other countries (Capie, Goodhart, Ficher and Schnadt, 1994). This new system, called the Bretton Woods system, collapsed because of war expenditures as well as because of the indexation mistake of U.S Dollar into gold. The Vietnam War and the heavy defense industry expenditures made by the U.S. to compete against the Soviet Union caused inflation to rise in the U.S. The U.S could not find the necessary gold reserve to stabilize the currency and started destabilizing the value of the U.S. Dollar (Crowe and Meade, 2007).

Another important development of the times in monetary policy theory was that employment targeting became one of the responsibilities of the central banks. To

recover economies from the severe effects of a depression, high levels of production were needed, which in turn required high levels of labor force participation. As the continuation of high levels of employment was important to recover the markets after the end of the wars, employment targeting became one of the main concerns of national central banks.

In the 1960s, there was a widespread belief in a long run Philips curve tradeoff between inflation and unemployment; therefore the central banks allowed inflation to increase in the hope of maintaining low levels of unemployment (Goodfriend, 2007). Therefore, the major strategy of monetary policy was the go-stop policy. According to this policy framework, central banks stimulated employment in the 'go' phase of the cycle until the rise of inflation became a concern. In the 'stop' phase, aggressive interest rate policies were implemented to bring inflation down while unemployment rates were supposed to rise with the lag. According to Goodfriend (2007), the implementation of a "go–stop" strategy in the U.S. was not compatible with the fixed exchange rate regime. Therefore, in addition to the heavy defense industry expenditures, employment targeting concerns can be seen as another reason behind the collapse of the Bretton Woods System towards the end of the 1960s.

2.6. THE MONETARY TARGETING TRIAL OF THE 1970S AND THE RISE OF INFLATION TARGETING

The monetary policy strategies of central banks changed after the collapse of the Bretton Woods system, as the search continued for the right policy target. During the 1970s, monetarist ideas dominated monetary policy. As mentioned in section 2.5, the policy makers were using a go–stop strategy to manage inflation and employment concerns. It was believed that there was a clear trade-off between unemployment and inflation. On the other hand, stagflation, or the rise of inflation combined with an increase in unemployment rate, showed that the assumed trade-off did not exist. Milton Friedman (1968), as opposed to the common wisdom of

1960s, argued that once people adjusted their expectations to the high level of the inflation rate, wage expectations would adjust accordingly. He supported his position through the Expectations Augmented Philips Curve.

Monetarists first claimed that, even if short-term inflation could be affected by many other factors, long–term sustained inflation was always related to excessive money growth. Inflation was commonly believed to be driven primarily by factors other than monetary policy: fiscal deficits, commodity price shocks, inflation psychology, aggressive labor unions, or monopolistically competitive firms. As opposed to this common wisdom, Milton Friedman, Karl Brunner, and Allan Meltzer argued that central banks had the necessary tools to affect the inflation rate (Goodfriend, 2007). Friedman in his famous study, called Studies in the Quantity Theory of Money (1956), asserted that an increase in the amount of monetary growth increases prices, although it does not affect output in the long run.

Second, the monetarists developed the theory of money demand, which showed that inflation could be taken under control through control over the growth of money. They argued that if the money supply increased as the rate of real GNP increased, inflation would disappear (Friedman, 1956). They stated that as central banks had a monopoly power over currency and bank reserves, it could control inflation (Goodfriend, 2007).

The monetarist arrangements were seen as panacea for the problem of high inflation rates around the world. In 1974, the Bundesbank, in 1975 the Federal Reserve, and in 1976 the national banks of Canada and Switzerland started to implement monetary targeting (Crowe and Meade, 2007). The main argument behind monetary targeting was that the velocity of the money in circulation could be estimated and that if the central banks put a target on the growth of money, they could maintain control over the short term nominal revenues and long term inflation rates.

By the 1980s, it had become difficult to reach monetary targets, and monetary targeting had caused excess interest rate volatility. The continuing search for a tool which could help in reaching a sustainable level of inflation rate, and therefore a stabile economy, continued to be important. Sargent and Lucas showed the importance of central bank credibility in affecting expectations of inflation. In contrast, Friedman (1999) stated that the central banks' announcements on what they want interest rates, inflation, output or employment to be would be just that without the ability to implement a policy with some independent means of making those intentions come about.

Following the discussions on the ineffectiveness of monetary targeting, searching for a new anchor to the economy continued until the end of the 1980s. In majority of countries the liberalization of financial markets took place and the direct tools such as required reserves, interest rate ceilings credit controls were stopped gradually in this period. It was asserted that a disinflationary monetary policy could be effective in influencing expectations if a high accountability of the policy maker could be maintained. As Capie (1995) puts it; "The view developed that if central banks were less susceptible to government pressure, they would maintain lower inflation. The desire for more independence reemerged, and now that desire is being put into practice". Therefore, it was believed that the inflation rate could be reduced without creating a recession through an accurate interest rate tightening policy. As monetary targeting had had limited success because the demand for money had become unstable, many countries with flexible exchange rates began to target inflation more directly.

When we came to the 1990's we see that the central bankers were not challenged too much by monetarist critiques and continued to use their very only instrument, short term interest rates. The direct credit controls and required reserve ratios were not used in this period. Even though many countries did not implement inflation targeting strategy directly in the 1990s, central banks widely utilized short term interest rates to affect the economy.

Many central banks in nations such as New Zealand, Canada, the U.K., and Sweden started to implement inflation targeting programs as did Korea, Thailand, and the Philippines after the East Asian Crisis of 1997. The common features of the inflation targeting programs of these countries can be listed as; announcement of a point target for the inflation rate, transparency of central bank actions, and direct reporting to the public to maintain the credibility of central bank.

Taylor's Rule describes the link between real interest rates and the output gap and the gap between actual and targeted inflation. Taylor represents the policy rate by a linear summation[3] of the rate of inflation over the previous four quarters, and the percent deviation of real GDP from a targeted GDP. John Taylor (1993) stated that, "If both the inflation rate and real GDP are on target, then the federal funds rate would equal 4 percent or 2 percent in real terms". Therefore, interest rate usage in order to control the inflation rate by Taylor's Rule was widely implemented.

However, there were important problems with the short term interest rates, such as the time that was needed for an action to be effective. In other words, there was a significant and varying lag between the short term rate arrangements and the economic results of such arrangements (Capie, Goodhart, Ficher and Schnadt, 1994). Another important problem which also created a source of pressure on central banks was the need for forecasts of inflation rates to vary the short term interest rates accordingly. Especially given the uncertainty of such forecasts, there remains considerable room for political pressures to be applied to central banks, usually to defer interest rate increases at (politically) inconvenient moments (Capie, Goodhart, Ficher and Schnadt, 1994).

Besides effective usage of policy rates, the independence of central banks was another important discussion topic of monetary policy during the 1980s and 1990s. In the 1990s, the discussions in this field were based on techniques rather than

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[3] $[r = p + 0.5y + 0.5(p-2) + 2]$ where r is the federal funds rate, p is the rate of inflation over the previous four quarters y is the percent deviation of real GDP from a target (Taylor, J. B., 1993).

targets, the necessity of independence for central banks, and the responsibilities and credibility of central banks.

While inflation targeting became popular around the world, especially in emerging economies, the speed of globalization and the developments in financial markets made it evident that the debate over searching for the right monetary policy should continue. The Global Financial Crisis of 2008, which will be discussed in Chapter 4, created a new benchmark for the conduct of monetary policy by the existing tools that the central banks possess.

To conclude; macroeconomic discussions have been centered on the monetary sphere in the past decades. It is evident that the developments in the macroeconomic conditions have been shaping the understanding of modern central banking and the functioning of central banks for centuries. Therefore, this section was arranged to provide the historical background of the evolution of modern central banking. Historically, the central banks were functioning as commercial banks and evolved into the central banks of countries as they were equipped with the monopoly power of money supply, being the last resort of liquidity and being the banker of the state. First of the central bank establishments were motivated by the idea of non-inflationary government debt financing. The developments in international trade and the integration of markets created a need for an international currency exchange standard. The Gold Standard, which enabled central banks to print money in exchange for gold reserves, satisfied this need up to the First World War. During the Gold Standard years, the central banks maintained control over interest rates by intervening in gold reserves. Open market operations were started during these years by the Bank of England as well. The Gold Standard was abandoned in the First World War years due to the suspension of convertibility in countries. As there were imbalances in the gold reserves of countries and as the financing of the war had caused hyperinflation in a majority of countries, the Gold Standard collapsed. The Great Depression of the interwar period triggered the deterioration of the financial system. Another

important fact regarding the evolution of central banking was the spread of nationalism during both the Interwar and the Second World War period. Many central banks were nationalized in this period. The Great Depression was overcome by state interventions in interest rates and with the help of the construction sectors in leading countries (Önder, 2005). International trade once more stimulated a system for an international currency exchange rate standard. This time the world's macroeconomic condition helped to create a system in which all currencies were pegged to the U.S. Dollar and the U.S. Dollar was pegged to gold. During the 1960s, there was a Keynesian dominance on monetary theory. The majority of monetary policy arrangements were based on the Philips Curve tradeoff between inflation and the unemployment rate. The Bretton Woods system came to an end at the end of the 1960s mainly due to the high military expenditures of the U.S. during the Vietnam War and the implementations for employment concerns in the U.S. which were not suitable for the fixed exchange rate regime. The 1970s monetary policy arrangements were dominated by monetarist ideas because of a high stagflation observed during these years. The monetarist arguments were based on monetary targeting assuming that the central banks could control inflation by estimating the velocity of money in circulation and placing target for the growth of money. The majority of central banks conducted monetary targeting and arranged the interest rates according to their money growth targets during the 1970s. The main problem of monetary targeting was that it had caused excessive interest rate volatility and that it had become difficult to reach monetary targets in the 1980s. Therefore the effectiveness of monetarist approaches was heavily criticized in the 1980s. Taylor's rule, which described the link between real interest rates, the output gap and the gap between actual and targeted inflation, was widely accepted. Many central banks opted out of monetary targeting and started to implement inflation targeting programs. The credibility of central banks and the need for independent monetary policy were widely discussed during the 1980s. Even though many countries did not implement inflation targeting strategy directly in the 1990s, central banks widely utilized short term interest rates to affect the economy. With the wide spread of

globalization around the world, and the developments in financial markets, the world has become too much integrated. The Global Financial Crisis of 2008, which will be discussed in Chapter 4, created new discussion topics about monetary policy and the effectiveness of central banks in the economy.

CHAPTER 3

THE EVOLUTION OF THE CENTRAL BANK OF REPUBLIC OF TURKEY

In this chapter, the evolution of Central Bank of the Republic of Turkey will be assessed. The aim is to summarize the developments in modern central banking in Turkey and to describe the tools that the Central Bank of the Republic of Turkey (CBRT) has been using since the 1980s. Previous experiments are influential on the decisions of institutions. Therefore, to understand the policy choices of the CBRT in different conjunctures, shedding light on the evolution of the CBRT will be valuable. In section 3.1, a very short historical summary of the CBRT will take place. The following sections from 3.2 to 3.3 were arranged to describe the evolution of CBRT and the monetary policy in Turkey for the period from 1980 to 2002.

3.1.   A SHORT HISTORICAL BACKGROUND

The first commercial bank was established in 1856 in the Ottoman Empire. It was called The Ottoman Bank. This bank gained the power to issue notes in 1863. Following the First World War and after the resolution of the Ottoman Empire, the Ottoman Bank remained the bank of the state for a short period of time. Following the idea that every independent country should have a national central bank, the Central Bank of the Republic of Turkey (CBRT) was established in 1930.

Parallel to the functioning of central banks around the world, the CBRT functioned as the banker of state after its establishment. Several amendments to the CBRT laws[4] were enacted in 1934, 1940 and 1955 to enable the Treasury and many state economic enterprises to obtain credit from the CBRT easily (Capie, Goodhart, Ficher and Schnadt, 1994).

The new enactments in the responsibility of the CBRT were only baby steps in the evolution of modern central banking in Turkey. Due to the lack of development of a money market in Turkey, the CBRT did not undertake open market operations or manage rediscount securities, although it was authorized to, until the 1980s. Rather, the CBRT supplied cheap credits to government entities. In other words, although the areas of responsibility of the CBRT were wider, the operations of the CBRT in the closed economy years were limited. Therefore the years before the 1980s can be summarized as follows; Between the 1950s and the 1980s Turkey implemented close economy policies and maintained high domestic demand through government expenditures. The budget deficits of the Turkish government were financed by the CBRT reserves and the CBRT implemented a fixed exchange-rate regime. Especially after the 1960s, an import substitution strategy was on the agenda of the Turkish government. There were important economic problems due to a chronic high inflation-rate problem, low economic growth, and high current account deficits; hence a series of devaluations on the domestic currency was implemented during this period. As mentioned before, in these years,

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[4] By the Law 1211, the Responsibilities and the authorization of the CBRT were renewed in order to maintain a more active central bank in monetary policy in Turkey; the CBRT was authorized to open market operations in order to control the money supply and liquidity of the markets; the capital stock of the CBRT was increased from 15 million TL to 25 million TL. The portion of the Treasury in the capital stock of the CBRT was also decreased as the responsibility of the credit policy of the CBRT was enhanced. The CBRT credit maturities were increased. On the other hand, there was a restriction in the volume of the medium term credits by law. The medium term credits were limited to the nominal value of credits given to industrial firms, mining firms, and the small- sized craftsman by law; the CBRT was authorized to decide on the disponsibility rates and the required reserve ratio by law, although these decisions should have been accepted by the Council of Ministers and the Supreme Planning Council (CBRT, 1970).

the main function of the CBRT was to be the banker of state. Capie, Goodhart, Fisher and Schnadt (1994) summarize the condition of the CBRT as;

> Under the revision of its laws in 1970, the Bank became obliged to support the selective credit subsidies of the government. Although these have reduced during the 1980s, the first objective of the Bank remains to conduct monetary and credit policies in conformity with the Development Plans and Annual Programs.

First, the devaluation of 10 August 1970 increased the volume of exports. The remittances of workers coming from abroad were used to close budget deficits. On the other hand, the oil, electricity, cement, coal and other raw material prices were increased as a result of the devaluation. The populist policies regarding the wages and incentives given to farmers caused the inflation rate to rise again. The Turkish government tried to decrease the affect of oil shocks by financing the external debt using the reserves of CBRT and by short term credits which can be seen as temporary solutions.

3.2.   MONETARY POLICY IN THE 1980S

After a trial of monetary targeting with a 20 years lag of their counterparts, the Turkish economy got through tough transformations in the 1980s. The liberalization program of 1980, known as the 24 January Decisions, triggered a need for the re-description of central banking in Turkey.

The discussion of whether it was necessary or more beneficial to liberalize the financial system at that time or not is a subject of another thesis. In this section, the transformation of the Turkish economy and the policies of the CBRT in this environment will be discussed.

3.2.1.   LIBERALIZATION OF INTERNATIONAL TRADE

The import substitution strategy of the 1960s and 1970s was replaced by an export oriented growth strategy after the 24 January Decisions. Under the liberalization

program, the first action was to establish an Export Promotion Fund under the control of the CBRT. Exporters who had incentive certificates could get credit from the fund. Supporting the export oriented strategy and the liberalization of the international trade and financial system were the consecutive corner stones of the 24 January Decisions.

3.2.2. LIBERALIZATION OF FINANCIAL SYSTEM

According to the new economic agenda, a fixed exchange rate regime was thought to be detrimental and the TL should have been devalued to support exporters. Therefore, on the 1st of May 1981, a relatively flexible exchange rate regime was introduced. It was decided that the exchange rates would be declared on a daily basis by the CBRT.

In 1983, the CBRT was authorized to manage the national gold and foreign exchange reserves. Moreover, the statement 'the fundamental responsibility of central bank is to maintain price stability according to the needs of economy' was added to the laws of the CBRT (CBRT, 2002).

During the 1970s, due to rapid increases in the inflation rate, negative real interest rates were experienced. To prevent commercial banks from having a cartel-like power over interest rates, which would have caused the interest rates to be higher than they were supposed to be, the CBRT was authorized to arrange deposit rates in 1983 (Önder, 2005).

On July 07th 1984, the exchange rate regime was liberalized through the following regulations by decree number 30; the restriction on the importation of TL banknotes, metal coins and other payment instruments were lifted, as was the restriction on the circulation of foreign currencies within the country, and the investments of foreign citizens in the country were permitted. The CBRT was equipped with the monopoly power of gold reserve exportation. The commercial banks were permitted to determine their own exchange rates within the band of

policy rates declared by the CBRT on a daily basis (CBRT, 2011). Although the existing laws tried to prevent the use of the CBRT resources to finance the government budget deficits, these principles were violated several times in the second half of the 1980s.

In 1985, to slow down the increase in the inflation rate and increase the portion of long-term deposits, the long-term interest rates were kept high and the CBRT gained the responsibility of designating the deposit rates monthly (Önder, 2005). As mentioned before, the CBRT reserves had been used to finance the budget deficits before the 1980s. The CBRT had financed these debts by printing money which eventually had been causing an additional inflation burden to the economy. In 1985, the CBRT began to conduct domestic government bond auctions (CBRT, 2002). The fiscal dominance on the CBRT balance sheet was alleviated fractionally. An advantage of using domestic government bonds was that the interest rates on these bonds were accepted as good indicators for the market rates as the auctions were arranged in a competitive environment, included no credit risk and were big in scale compared to other financial movements (Kesriyeli, 1997). Additionally, the required reserve ratios were reduced to 15% from 25% and the interest rate paid for the reserves was stopped (Kesriyeli, 1997).

In 1986, the first monetary policy program was designed. The program was based on monetary targeting. The monetarist ideas on the link between real interest rates and real exchange rates dominated the first monetary policy program (Kesriyeli, 1997). Here, one should notice that the Turkish monetary policy followed the monetarist arrangements, called monetary targeting, with a ten year lag behind the practices of the Bundesbank, the Federal Reserve, and the central banks of Canada and Switzerland.

In 1987, the CBRT began open market operations. Within the CBRT, a monetary policy committee was established on October 22, 1987 which aligns to our modern meaning (CBRT, 2011). Moreover, the right to determine the deposit rates was again given to the commercial banks on 12 October 1988 (CBRT, 2002).

In 1989, the convertibility of Turkish Lira into foreign currencies was enabled as an important corner stone of the financial liberalization target of the government. On the other hand, the Turkish economy had important deficiencies. The banking sector was highly fragile, especially because of the bad liquidity positions of public banks. Lower foreign direct investment and domestic savings than expected were important problems for the sustainability of the economy. In addition, high public financing requirements created by state owned enterprises, subsidies and a loose fiscal position resulting from populist politics created inflationary pressure on monetary policy. Figure 1 shows that the inflation rate, which accelerated in the period from 1986 to 1989.
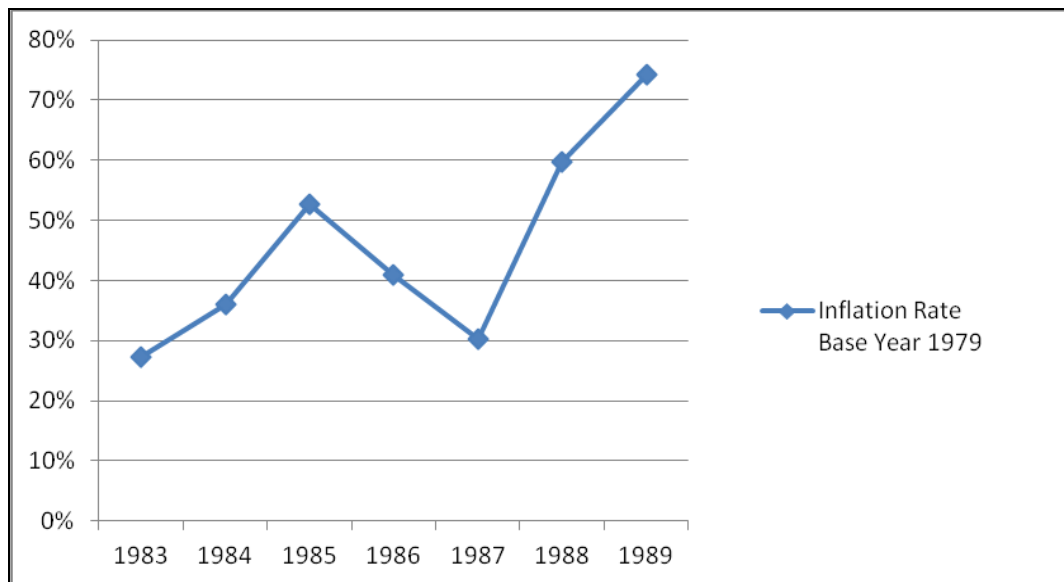
Figure 1 Inflation Rates (1983-1989)
Source: CBRT
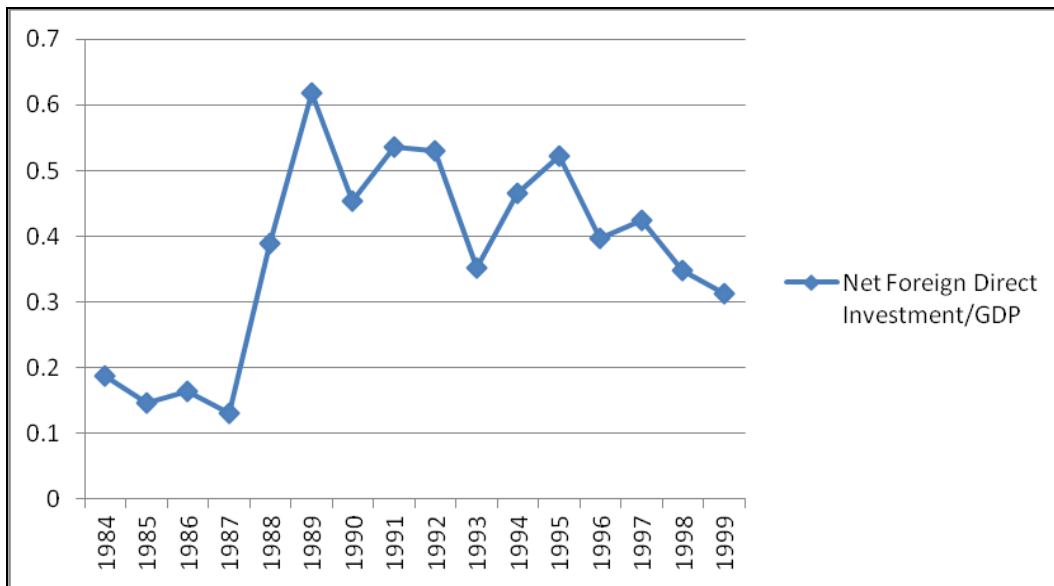
**Figure 2 Foreign Direct Investment to Gross Domestic Product (1984 – 1999)
Source: World Bank**

As can be seen in Figure 2, foreign direct investment did not increase in the period from 1984 to 1987 although the January 24 Decision makers thought the foreign investment in the country would increase when trade liberalization and financial liberalization took place. Although the proportion of foreign direct investment in gross domestic product seemed to be an increasing trend in the period from 1987 to 1989, it was very unsatisfactory. The foreign direct investment to gross domestic product ratio was 0.1% in the 1970s and it only increased to 0.4% in the 1990s (CBRT, 2002). Therefore the liberalization policies of the government which had intended to attract more foreign direct investment to support growth and employment were not successful. For instance, the permission of 31.3 billion U.S Dollars foreign direct investment was granted, however, only 17.2 billion U.S dollars of it actually entered Turkey in the period between 1980 and 2001 (CBRT, 2002). The foreign investments to the country were in the form of short term capital flows rather than long term investments.

The chronic high inflation rate problem remained intact throughout the 1980s. As can be seen from Figure 2, the inflation rate peak continued until 1985 and then

slowed down during the period from 1985 to 1987. This period coincides with the implementation of domestic government bond auctions and the beginning of the first monetary policy program. After 1987, the inflation rate peaked again.

Moreover, as can be seen from Figure 3, the short term proportion of the external debt increased after the financial liberalization took place and therefore the economy became vulnerable to external shocks and sudden capital outflows. Şahinbeyoglu (2001) has also criticized the financial liberalization decision, arguing that combined with a chronic inflation problem and public financing requirements, liberalization imposed significant constraints on the CBRT's policy choices.
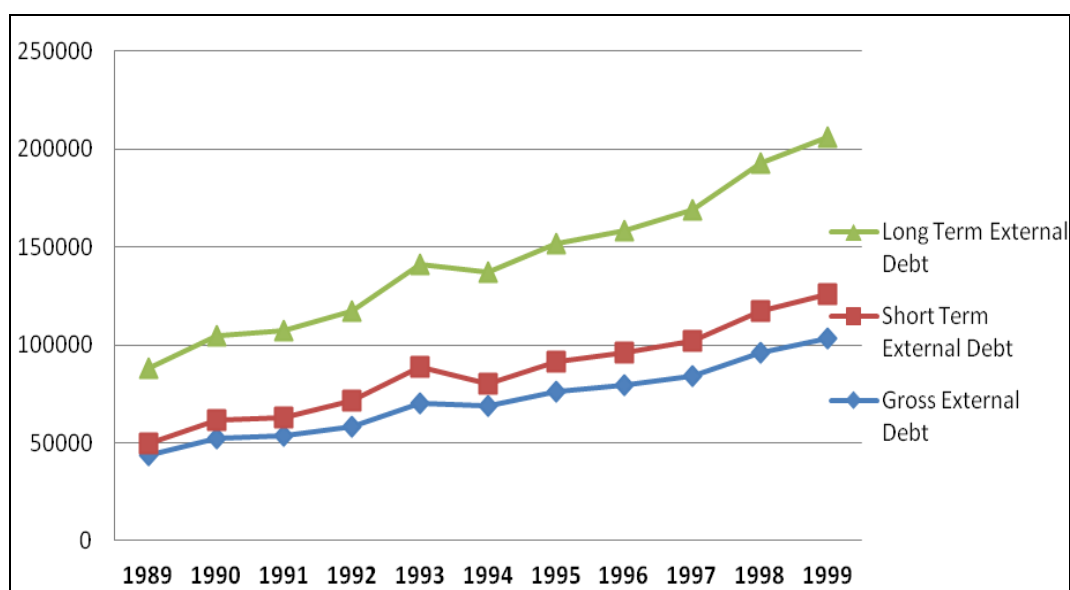
Figure 3 External Debt Profile (1989 - 1999)
Source: CBRT The Data is in Millions of US Dollars

Another important year for monetary policy in Turkey was 1990. The CBRT for the first time announced its monetary policy publicly. Formerly, the CBRT had not declared the targeted size of M1 and M2 as magnitudes for monetary targeting. In 1990, the CBRT targeted certain levels on total balance sheet growths, total

domestic debts, total domestic assets and the CBRT reserves and announced its targets publicly (Kesriyeli, 1997). Furthermore, in 1990, there were fundamental changes in the trade regime. The custom house regulations were loosened and quotas and restrictions on a list of goods were reduced, which can be counted as another step in trade liberalization. As mentioned in Chapter 1, starting from the 1980s majority of countries started to liberalize their financial system and trade. Therefore, the liberalization of trade movements was parallel to the trend in the world.

The restriction on short term advances used by the Treasury and a better auditing mechanism on the rediscount window of the CBRT was an important progress of the 1990s. On the other hand, as the chronic inflation problem could not be solved, the economy faced high dollarization. Additionally, liberalizing the capital movements made the economy more vulnerable to external shocks. The banking sector which had been dominant in Turkish financial markets was highly fragile and the auditing mechanism was not functioning well. Henceforth, there was an urgent need for thorough reforms in the banking sector, which will be elaborated on below.

3.2.3.   BANKING SECTOR REFORMS

The banking sector had a dominant role in the Turkish financial system, therefore, maintaining a competitive structure within the system and ensuring proper functioning of the banking channel had a great value for financial stability. Therefore, this subsection was added to the banking sector reforms of the 1990s, on the basis of which financial liberalization gained impetus in the Turkish economy.

Establishing the credibility of the banking sector was the first step in creating a well-functioning system. Therefore, the Savings Deposit Insurance Fund (SDIF) was established in 1983. After guaranteeing deposits, the second step was to create a main framework in order to establish an auditing mechanism. The

standardization of the accounting system to internationally accepted rules was achieved partially by a 1985 banking law (CBRT, 2002). Although the banking system was in need of a more precise structural transformation and had transparency problems, the auditing mechanism could not be operated fully.

3.3.   THE TURKISH CENTRAL BANKING FROM 1991 TO 1994 PERIOD:

Although there were reforms in the banking sector, the Gulf Crisis and the political uncertainties stemming from an early election decision made it difficult to stabilize monetary policy. In this environment, the CBRT, rather than announcing its program, tried to stabilize the financial markets and prevent pressure on exchange rates[5] without having big losses on reserves (Kesriyeli, 1997). As the public borrowing requirements were in an increasing trend, to relieve the burden of the budget deficit, the government tried to reduce the interest rates on treasury bonds. This action created uncertainty and the demand for treasury bonds reduced drastically. The restriction on advances given to the Treasury could not be implemented in this environment. The CBRT could not announce its program in 1993 due to excessive budget deficits. The CBRT could not prevent the speculative attacks to the foreign exchange reserves as it was seen as the only safe position in the domestic financial market. Additionally, in 1993, the tariffs on imported goods were lifted totally, which worsened the current account balance.

The monetary policy of the 1990s was based on managing public financing problems. Therefore the domestic currency was revalued, which deteriorated the trade balance. Figure 4 shows the proportion of current account deficits in the gross domestic product of Turkey. Figure 4 makes clear that the proportion of current account deficit in gross domestic product peaked in 1993. This supports the idea that the current account deficit of the year 1993 was one of the main causes of the 1994 crisis.

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[5] The policy rates can be seen on Figure 5.
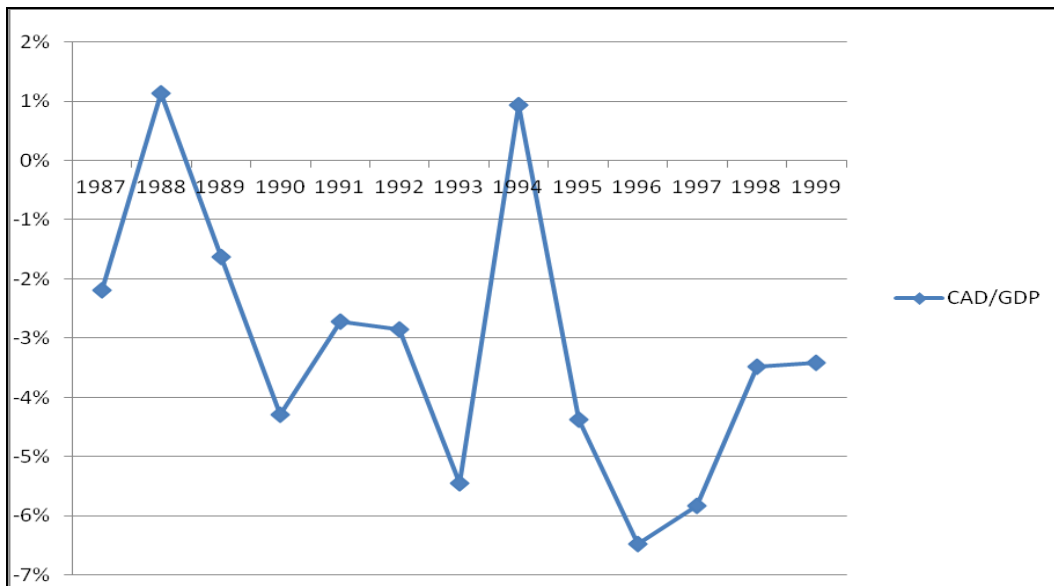
Figure 4 The Share of Current Accounts in GDP (1987 - 1999)
Source: CBRT

To sum up, problems such as the Gulf War in 1991 caused political instability and loose fiscal policy. In addition to that, an impotent central bank and a fragile banking sector together resulted in a financial crisis in the first quarter of 1994. As a result, Turkey experienced a massive decline in its growth rate, with three digit inflation rates. On 5 April 1994, a stabilization package was put into practice. Once more, the stabilization package put a quota on short-term advances to the treasury.

3.4. THE IMPLEMENTATIONS OF THE CBRT IN 1995 – 2001 PERIOD:

The main course of action of the CBRT in the period from 1995 to 1999 was to decrease fluctuations in exchange rates by preventing speculative attacks on the exchange rate markets. The root causes of the fluctuations in exchange rates can be counted as being caused by the political uncertainty due to the early election decision of 1995, joining the Customs Union and the end of a standby agreement with the IMF (Kesriyeli, 1997). The Turkish financial crisis of early 1994 shaped

the policies of the second half of the 1990s and precautions were taken in order to reduce the political influence on monetary policy and to increase the coordination of fiscal and monetary policies (Şahinbeyoglu, 2001). Therefore, the CBRT, in light of the experiences of the 1994 crisis, mainly aimed at stabilizing the real interest rates and dealing with speculative attacks on exchange rates (CBRT, 2011).

The economic agents' expectations were heavily dependent on the movements of the nominal exchange rate, which was a compact information source for future inflation rates (Basci, Ozel and Sarikaya, 2007). It was widely believed that having high reserves would maintain a stronger position against such speculative attacks. Therefore parallel to the world wide trend, the CBRT tried to increase its foreign exchange rate reserves in this period. As can be seen in Figure 5, the tendency in policy exchange rates was to increase after 1994 and the band width was also expanding.
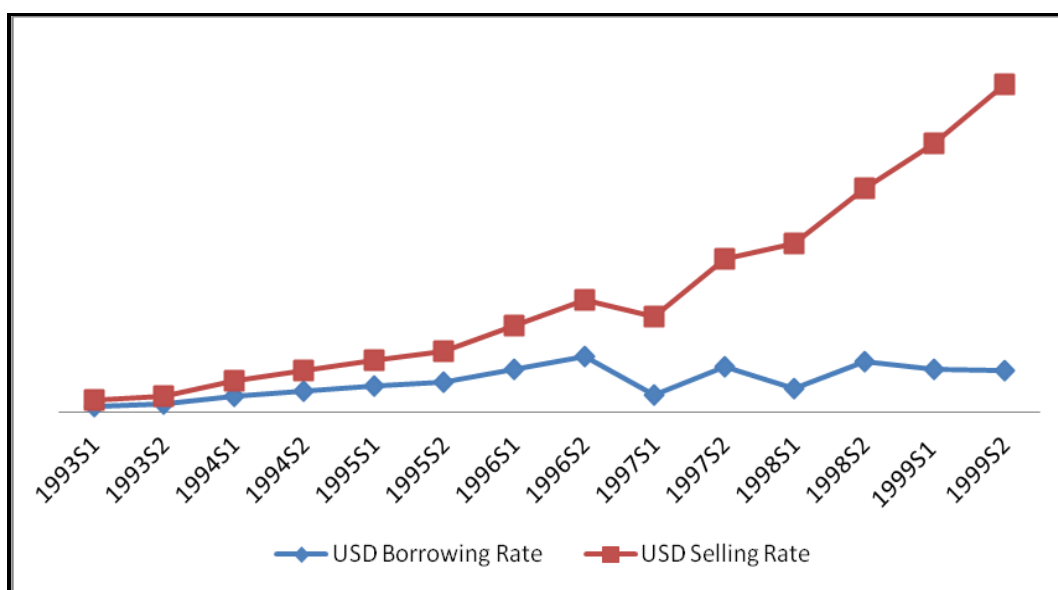
Figure 5 The CBRT Exchange Rates (1993 – 1999)
Source: CBRT The data is Semiannual

As mentioned before, there were fundamental structural problems in the banking sector, mainly in the structure of public banks. With the Second Banking Law, implemented to catch up with the European Union standards and to strengthen the auditing mechanism, the Banking Regulation and Supervision Agency (BRSA) was established on 18 June 1999. The BRSA imposed internal auditing and established risk management systems on commercial banks. Mainly due to the financial weaknesses of the public banks and despite the new regulations and legal arrangements, the banking system continued to be fragile at the end of the 1990s.

At the end of 1999, due to external shocks and the unstable domestic conjuncture, an economic program which took the exchange rate as an anchor was put into place. The main function of this IMF supported program was the declaration of exchange rate prices in advance. For a year and a half, the exchange rate was declared one day before it actually took place. The reason behind this strategy was to add new instruments to tight fiscal and monetary policy to curb the inflation rates as fast as possible (Özatay, 2009). Şahinbeyoglu (2001) argues that the most striking feature of this program was its attempt to influence expectations, and thus prices, through a crawling-peg exchange rate regime, because the exchange rate had a strong impact on prices. The program was seen as a good solution because of high dollarization; on the other hand, it came with its own structural problems. For instance, according to Görmez and Yılmaz (2008), there were important deficiencies regarding the design of the stabilization program as well as some failures in the execution of structural reforms. The IMF had promised four billion dollars in financial support for the exchange rate based program. According to Görmez and Yılmaz (2008), this financial support was not enough because only the Treasury's operation for restructuring state and intervention to the banks amounted to 17.4% of the GNP in 2000.

Table 1 The 2000 Exchange Rate and Monetary Policy Report Data

The Macroeconomic Variable	Aimed	Realized
GDP Growth %	5	6,3
Exchange Rate %	20	20
Wholesale Price Index (WPI)	20	33
Consumer Price Index (CPI)	25	39
Current Account Deficit (CAD in billion U.S dollars)	-4	-9,8
Privatization (in billion U.S dollars)	7,6	3,3

Source: CBRT

The program collapsed in February 2001 due to the fragile banking sector, high current account deficits, and high inflation[6] and interest rates[7] in Turkey. In the chapters ahead, we will see that the high current account deficit will continue to be a significant problem for sustainability of a healthy economy in Turkey. In addition, the unstable political environment of the times harmed the already fragile markets.

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[6] The annual change in consumer price index based on 1995 year prices was 56.30.
[7] See table 9 for the policy interest rates of the period from 2002 to 2011.

Current Account Deficit
1995-2001
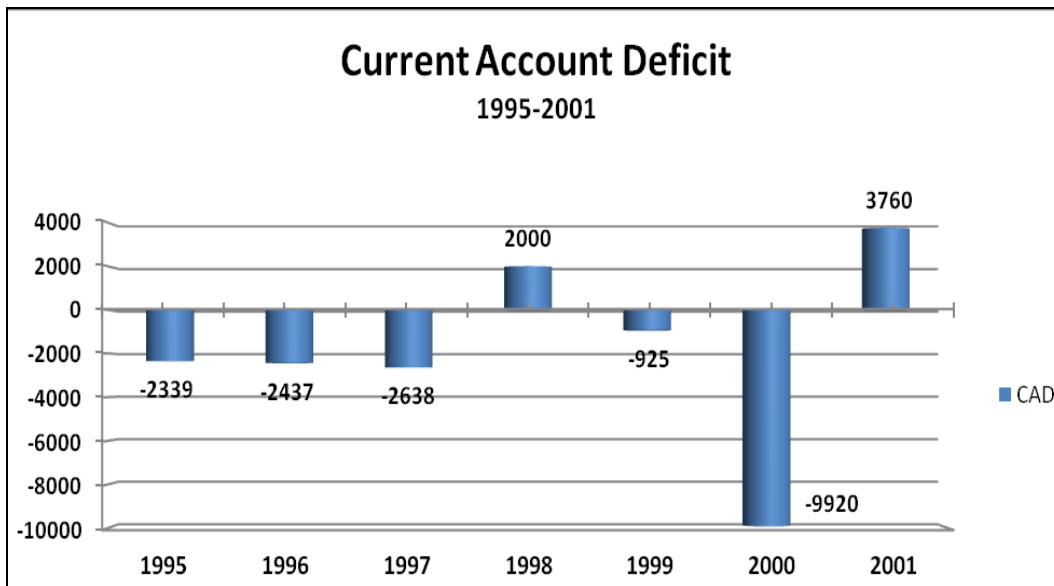
Figure 6 The Current Account Deficit (1995 – 2001)
Source: CBRT The Data is in Millions of U.S.D.

As can be seen from Figure 6, the current account deficit increased from 925 million dollars to 9.920 million dollars in 2000. The current account deficit was not the only source of the crisis; however, it further worsened the economy, due to the fragile and vulnerable banking sector. Henceforth, it was seen that the Turkish banking sector was in need of fundamental transformations.

Besides the fragility of banking sector, the budget deficit burden on the CBRT reserves was another problem of the term as the reserves were used to close the deficits. Fixing the exchange rate became difficult in this environment. Özatay (2009) argues that the central bank, while trying to fix the exchange rates, could not prevent the reserves from decreasing; this in return decreased the monetary base and increased interest rates. The uncertain environment increased the vulnerability of banks, which were in need of credits, and the commercial banks did not open credit to each other.

As a response to the pressure on the central bank's reserves, on the 22 of February 2001, a floating exchange rate regime was adopted (CBRT, 2010). As mentioned

in Chapter 1, majority of developing countries adopted floating exchange rate regimes during the 1990s. Therefore this reaction of the CBRT was parallel to its counterparts. Here, one should notice that in emerging economies the foreign exchange rate is a matter of concern because the foreign exchange reserves' position is significant in removing the unfavorable effects of potential internal and external shocks. Therefore, the CBRT, although letting the foreign exchange rates float, announced that it would intervene in the markets in cases of excess volatility, without affecting the long-run equilibrium level of the exchange rates.

The year 2001 can be seen as a milestone for the CBRT because it was the starting point for the structural transformation of the banking sector. The report of BRSA on the Banking Sector Restructuring and Rehabilitation Program summarized the structural problems of the banking sector as follows;

- Unstable macroeconomic environment
- Inadequate assets
- Share of small and medium sized banks
- The high share of public banks within the system
- Weak asset quality
- Inadequate self auditing, risk management and transparency (BRSA, 2002).

The targets of the program were to reconstruct the public banks, to dissolve the banks which were in a bad financial position, to strengthen the private banks' financial conditions, to increase the depth of auditing and the effectiveness of the BRSA on the banking system through regulating the assets, risks, limiting credits and reserves, re-regulating the accounting standards and encouraging activities to merge in the banking sector (BRSA, 2002).

Furthermore, the independence of the CBRT was granted by law in the same year. As we know, one of the most important reasons behind skyrocketing inflation rates was the use of the CBRT's reserves to close the budget deficits of the Treasury. Direct crediting to the Treasury was banned by law on 25 April 2001.

To conclude, in this section the evolution of the CBRT in the period from 1930 to 2001 was assessed. As described, the CBRT was established within the spirit of the nationalization movements of the 1930s. The main function of the CBRT was to be the banker of state during the closed economy years. Financing the government debt was the main function of monetary policy, although the Law of CBRT provided wider functions to the CBRT. The main deficiencies of the closed economy years were summarized as a chronic high inflation rate problem and high current account deficits. Hence, the CBRT devalued the domestic currency several times in this period. One important milestone for the evolution of modern central banking in Turkey was the liberalization movement of the 1980s followed by the January 24 Decisions. The Turkish economy experienced a series of deregulations in many areas during the 1980s. Monetarist ideas and monetary targeting dominated the second half of the 1980s. Although there were several amendments to prevent it, the practice of using CBRT's reserves for financing the government debt continued. The 1990s brought about a highly unstable political environment which eventually influenced monetary policy. The Gulf Crisis of 1991 and political uncertainties stemming from an early election decision made it difficult to stabilize the monetary policy during the first half of the 1990s. In this environment, the CBRT tried to stabilize the financial markets and to prevent pressure on exchange rates[8] without having big losses in reserves (Kesriyeli, 1997). As the public borrowing requirements were in an increasing trend, to relieve the burden of the budget deficit the government tried to reduce the interest rates on treasury bonds. This arrangement backfired as it created uncertainty and the demand for treasury bonds reduced drastically. The CBRT could not prevent the speculative attacks on the foreign exchange reserves as they were seen as the only safe haven in the domestic financial market. Consequently, the 1994 crisis was inevitable. From that time onward the CBRT got through reactionary policy implementations. The main course of the action of the CBRT in the period from 1995 to 1999 was to decrease the fluctuation in exchange rates which were mainly caused by political

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[8] The policy rates can be seen in Figure 5.

uncertainty, the early election decision of 1995, the joining of the Customs Union and the end of a standby agreement with the IMF. The fragility of the banking sector was another important economic problem in this period. Therefore, to catch up with European Union standards, and to strengthen the auditing mechanism, the Banking Regulation and Supervision Agency (BRSA) was established on 18 June 1999. In 2000, the CBRT implemented another reactionary policy to find a panacea for the economic problems. The IMF support for this economic program was based on the declaration of exchange rate prices in advance. In hopes of reducing the inflation rates and the fluctuations in the market exchange rates for a year and a half, the exchange rate was declared one day before it actually took place. The program collapsed in 2001 because of the highly fragile banking sector, high current account deficits, and high inflation and interest rates in Turkey. In response, on 22 February 2001, a floating exchange rate regime was adopted. The Crisis of 2001 made the vulnerability of the banking sector clear, which was then followed by a series of reforms in the banking sector. A transformation program held by BRSA was put in to action. The targets of the program were to reconstruct public banks, to resolve the banks with bad balance sheets, and to strengthen private banks' financial conditions, as well as to increase the depth of auditing on banking system.

CHAPTER 4

THE TURKISH EXPERIMENT WITH AN INFLATION TARGETING REGIME

After a trial with an exchange rate targeting, the search for the right monetary policy continued to be a debated issue in Turkey. The CBRT had been searching for the right policy choice and one can observe that there were several reactionary policy shifts in the history of Turkish monetary policy.

In the first chapter, it was shown that the Turkish economy got through tough transformations from a closed economic policy to export oriented economic policies. The CBRT reserves, although there had been several amendments to prevent it, had been heavily used to close budget deficits. As mentioned previously, this misuse of the reserves was one of the main reasons behind a chronic high inflation problem in Turkey. With the help of trade and financial liberalization, the open economy conditions made it evident that the banking sector was heavily disorganized and the controlling and auditing mechanisms were not functioning well. Therefore, the open economy conditions brought about by the trade and financial liberalization uncovered the extent of disorganization and the lack of auditing in the banking sector which had made the money markets even more fragile.

As mentioned in detail in the first chapter of this thesis, the policy shifts of the CBRT have always coincided with an economic crisis. Therefore one may argue that the policy shifts of the CBRT have been reactionary. For example, the CBRT tried to conduct a monetary targeting program in the 1990s which collapsed in the crisis of 1994, an exchange rate targeting policy from 1995 to 2001 which collapsed in the 2001 banking sector crisis and an inflation targeting policy which collapsed in the global financial crisis of 2008. Nowadays, a new policy regime is in use, namely financial targeting, which will be discussed in the next chapter in detail. This chapter will focus on the practices of the CBRT from 2002 till 2011.

The outline of the chapter is as follows. First, Section 4.1 will describe the inflation targeting strategy of the CBRT. Section 4.2 will be focused on the transition to a floating exchange rate regime after 2001 as an important part of the monetary policy of the period from 2002 to 2008. Section 4.3 will include a short assessment of the implementation of inflation targeting policies of the CBRT and its effectiveness. Section 4.4 will investigate the effects of the global financial crisis on the Turkish economy and Section 4.5 will summarize the precautionary measures taken by the CBRT and BRSA. Finally, Section 4.6 will describe the exit strategy of the CBRT from the crisis economy which has not materialized and an assessment of these policies. The last section concludes the discussion.

Inflation targeting can be described as using inflation rate as an anchor for the economy to manage expectations through monetary policy. The main tool to implement inflation targeting is short term interest rates. It is important to have a good understanding of monetary transition mechanisms [9] to understand the rationale behind inflation targeting. Theoretically, inflation targeting regimes affect the economy through four different channels which are the interest rate channel, credit channel, exchange rate channel and asset prices channel.

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[9] The transition channels that the inflation targeting affect the economy are described in the Appendix.

There are four important factors that can influence the effectiveness of inflation targeting regimes through the transition channels namely; transparency, credibility, institutional commitment to the target and the accountability of the central banks. According to the proponents of an inflation targeting regime, to be successful an inflation targeter first should be transparent in its commitment. As influencing the expectations through transition channels about future inflation rates is one of the main courses of inflation targeting, the policy maker should be sensitive to what message to announce to the public. Walsh (2009) points out the importance of transparency on inflation targeting by stating that "…in many ways, the communications and transparency are the hallmark of inflation targeting". The target measure should be easy to understand and the policy maker should be able to catch the attention of the public through clear announcements. Mishkin (2001) asserts that although most emerging economies announce reports on inflation objectives, this should not be confused as inflation targeting. The inflation targeter should stick to the other four elements of effectiveness rather than simply announcing its annual objectives to the public (Mishkin, 2001).

Second, an inflation targeter should be strongly credible in order to influence the public. It should be clear that the inflation targeter has the power to control its target and has the necessary tools to be effective.

Third, accountability is an important aspect for inflation targeting. As previously mentioned, the numeric target of the policy maker should be clear and easy to understand. Moreover, the actions of the policy maker in developing the aims of a specific target should not cause misunderstandings. In other words, the mixture of the overall monetary policy should give one clear signal to the public about the target to be attained. Good communication and transparency increases the accountability of the policy maker.

The last factor that influences the effectiveness of an inflation targeting regime is strong commitment to the target. The policy maker should be strongly committed

to its targets, although macroeconomic policy has always been under pressure from other policy makers. A strong commitment to a specific inflation target is subject to criticism as it may forsake other important goals of the overall economy such as employment and output stability. Therefore, the inflation targeter should balance its objectives and not over-emphasize inflation targeting in place of other concerns.

The effectiveness of the monetary transition channels described above is a much debated issue. As economic conditions vary from country to country, the effectiveness of the channel may differ as well. Mukherjee and Bhattacharya (2011) summarize the common features of emerging markets, including Turkey, which may affect the effectiveness of monetary policy. They (2011) assert that the emerging markets commonly have underdeveloped financial systems characterized by a fragile banking sector due to underdeveloped judicial systems and a lack of harsh competition among banks and are as a result vulnerable to external shocks due to the importance of volatile aids, export revenues and remittances to the economy (Mukherjee and Bhattacharya, 2011). The lack of a well organized auditing mechanism for the financial markets can be another common feature of these markets. Having knowledge of the transition mechanism and in the light of these common features, the monetary policy of the CBRT from 2002 to 2009 will be discussed in section 4.1.

4.1.   THE INFLATION TARGETING PERIOD OF 2002-2009

Following the collapse of the exchange rate based program of 1999, the CBRT first started to implement inflation targeting implicitly[10].

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[10] Implicit inflation targeting is defined as the announcement of inflation targets to public but not the details and the regime to be implemented. For more details see Kara and Orak (2009).

After implementing some internal transformations and the regulations of BRSA in the banking sector, the inflation targeting strategy was adopted fully by the CBRT (Özatay, 2009).

The period from 2002 to 2005 can be called a new transition period because significant structural reforms in the banking sector were implemented. In addition, not only did the policy choice of the CBRT change once more, but also the independence of the CBRT was granted by law within this period.

In 2002, an implicit inflation-targeting program was put into practice. There were two nominal anchors to be used in the new monetary policy of 2002 in Turkey, namely monetary targeting and inflation targeting. Although monetary targeting was seen as an obsolete monetary policy, the signed IMF's standby agreement put limitations on some monetary aggregates (Ersel and Özatay, 2007). Therefore the reason behind using two nominal anchors as explained by Ersel and Özatay (2007) was the limitation of the IMF standby agreement on base money, net domestic and international assets of the CBRT and the need for a new anchor for the economy other than the exchange rate after the 2001 banking sector crisis.

As mentioned above, the CBRT first implemented inflation targeting implicitly. There were important reasons behind this gradual transition. As mentioned previously, there are four important factors that the policy maker should possess in order to be effective in implementing an inflation targeting regime. One of these factors was credibility. According to Özatay (2009), the CBRT was prudent in shifting from one policy to another mainly because of the uncertain economic environment. Influencing expectations is crucial in inflation targeting regimes. Moreover, the anxiety of investors and households could have been triggered by even a little shock.

According to the proponents of inflation targeting strategy, another important factor in being successful in the inflation targeting regime is accountability. After the 2001 crisis it was seen that the banking sector was in need of very important

reforms and that people were still suspicious about the credibility of the central bank. The accountability of a specific inflation target was hardly possible in an environment where the auditing mechanism was not operating well and needed to be transformed and the performance of the policy maker was questionable due to previous judgment errors. Therefore, the CBRT did not feel confident about managing expectations at that time and preferred to move gradually towards an inflation targeting regime.

The CBRT's strategy was to adjust interest rates in response to the deviations of inflation rate from a targeted path, which was supposed to enable the CBRT to influence inflation expectations (Basci, Özel and Sarikaya, 2007). The CBRT, rather than targeting a point inflation rate, set the maximum inflation rates it preferred within this period. As there was a gradual movement towards an inflation targeting regime, the course of transparency was not fully maintained. Rather, a trial and error method was utilized in the period from 2002 to 2005.

Following the implicit inflation targeting trial, the CBRT implemented explicit inflation targeting in the period from 2006 to 2008. The CBRT gained confidence with the results of the implicit inflation targeting period. In the explicit version of inflation targeting, the CBRT publicly announced its point targets and set the policy rates accordingly. Therefore it can be said that the CBRT benefitted from the advantage of being more precise in this period to gain more accountability as the point targets were easier to understand for the public than the implicit version of inflation targeting. Moreover, announcing point targets was a necessary condition for credibility. The CBRT determined an uncertainty band and formed special CPI aggregates which exclude the CPI items that were affected mostly by external factors. The details of the targeted path both for the implicit and explicit inflation targeting periods can be found in Table 2. The realized inflation rates were 8.39% and 10.6% percent in 2007 and 2008 respectively, whereas the targets were four percent for both 2007 and 2008. We believe that although the global

economic conditions were supportive, the CBRT could not maintain its point targets. The details of this discussion will be elaborated in section 4.3 of this thesis.

Table 2 Targeted and Realized Inflation Rates

Years	Percentage Changes Based on Previous Year's Month of December	
	Realized Inflation Rates	**Targeted Inflation Rates**
2003	18,4	20
2004	9,3	12
2005	10,53	8
2006	9,65	5
2007	8,39	4
2008	10,06	4
2009	6,53	7,5
2010	6,40	6,5

Source: CBRT

4.2.   THE EXCHANGE RATE REGIME AFTER 2002

The exchange rate regime is an important aspect of monetary policy. Especially for developing countries, exchange rates have become a fundamentally important parameter for the overall economy because the majority of developing countries have become open economies since the advent of financial liberalization. One should notice here that developing countries are subject to foreign exchange risk because the majority of them do trade in foreign currencies rather than using their domestic currency. The majority of developing countries, after implementing pegged exchange rate regimes or fixed exchange rate systems, began using floating exchange rate systems. As mentioned in detail in the first chapter, in the Bretton Woods system all currencies were pegged to the U.S Dollar. After the collapse of the Bretton Woods system, the majority of developing countries continued to use pegged exchange rate systems such as crawling pegs, soft pegs,

or currency anchors. It was widely believed that fixed exchange rate systems were good for developing countries because they could control expectations, eliminate uncertainties and prevent trade deteriorations caused by exchange rate volatility problems. Furthermore, controlling the economy through interest rate policy was believed to be easier when exchange rates were fixed.

On the other hand, the main weakness of these systems was that they were unsustainable when a speculative attack in place. The examples of this weakness can be seen in the European exchange rate crisis in 1992, the Mexican peso collapse in 1994, the Asian financial crises of 1997-98 and the Argentine peso collapse in 2000. Therefore, when one investigates the Turkish exchange rate targeting trial of 2000 in particular, it may be seen that it was inevitable for the Turkish exchange rate regime to collapse in the Turkish banking crisis of 2001 mainly due to similar reasons. After some trials and errors, the CBRT decided to float the exchange rate while implementing inflation targeting.

Moreover, as mentioned above, one of the important factors that the effectiveness of inflation targeting depends on is strong commitment to the target. Therefore, it would not be wrong to argue that a floating exchange rate regime is a prerequisite for inflation targeting. If during the inflation targeting period the exchange rate targeting strategy is continued, the inflation rate will be strictly dependent on the future value of the foreign exchange rate that the domestic currency was fixed to. In other words, the inflation rate as a target will be dependent on exchange rates because of the pass through effect[11] of an exchange rate to inflation. As a result it would hinder the targeting strategy of the CBRT.

On the other hand, one should keep in mind that implementing a floating exchange regime has its own challenges as well. Although the CBRT adhered to a floating exchange rate regime, it intervened in the exchange rate markets on urgent occasions. The interventions of the CBRT under the flexible exchange rate regime

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[11] Exchange rate pass through is described as "the transmission of a change in import costs to domestic prices of imported goods" (Flamini, A., 2004).

from 2001 to 2008 can be seen in Table 3. However, as will be discussed in the next part the CBRT could not prevent exchange rate from an overvaluation trend.

Table 3 Net Foreign Exchange Purchases and Sales of the CBRT

Years	Direct FX Purchase Interventions	FX Purchase Auctions	FX Sales Auctions	Total Purchased
2001	-	-	6553	**-**
2002	4	795	-	**799**
2003	4229	5653,8	-	**9882,8**
2004	1274	4104	-	**5378**
2005	14565	7442,6	-	**22007,6**
2006	3336	4296,1	1000	**6632,1**
2007	-	9906,1	-	**9906,1**
2008	-	7584,5	100	**7484,5**
TOTAL	**-**	**-**	**-**	**62090,1**

Source: CBRT
The data is in Million U.S. Dollars

From 2002 to 2008, in which time the CBRT started to implement inflation targeting and let the foreign exchange rate float, the CBRT purchased almost 62 billion U.S dollars via either auctions or direct interventions. Therefore Table 4 shows that the foreign exchange rate still is and has to be a matter of concern for the CBRT. As a majority of developing countries began to implement floating exchange rate regimes, the CBRT also tried to increase its FX reserves while at the same time allowing the FX to float because it was assumed that the strong FX position of a central bank is necessary in case of a speculative attack on the FX markets.

4.4. AN ASSESSMENT OF 2002 TO 2008 PERIOD

In this section, a short assessment of the practices of the CBRT in the period from 2002 to 2008 will be presented. To assess the performance of the CBRT, the developments in some relevant macro indicators such as inflation rates, unemployment rates, gross external debt profiles and the current account deficits will be explored. In this section it will be described that although the inflation targeting program of the CBRT had some merits, it created important deficiencies in the economy. Favorable economic conditions in the international arena caused capital inflow to the country. On the other hand, the high GDP growth performance did not lead to a decrease in the unemployment rate. Moreover, attractive crediting conditions increased the gross external debt of Turkey. In addition, because of the lack of articulation in the economy, exportation was heavily dependent on the importation of intermediate goods; therefore the favorable economic conditions did not help the current accounts to be balanced.

As mentioned at the beginning of Section 4.1, the period from 2002 to 2005 can be called a transition period. One of the fundamental developments within this transition period was the transformation of the banking sector that was conducted by the BRSA. The BRSA took various measures to solve the problems in the banking sector which were believed to be the main causes of the banking sector crisis of 2001. The study of Akın, Aysan and Yıldıran (2008) assessed the implementations of BRSA and found that the banking sector was highly capitalized, the asset quality was better and exposures to market risks were lower compared to previous periods. However, they (2008) noted that the good condition of commercial bank balance sheets was not only maintained by the regulations of BRSA, but also by the "unusually favorable global liquidity conditions" which were effective in "26 consecutive quarters of uninterrupted growth" (Akın, Aysan and Yıldıran, 2008). In other words, although the strength of the banking sector was mainly due to the implementations of BRSA, the nearly unprecedentedly favorable global liquidity conditions also helped the financial system to stabilize.

The regulations of BRSA helped attract the inflow of highly liquidated foreign capital into the country. Tight fiscal policy and privatizations also decreased the volatilities of capital flow by decreasing market risks. On the other hand, it was too soon to talk about macro stability, at least for some time, as the excess capital inflow to the country could create high vulnerability to external shocks. Moreover, the results of the financial turmoil of 2008 showed that capital inflow to the country had caused a significant fragility in the Turkish economy. The details of the global financial crisis will be elaborated in the next section.

In addition to developments in the banking sector, the regulation regarding the independence of the CBRT was enacted in 2002. As mentioned in the first chapter, the CBRT reserves, although there were several amendments to prevent it, had been heavily used to close budget deficits in previous periods. The independence of the CBRT was granted by law in 2002. This attempt was not equal to previous attempts because the actual independence of the CBRT seemed to be maintained after the enactment of the law. This can be considered as another reason behind high capital inflows into the country after 2002.

The change in the exchange rate regime of the Turkish economy also coincided in the same period. The exchange rate started to be floated although it was still a matter of concern to the CBRT. Within the same period, the CBRT tried to decrease the sudden volatilities of foreign exchange rates while continuing to implement a floating exchange rate regime (Özatay, 2009). The CBRT tried to maintain control over foreign exchange rates through either auctions or direct interventions and purchased about 62 thousand million US Dollars in the period from 2001 to 2008 to increase its foreign exchange (FX) reserves. As mentioned in Section 4.2, it was believed that having a strong FX position in case of a speculative attack could protect the open markets from a currency crisis. Henceforth, the CBRT considered exchange rate movements in its strategic decisions. Therefore the reason behind most of these interventions was to accumulate high reserves. Moreover, the foreign exchange rate volatility may also

have affected the employment decisions and the output gap because of a change in the marginal rate of substitution between labor and capital if the capital consists of imported inputs (Hatipoglu and Alper, 2008).

On the other hand, these interventions cannot be affective if the speculative attacks persist for a long enough time in an open economy. The foreign exchange (FX) reserves of the CBRT are not unlimited. Therefore, when the CBRT intervenes in the markets to keep the FX rate on the preferred level, the FX reserves are decreasing. As a result, in the case of a huge speculative attack, using the FX reserves may not be a sustainable solution.
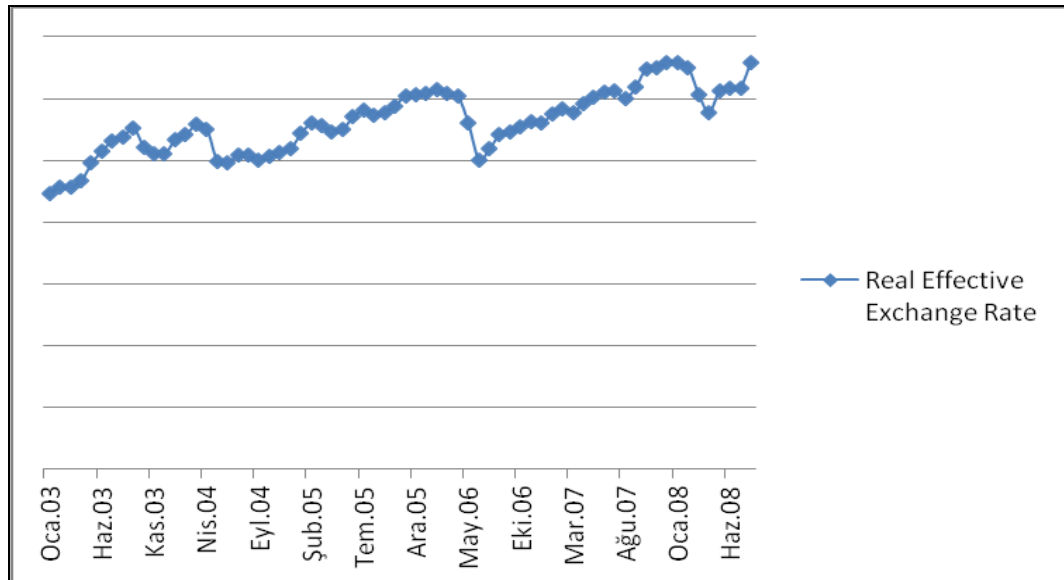
Figure 7 The Real Effective Exchange Rate
Source: CBRT The data is based on CPI (2003=100)

When one analyzes the foreign exchange rate policy of the term, one may see that the overvalued domestic currency of the term was also used as an additional tool to decrease the pressure on the inflation rate. As can be seen on Figure 7 in the period from April 2004 to December 2005 the real effective exchange rate was left to increase meaning that the CBRT did not intervene into the appreciation of domestic currency. Moreover the same trend continued in the period from May

2006 to January 2008. Theoretically, when the domestic currency is overvalued, the exports will decline because the price competitiveness of the domestic products in the foreign markets will decline. With the same logic, the imports will increase as the import prices of intermediary goods which will directly affect the prices of final goods. As a result, output declines and inflationist pressure will decrease. Therefore, one may expect a positive relationship between foreign exchange rates and the inflation rate. The correlation simple correlation coefficient between inflation rate and USD selling rate of the CBRT can be seen on Table 4. Although a deeper regression analysis of this relationship is needed, Table 4 shows a positive correlation between the USD selling rate and inflation rate, meaning that an increase in the inflation rates can be explained by the increase in the USD exchange rate.

Table 4 Inflation Rate and USD Selling Rate Correlation

Year	Inflation Rate	USD Selling Rate
2003	20	1.50
2004	12	1.43
2005	8	1.35
2006	5	1.44
2007	4	1.31
2008	4	1.30
2009	7,5	1.55
2010	6,5	1.51
Correlation Coefficient	**0.804**	

Source: CBRT

While leaving the exchange rate to float and intervening in cases of necessity, the CBRT continued to target price stability. In this period, the inflation rate was chosen as an anchor to the economy. Because of the reasons mentioned in Section 4.1, the CBRT acted gradually on this policy shift and to maintain price stability it first implemented implicit inflation targeting strategy. Within this period the CBRT played with the borrowing and lending rates to achieve its targets. Figure 7

shows the lending and borrowing interest rates implemented by the CBRT. The CBRT lending interest rate gradually fell to 13.25% and the borrowing rate fell to 16.25% in April 2006 from a 24% lending rate and 29% borrowing rate in February 2004 gradually in the implicit inflation targeting period but the targeted rates could not be achieved. The results of the implicit inflation targeting attempt can be seen in Table 2. Table 2 shows that the inflation rate was 9.3%, although the target was 12%. The inflation rate was 10.53% although the target was 8% in 2005 and the inflation rate was 9.65% although the target was 5% in 2006.
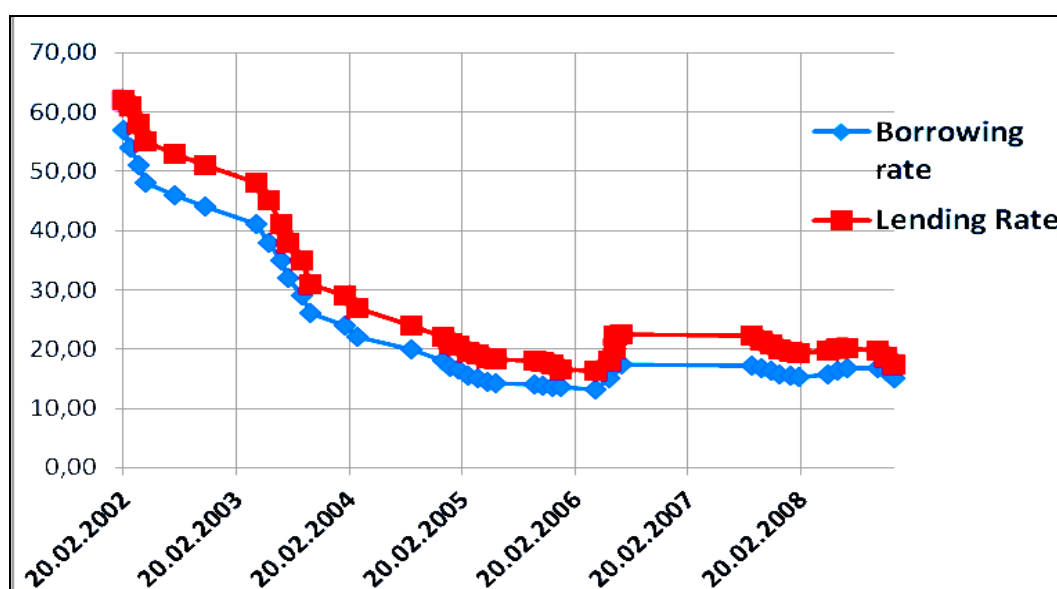
Figure 8 the Overnight Interest Rates of the CBRT
Source: CBRT

It's clear that the CBRT could not reach its targeted rates during the implicit inflation targeting period. Here one should notice that the inflation rate was 68% in 2001 and declined to 7.7 % in 2005. On the other hand, a skeptic would also argue that the slow–down in realized inflation rates may have been due to favorable international conditions and high capital inflows at the time into the country. Furthermore, overvalued exchange rate might have significantly contributed to this outcome.

The CBRT started to declare its point inflation targets after 2005. In 2006, The CBRT declared its inflation-targeting regime and targeted a point inflation rate, which had a base in the 2003 consumer price index. The CBRT announced its end-of-year inflation targets for 2006, 2007 and 2008 which were set as 5, 4 and 4 percent respectively (CBRT)[12]. Figure 8 shows the trend of overnight interest rates from 2006 to 2008. The lending and borrowing rates increased in 2006. One can see from Table 2 that again the adjustments in overnight interest rate bands did not work and point targets could not be achieved. The realized inflation rates were either below or above the point targets. Therefore it was clear that although the global economic conditions were supportive, the CBRT could not maintain its point targets.

After 2007, the main obstacle to reach the target inflation rate was seen as the sharp increase in petrol and commodity prices in the international markets. From that time on, Turkey experienced a series of shocks which stemmed from international conjuncture. Therefore, between the years of 2006 and 2008, the reason why the targets could not be achieved can be explained by global financial shocks, which caused capital outflows from developing countries, including Turkey (Yakupoğlu, 2010). If the global financial shocks were responsible for not achieving the targets, the gradual decline in the inflation rates in the period of 2002 to 2006 can be explained by the same external factors as well. To sum up, the inflation rate showed significant declines during the inflation targeting regime. However, many times the CBRT could not reach its announced targets.

One of the main arguments of inflation targeting regime proponents was that a low inflation rate would create an environment where the economy will perform better which would eventually lead to employment generation within the economy. As mentioned before, the global economic conditions lead to a high capital inflow to the country and the GDP growth was relatively high. However, this growth did not lead to employment in the period from 2002 to 2008 in Turkey.

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[12] See table 2 for the targeted and realized inflation rates.

Table 5 GDP Growth Rate, Public Sector Growth Rate, Private Sector Growth Rate and Unemployment Rate (2000 – 2012)

Years	Unemployment rate %	GDP Growth % change	Public Sector Growth % change	Private Sector Growth % change
2012	9,1	3,2	1,6	1,6
2011	9,8	8,5	18,3	22,8
2010	11,9	9,2	30,5	33,6
2009	14,0	-4,8	-19,0	-22,5
2008	11,0	0,7	-6,2	-9,0
2007	10,3	4,7	3,1	2,6
2006	10,2	6,9	13,3	15,0
2005	10,6	8,4	17,4	16,2
2004	10,8	9,4	28,4	36,1
2003	10,5	5,3	14,2	23,7
2002	10,3	6,2	14,7	16,9
2001	8,4	-5,7	-30,0	-32,9
2000	6,5	6,8	17,5	17,5

Source: Turkstat
The Data Available For 2012 Includes Only 9 months.

Table 5 shows that although there was a high level of GDP growth in Turkey, the unemployment rate continued to grow in the period from 2002 to 2008. For instance, in 2004 the Turkish economy grew 9.4% although the unemployment rate increased to 10.8% from 10.5%.

Some authors argue that, with the help of inflation targeting, price stability would have eventually led to employment and higher growth. As discussed previously, the argument was not materialized in Turkey. Epstein and Yeldan (2007) give a wonderful critique on this view;

> This orthodoxy is based on several false premises: first, that moderate rates of inflation have high costs; second, that in this low inflation environment, economies will naturally perform best, and in particular, will generate high levels of economic growth and employment generation; and third, that there are no viable alternatives to this "inflation-focused" monetary policy. In fact, moderate rates of inflation have very low or no costs; countries

53

where central banks have adopted formal or informal inflation targeting have not performed better in terms of economic growth or employment generation and even the impacts of these regimes on inflation itself is a matter of dispute. And there are viable alternatives to inflation targeting, historically, presently, and looking forward.

When we look precisely at the period from 2005 to 2008, the unemployment rate seemed to stay at the 10.3% level and the GDP growth increased at a decreasing rate compared to the period from 2002 to 2005. According to Yörükoğlu and Atasoy (2008), the fall in unemployment was partly due to the effect of the tax reductions implemented in certain sectors. Therefore, it is clear that the unemployment rate did not improve either in implicit or the explicit inflation targeting periods as the proponents of the inflation targeting argue.

Moreover, Figure 9 shows a GDP growth comparison of Turkey, Euro zone countries and upper middle income countries.
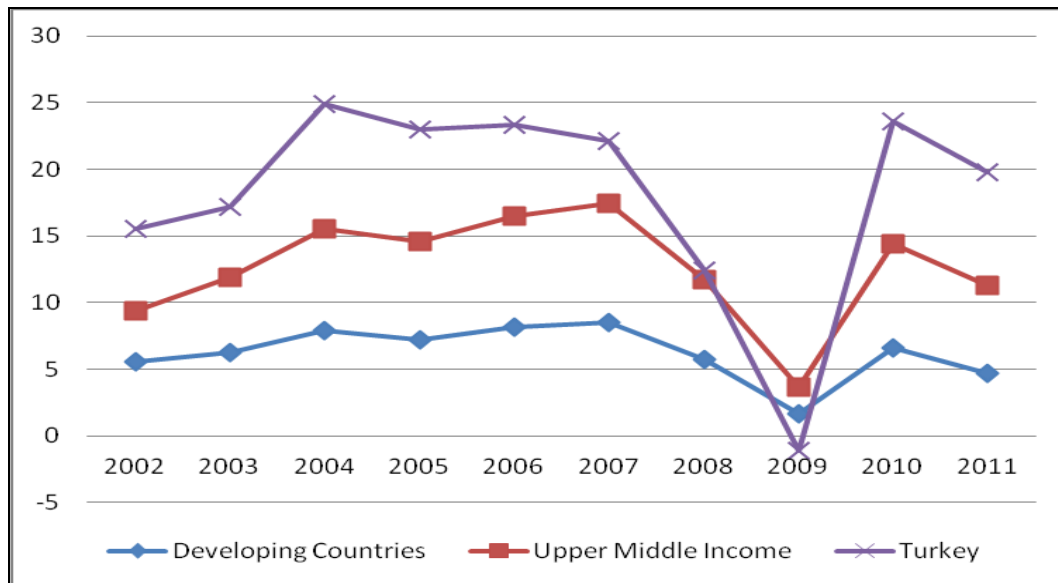
Figure 9 GDP Growth Comparison
Source: World Databank

Figure 9 shows that Turkish economic growth was in a declining trend from 2004 to 2008. By exploring the trend of the Turkish economic growth, one may argue

54

that the low inflation rate environment did not enable the economy to perform better compared to its counterparts.

In addition to the unemployment growth problem, the current account deficit also started to give off bad signals in 2007. Figure 10 shows the current account deficit from 2001 to 2008. We can see that the current account deficit increased sharply from 2 billion dollars to 38 billion dollars in 2007. The expanding liquidity in the international arena and the high real interest rates made Turkey more attractive for short-term investments. Moreover, the overvalued domestic currency, by increasing the imports and decreasing exports, widened the gap between current accounts.
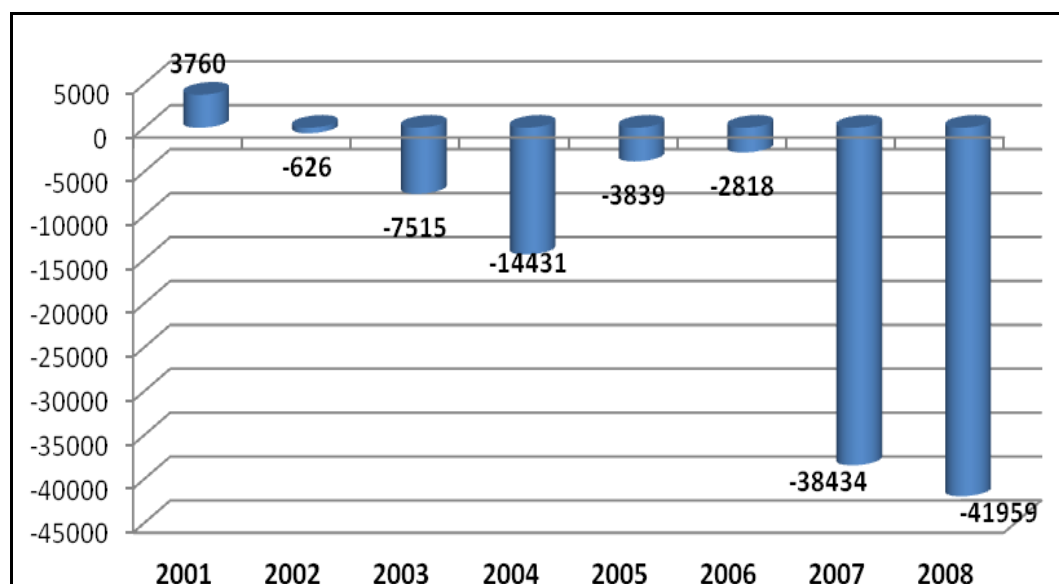
Figure 10 the Current Account Deficit (2001 – 2008)
Source: The Central Bank of Turkey The data is in Million US Dollars

High current account deficits may create a burden on the economy when it is combined with a dependency on external financing. The gross external debt profile shows the country's vulnerability to external shocks. In the case of a capital outflow, the markets squeeze with the need for liquidity as they become more dependent on external financing.

Table 6 Gross External Debt Profile (2002 – 2012)

Private	CBRT	Public	Long-Term	Private	CBRT	Public	Short-Term	Gross External Debt Stock (in Millions of US Dollars)	
29.169	20.348	63.618	113.135	13.854	1.655	915	16.424	129.559	2002
30.051	21.513	69.503	121.067	18.812	2.860	1.341	23.013	144.080	2003
36.833	18.123	73.828	128.784	27.078	3.287	1.840	32.205	160.989	2004
50.654	12.662	68.278	131.595	33.387	2.763	2.133	38.283	169.878	2005
82.129	13.115	69.837	165.081	38.310	2.563	1.750	42.623	207.704	2006
121.462	13.519	71.362	206.343	38.690	2.282	2.163	43.135	249.478	2007
140.023	12.192	75.037	227.253	47.982	1.874	3.248	53.104	280.357	2008
127.354	11.529	79.863	218.746	44.337	1.776	3.598	49.711	268.457	2009
116.488	10.251	84.651	211.390	72.257	1.576	4.290	78.123	289.513	2010
123.636	9.270	87.534	220.440	80132	1.409	7613	89.154	309.594	2011
129.358	8.419	90.228	228.005	78.284	1.275	10.683	90.242	318.247	2012

Source: Turkstat The 2012 Values Include First Three Months

Table 6 shows there was an increasing trend of gross external debt stock in the period from 2002 to 2008. Moreover, the short term portion of the overall debt stock was increasing. As the details which can be found in Table 6 show, the short term gross external debt increased to approximately 16k million U.S. dollars in 2008 whereas it was approximately 53k million U.S. dollars in 2002. The long term external debt also doubled in 2008 compared to 2002 records.

To sum up, the inflation rate had been in a gradual decline in the period from 2002 to 2008. However, there were some important deficiencies in the economy. Therefore in this section the inflation rate, unemployment rate, gross external debt profile, over-appreciation of domestic currency problem and the current account deficit was assessed. It was shown that the high GDP growth of the period did not lead to employment. The inflation targeting was not performed well and the point inflation targets could not be materialized. Moreover, the current account deficits and gross external debt stock was in an increasing trend, which were signs of the economy becoming vulnerable to external shocks. When the favorable economic conditions were reversed, the Turkish economy found itself in a severe economic contraction at the end of 2008.

4.5. THE EFFECTS OF THE GLOBAL FINANCIAL CRISIS OF 2008 – 09 IN TURKEY

As mentioned in previous sections, the Turkish economy experienced reactionary policy shifts several times. To have a better understanding about the current monetary policy of the CBRT, the global conjuncture and the US mortgage turmoil[13], which was the root cause of the global financial crisis of 2008-09,

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[13] About five years before the crisis, the US financial institutes had started to provide mortgage credits to people who had poor credibility, which increased the financial sector risks. The banks, to stir the economy, heavily relied on the construction sector and provided subprime mortgage credits to a risky group. Moreover, banks tried to increase their crediting volumes and started to sell real estate bonds on these risky securities, which is called securitization. The financial difficulties of these risky investors resulted in a shrinkage of credit volumes and a decrease in housing prices. The low prices mismatched with the nominal values of the real estate bonds, and the uncertainty cautions made it difficult to use the interbank lending channel for the banks, which started to face with a liquidity squeeze (Susam and Bakkal, 2008). Another

should be assessed. Therefore, this section was arranged to elaborate on the severe effects of the Global Financial Crisis of 2008 on Turkey and the precautionary policies to the crisis implemented by the CBRT.

The Turkish economy was caught up by the global financial crisis in an economic environment where the current account deficit was widening, the gross external debt was increasing significantly and the high level of unemployment rate was still a matter of concern. In section 4.3, the macroeconomic condition of the Turkish economy in the period from 2002 to 2008 was described. To summarize, the Turkish economy had reached a stable environment after the 2001 crisis with the help of tight monetary and fiscal policies and the financial expansion in the global environment which caused capital inflows into Turkey. The expanding liquidity in the international arena and the high real interest rates made Turkey more attractive for short-term investments. As a result, the current account deficit widened and the Turkish economy became more vulnerable to external shocks. In addition, the high level of GDP growth in the period from 2002 to 2008 was not translated into high savings and low unemployment rates. In other words, although Turkey had reached high growth rates, the savings and unemployment rates showed inconcertation (Rodrik, 2009). Moreover the bells had started to toll for the gross external debt profile of Turkey. Because of the reasons explained in section 4.3, the increase in short term gross external debt made Turkey more dependent on external financing. Turkey faced the global financial crisis in these economic conditions.

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important reason behind the US mortgage turmoil was the incompetence of rating institutes. The rating institutes, faced with a conflict of interest, could not operate objectively because they were financed by the banks and other financial institutes (Alantar, nd).

The turmoil took shape and became a crisis in the US economy after the confiscation of Freddie Mac and Fannie Mae and the declaration of insolvency of Lehman Brothers, which was a very big investment bank. Moreover, to rescue the insurance corporation AIG, the necessary liquidity had to be assured by the FED. As the US housing-backed securities were 89.2 percent in 2007, the turmoil in the US mortgage system caused a domino effect on global financial markets as well (Demir, 2008:8). The crisis spilled over to the European economies on October 15 of 2008 with the collapse of some European banks. According to IMF records, on 2008 August the overall loss of global financial institutions was approximately around 1.5 trillion Dollars (IMF, 2008).

Open economies have various vulnerabilities regarding developments in world economies. Therefore, these economies should not only be prepared for the domestic shocks but also be ready for external shocks (Rodrik, 2009). Unfortunately, Turkey was not well prepared for the global financial crisis and it affected domestic markets with a contraction in external demand, consumption, and lending activities of banks. The global financial crisis mainly influenced the Turkish economy through trade channels, credit channels and expectations channels. In developing countries including Turkey, the financial integration is less deep compared to their developed counterparts. Moreover the financial derivatives were not as widely in use as in developed countries. As a result, although the root cause of the crisis was the turmoil in financial markets, the finance channel was not significantly effective in Turkey.

In this section, the channels by which the global financial crisis affected Turkey will be elaborated. To assess the cumulative effects of the trade channels, the credit channels and the expectations channels on economic activities during the global financial crisis in Turkey, the unemployment rate, GDP growth rate, capacity utilization rate, industrial production index, consumer confidence index and the current account balances will be used as indicators.

The most important channel through which the global financial crisis influenced Turkey was the trade channel. As mentioned above, the global financial crisis first hit the Turkish export markets leading to a huge contraction in external demand. The contraction in external demand caused exports to fall. As the exporters could not find demand for their products, they reduced their economic activities. There was a sharp fall in the value of Turkish exports from October 2008 onwards in spite of the depreciation of the domestic currency. As mentioned in the previous chapters, the Turkish export sector is highly dependent on imports of intermediate goods. As the export level fell drastically due to the contraction in external demand, the imports level fell drastically as well. As a result, the current account deficit decreased in the fourth quarter of 2008. The decline in foreign trade and

domestic economic activity in total caused prices to decrease as well. Uygur (2010) argues that the reason for the sharp decline in the exports during the 2009 period was the sharp fall of EU demand for Turkish goods. One important note that should be mentioned here is that the customer portfolios[14] of Turkish exporters changed during the crisis of 2008-09. As can be seen from Table 7, although the customer portfolio of the Turkish exporters changed in search for high profits, both the export and import volume decreased in 2009.

Table 7 Total Exported and Imported Goods
(2002 – 2012)

Years	External Trade (in Million $)			
	Total Exports	% Change	Total Imports	% Change
2002	36.059	15,1	51.554	24,5
2003	47.253	31,0	69.340	34,5
2004	63.167	33,7	97.540	40,7
2005	73.476	16,3	116.774	19,7
2006	85.535	16,4	139.576	19,5
2007	107.272	25,4	170.063	21,8
2008	132.027	23,1	201.964	18,8
2009	102.143	-22,6	140.928	-30,2
2010	113.883	11,5	185.544	31,7
2011	134.907	18,5	240.842	29,8
2012 (2)	74.373	13,4	117.163	-2,1

Source: Republic of Turkey Ministry of Economy
The data for 2012 Includes Exports and Imports till June of 2012

The second channel through which the crisis affected the markets was the credit channel. To evaluate the mechanism, the effects of the crisis through credit channel were divided in to two parts, namely the domestic credit channel and the foreign credit channel.

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[14]For details see Uygur (2010).

As mentioned in previous sections, the gross external debt was in an increasing trend, meaning that the markets were heavily dependent on external financing. Therefore, as foreign creditors contracted their lending activities, the markets faced a sudden liquidity squeeze. Here one should note that the Turkish foreign credit channel is heavily under the dominance of the banking sector in Turkey. Therefore, the contraction in the foreign crediting mechanism directly affected the domestic crediting mechanism. In other words, the banking sector could not find the necessary foreign financing to continue their lending activities in the domestic market. As a result, the producers, whose supply did not match with demand, could not find the necessary financing to continue production and reduced their economic activities.

The banking sector was transformed following the Banking Sector Crisis of 2001. Being under the rigid regulations of BRSA, the banking sector first reacted to the crisis with a contraction in their lending activities. In other words, the contraction in foreign crediting activities influenced the domestic credit channel's desire to stay at safe levels of liquidity; domestic banks reduced their lending activities as they became suspicious about the future. These in return reduced the economic activity and increased unemployment in the real sector (Yörükoğlu and Atasoy, 2010). Due to this significant reduction in lending activities, the real sector faced difficult times.

The last effective channel is the expectations channel through which the global financial crisis affected the Turkish markets. Due to the contraction in trade and credit options, the expectations of both consumers and producers worsened. Both private consumption and household consumption dropped which heavily affected the real sector and caused GDP to decrease significantly.

As described above, the global financial crisis influenced the Turkish economy through the cumulative effects of trade channels, credit channels and the expectations channel. The severe affects of the crisis will be elaborated in the

following section using the consumer confidence index, capacity utilization rate, industrial production index, the GDP growth rate and the unemployment rate.

As can be seen from Figure 11, the consumer confidence index had a declining trend, meaning that the negative conditions of the economy influenced consumer perceptions about the future. Moreover, Table 7 evidents that the global financial crisis affected consumption in the economy through the expectations channel.
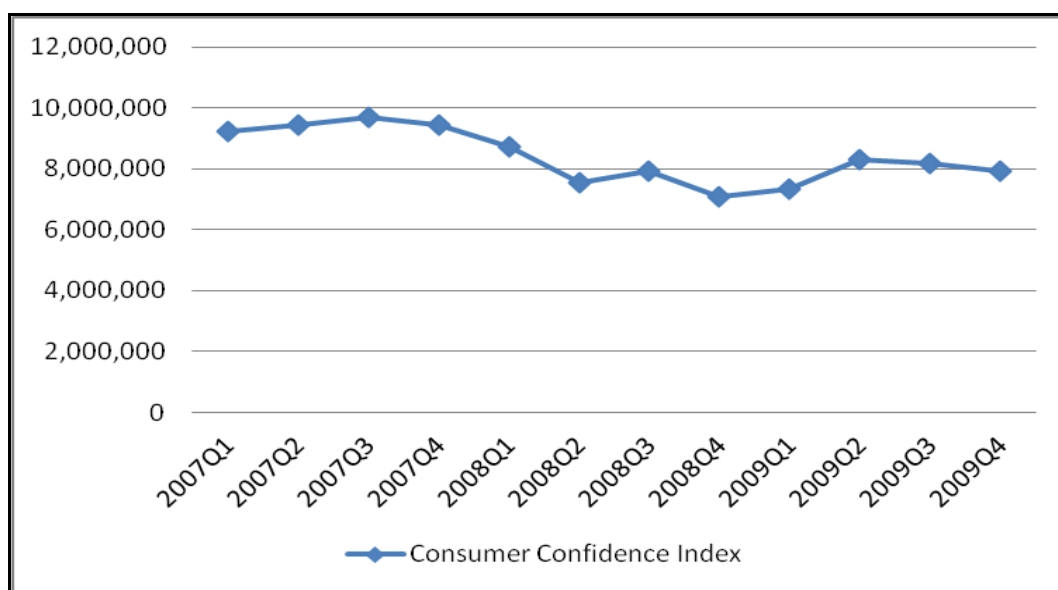
Figure 11 Consumer Confidence Index (2007 – 2012)
Source: Turk Stat (Consumer Confidence Index and Indices of Consumer Tendency Survey Questions), 2012

Due to the contraction in lending activities, the real sector could not find the necessary financing to stabilize their production levels and therefore, unemployment rose and GDP growth fell into minus percentage points.

Table 8 Capacity Utilization Rate, Industrial Production Index
(2007 - 2012)

Years	Capacity Utilization Rate	Industrial Production Index	
		Total Industry	Manufacturing Goods
2007	80,6	114,9	114,4
2008	77,6	114,2	112,6
2009Q1	60,4	89,5	85,5
2009Q2	63,7	102,9	100,8
2009Q3	68,3	105,8	101,6
2009Q4	68,5	113,7	112,0
2010	67,9	116,5	114,4
2011	73,1	126.87	124,9
2012Q1	73,6	123,4	119,9
2012Q2	74,7	130,9	129,8
2012Q3	74,5	132,9	128,0

Source: Turk Stat (database), 2012
(2005=100)

Table 8 shows the industrial capacity utilization rate and industrial production index for total industry and manufacturing goods. The capacity utilization rate fell drastically in the first quarter of 2009.

The industrial production index, which had a base in 2005 prices, also indicates that the production level of the manufacturing goods industry and the total industry level significantly dropped. Therefore, it is clear that the real sector contracted significantly in the first quarter of 2009 and could not catch up to its pre-crisis level of capacity utilization rate even in 2012.

As a result of the contraction in trade and consumption, the moderate level of GDP growth of the pre-crisis period reversed and became negative in a very short period of time. The GDP growth rate, which was already in a declining trend in the aftermath of 2007, fell to 0.7% in 2008. Table 8 indicates that in the first quarter of 2009 the quarterly GDP decline was 14.3% and the unemployment rate reached 16%, the highest among other developing countries.

The private sector growth rate significantly dropped to minus percentage levels and one of the fundamental reasons of this contraction was the decline in consumption. To better assess the contraction of the GDP growth rate records, evaluating the composition of GDP is valuable. Figure 11 shows that both private sector consumption and household consumption were decreasing in the aftermath of the first quarter of 2008.

The unemployment rate, which was still a matter of concern in the pre-crisis period, started to rise at an increasing rate in 2009. As mentioned above, in the first quarter of 2009, the unemployment rate reached 16%, the highest among other developing countries. The annual unemployment rate records can be seen on Table 5.

To sum up, the global financial crisis affected the Turkish economy through three channels; trade channels, credit channels and the expectations channel. The contraction in external trade caused exports to decline. The decline in external crediting activities caused the domestic lending activities to decrease. The production and capacity utilization levels fell drastically in a very short time and resulted in the unemployment rate to rise. The expectations worsened in this economic environment and consumption also decreased. Therefore, economic activities slowed down and the high level of GDP growth of the pre-crisis period fell to minus percentage points in a very short time. In the next section, the precautionary measures taken by the CBRT in response to the global financial crisis will be elaborated.
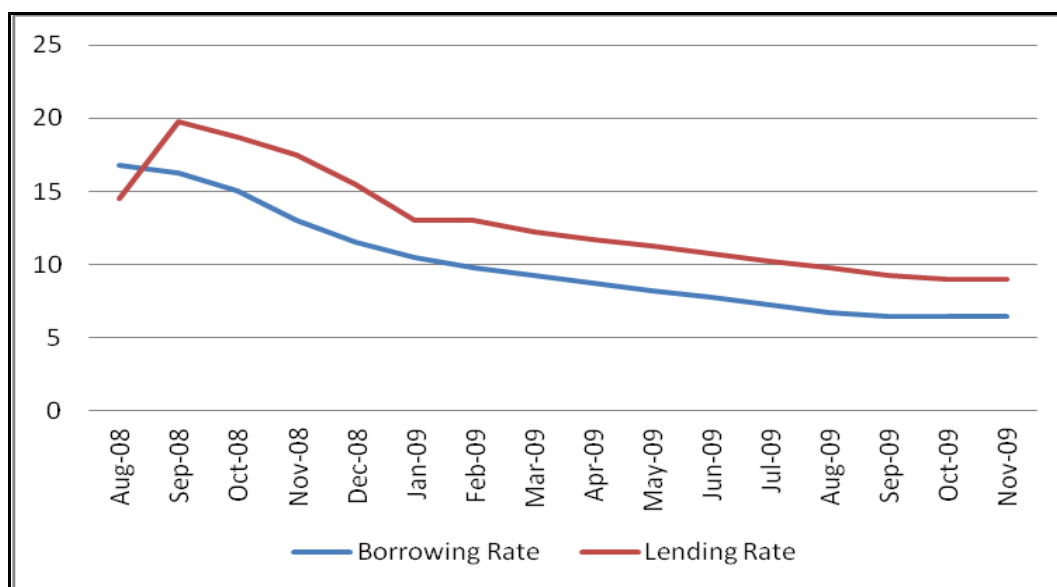
4.6. THE PRECAUTIONARY MEASURES TAKEN BY THE CBRT AND BRSA IN RESPONSE TO THE CRISIS

This section will analyze the measures taken by the Central Bank of the Republic of Turkey (CBRT) during the global financial crisis of 2009. As detailed in section

4.3, the Global Financial Crisis hit the Turkish markets while the CBRT was implementing inflation targeting policy. One basic mistake of the CBRT was its overemphasis on inflation targeting while the crisis was already shaking global economies. The steep rise in petroleum prices from July of 2008 onward affected food prices and inflation became a matter of global concern. The fear of high inflation and concerns about declining growth rates caused a dilemma for the policy decisions of central banks. In such a situation, the necessary action to control the inflation rate is to increase interest rates. On the other hand, to prevent the sharp fall of growth rates and a halt in economic activities it was necessary to decrease interest rates (Karabıçak, 2010). One can see that faced with such a dilemma, the CBRT rather than being concerned about a decline in economic activity, continued its inflation targeting path. During the summer of 2008 the global crisis had already hit the Turkish markets and industrial production started to fall while the CBRT was still leaving interest rates to rise (Uygur, 2010).

As mentioned in previous chapters, the CBRT was implementing a floating exchange rate regime and intervening in the FX markets in cases of necessity. At the same time, to have high reserves necessary to be ready against a speculative attack, the CBRT was continuously increasing its FX reserves through FX purchasing auctions in the pre-crisis period. The Global Financial Crisis hit the Turkish markets with a huge contraction in external demand, which led exports to fall. The first action of the CBRT to combat the crisis was to decrease the foreign exchange purchasing auction limits to at most 45 Million US Dollars on the 10th of March 2008. The CBRT, as the markets fell in an FX liquidity squeeze, decreased the level of reserve collecting auctions. As the uncertainties continued for a long time in the foreign exchange and effective markets, the CBRT declared that it would continue its intermediary actions with the FX and effective markets until the uncertainties in international markets gained clearance on the 09th of October 2008 and stopped FX buying auctions on the 09th of 2008.

As the FX liquidity squeeze of the markets continued, the CBRT started FX selling auctions and 100 Million US Dollars was sold on the 23th of October 2008. As was mentioned at the beginning of this section, industrial production had started to fall during the summer of 2008 but the CBRT was still raising interest rates (Uygur, 2010). On the 31th of October 2008, the CBRT decreased the lending rates by 50 basis points. This step was followed by a reduction of 50 basis points in the borrowing rate on the 19th of November 2008. By decreasing the interest rates the CBRT was trying to decrease the liquidity squeeze of the real sector, whose production levels were falling. On the 21th of November another calibration on credit maturities took place. The CBRT increased the credit maturities to one month from one week. Meanwhile the US Dollar lending rate decreased to 7% and the Euro lending rate decreased to 9%. As mentioned in section 4.4, the crisis was influencing the markets through both foreign and domestic credit channels. The CBRT was trying to ease the crediting options by extending credit maturities and decreasing the lending rates of FX credits. At the same time the CBRT increased the export rediscount credit limit and the rules and principles applicable to the export rediscount loan limit were rearranged in order to facilitate the use of these loans (Yörükoğlu and Atasoy, 2010). As decreasing the lending and borrowing rates were not enough and the contraction in the economy continued at full speed, the CBRT used a required reserve ratio tool on the 5th of December 2008. The FX rate required reserve ratio was decreased to 9% and interest payments on FX required reserves was stopped.

Figure 12 Borrowing and Lending Rates (August 2008- November 2009)
Source: CBRT, 2012

As can be seen from Figure 12, since December of 2008, the CBRT acted in a more aggressive manner in its precautionary measures taken in response to the crisis. The short term interest rates were decreased by 125 basis points on the 18th of December and decreased again by 200 basis points on the 26th of January 2009. In addition to the aggressive reductions on short term interest rates, the CBRT was injecting liquidity to the financial markets by regulations[15] on enhancing the credit maturities on the 29th of January 2009. The reductions in interest rates and injections of liquidity to the markets via selling auctions and enhancements on credit maturities continued. On the 19th of February, short term interest rates were decreased by 150 basis points. This was followed by reductions of 75 basis points

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[15] The Central Bank Regulation on the Liquidity Support Facility governing the principles and procedures for the utilization of credit facilities as stipulated in subparagraph (c) of paragraph (I) of Article 40 of the Central Bank Law was published. Accordingly, the loans will be available: As advance payments, with one-month maturities for a maximum one-year period; At the lending rate set for the intraday transactions carried out at the Interbank Money Market; bearing in mind the principle that interest rates applicable to credits of this nature are higher than those applicable to normal central bank open market transactions; Against collateral accepted in the interbank money market; being limited to an amount equal to twice the size of the equity capital of the applying bank (CBRT, 2009).

on the 16th of April, and 50 basis points on the 14th of May, respectively. Moreover, the CBRT monitored the liquidity in the markets by activating new open market operation tools. For instance, on the 19th of June, up to 3 months repo bids started to be used actively in addition to the 1 week repo bids. The last intervention of the CBRT was another reduction on the required reserve ratios by 5 percent on the 16th of October 2009. By decreasing the interest rates, the CBRT tried to increase the money supply and decrease the liquidity squeeze in the markets. The required reserve ratio on the basis of which the commercial banks lend credits to the market was decreased, which was another move to decrease the liquidity squeeze in the markets.

The precautionary measures taken by the CBRT were supported by the BRSA. The banking sector caught up to the global financial crisis in a relatively stronger position compared to the crisis of 2001, as the sector was transformed by the regulations of BRSA. BRSA restricted the distribution of banking sector profits and decided to allow a onetime revaluation of stocks and shares to banks in November 2008. BRSA restricted the distribution of profits to maintain the commercial banks in order to have strong equity positions in the crisis environment (Erdemir, 2009). Moreover, the regulation on credits, other receivables and the required reserves on these credits and other receivables was renewed by the BRSA. Therefore, the banks were allowed to revalue their stocks and shares and calibrate their risk positions (Erdemir, 2009).

In addition, in June 2008, the plans on structural harmonization to Basel II[16] were postponed (Erdemir, 2009). The regulations of Basel II included adopting several financial instruments such as leverages and hedging funds, and the BRSA was suspicious about allowing such instruments in an economic environment when the global financial crisis was hitting the markets.

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[16] After the developments in financial sectors and the diversification of financial instruments, the current banking sector standard which is called BASEL I had become insufficient. Therefore, a new international standard of banking for International settlements in the banking sector which was called BASEL II was developed.

To sum up, after misreading the environment, the CBRT took various reflexive measures to decrease the effects of the crisis on Turkey. First of all, the CBRT cut interest rates and extended the maturities of foreign exchange deposits to prevent a foreign exchange squeeze in the financial market. The reserve requirement ratio was lowered both for domestic currency liabilities and for foreign exchange liabilities. With the help of the measures explained above, the CBRT provided liquidity to the banking system. The CBRT increased the export rediscount credit limit and the rules and principles applicable to the export rediscount loan limit were rearranged to ease the foreign trade in the crisis environment. The short-term interest rate was decreased by approximately 650 basis points. The required reserve ratio was decreased from 11% to 5% overall. The CBRT supplied foreign exchange to the market at various times and eased crediting options.

Turkey, which is described as an emerging economy, has been challenged by various crises due to both internal and external shocks. When analyzing the picture of a country one should keep in mind that the measures taken during crises may have different effects in emerging and advanced economies. During the global financial crisis, many of the emerging economy central banks, including Turkey, applied unconventional measure[17] to provide liquidity to both foreign exchange and domestic financial markets.

For instance, in Turkey, the central bank began daily dollar selling auctions in October 2008. However, Ishi, Stone and Yehoue (2009) argue that these unconventional measures did not address the fundamental macroeconomic challenges that emerging economies were facing. Emerging economies mostly relied on direct instruments such as easing reserve requirements. On the other hand, advanced economies, which reached zero lower bound interest rates, used

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[17] The unconventional measures are described as the measures taken other than the actions of central banks in more normal times and can be exemplified as using direct instruments in money markets, systemic domestic liquidity arrangements, foreign exchange liquidity injections, and credit and quantitative easing policies (Ishi, Stone, Yehoue, 2009).

systemic liquidity easing measures and credit and quantitative easing measures. Central banks from both groups widely used the foreign exchange easing measures, as Turkey did in 2008 and 2009. The difference between the measures taken by both groups was explained by the degrees of financial and external vulnerabilities and policy credibility (Ishi, Stone and Yehoue, 2009).

When we analyze Turkey in particular during the crisis, we see that thanks to the regulations of the banking sector after the 2001 crisis, the banking sector remained relatively strong. However, the overall picture shows us that Turkey was severely affected by the global crisis, as many macroeconomic indicators imply.

As detailed in section 3.3, the GDP growth did not lead to employment, the gross external debt profile and current account deficit worsened and the inflation targets of the CBRT could not be achieved. Capital started to outflow from the Turkish markets which then became very dependent on the external financing. Boratav (2008) states that, the squeeze in international financial sectors and the liquidity shortages of foreign banks caused a decline in new crediting options. This in return harmed the balance sheets of the private sector because of the capital outflows. The result of the disorder in the balance sheets of the private sector, which was created in the pre-crisis period, was evidenced in the first quarter of 2009.

As mentioned in section 4.4, in the first quarter of 2009 the quarterly GDP decline was 14.3% and the unemployment rate reached 16%, the highest among other developing countries. As Uygur (2010) also states, Turkey had a more severe crisis than other countries although they have faced excessive exposures in the banking sector and in foreign exchange markets.

At the beginning of this section, we argued that the CBRT overemphasized its inflation targeting path, while the global financial crisis had already hit the markets and the production level had started to fall. Akyazı and Ekinci (2009)

describe the mistakes of the CBRT by stating that the March 31 report of the CBRT seems to drive a car correctly in the wrong way. The CBRT declared in its March 31 Report that the inflation target for 2008 was 4%. On the other hand, due to the global conjuncture, the CBRT should have given priority to provide flexibility to markets rather than to achieving that target. Therefore, one can argue that the timing of the CBRT was late in its reaction to the crisis.

At the beginning of this thesis, it was stated that only employing monetary policy may not be sufficient in reaching certain targets. The fiscal policy also should be coordinated with the monetary policy. In this sense, one may note that the CBRT was not alone while implementing precautionary measures against the crisis. The government also used various measures to decrease the effects of the crisis. The value added tax and the private consumption tax was reduced in some sectors. The government divided the geographic areas into four and subvention packages were given to producers in different sectors (Karakurt, 2010). As it is not in the scope of this thesis, the effectiveness and the results of these fiscal policy measures will not be analyzed in detail. However, it should be noted that the fiscal policy was used in parallel with the monetary policy to pep up the economy.

4.7. WHAT IS THE EXIT STRATEGY OF THE CBRT FROM THE GLOBAL FINANCIAL CRISIS?

In most countries, exit strategies were introduced in order to repair the damages of the Global Financial Crisis of 2008-9. The CBRT, in its April 14 2010 report, declared its exit strategy was twofold, namely, a foreign exchange rate strategy and a domestic currency strategy. The base of the exit strategy report was that the economy should recover from the crisis and to return to pre-crisis levels.

As mentioned in detail in section 4.5, during the crisis the CBRT, despite the insufficiency of the volume and timing of liquidity injections into the financial markets, took several measures to give some relief to the squeezed actors within

the market. Both liquidity injections and emissions when applied unnecessarily may harm the economy; therefore the exit strategy was seen as an important issue. In its April 14 report, the CBRT declared that it would remove the precautions on foreign exchange and domestic currency markets gradually. First, the direct measures, which were taken during crisis management, would be removed. Then, as applied in other world economies, the exit strategy was planned to be implemented step by step, the priority being to maintain price stability. However, the CBRT decided not to apply the program[18] at all. The reasons behind this reversal were explained as follows.

In the last quarter of 2010, the current account deficit deteriorated due to the over-expansion of credits. Moreover, there was an imbalance between the domestic and the foreign demands which led to an overvalued domestic currency and as a result increased imports. The current account deficit accompanying the accelerating credit expansion conjuncture was regarded as unsustainable.

Therefore, the CBRT dismissed the exit strategy of the April 14 2010 report, continued with a new financial stability program, and continued to use unconventional measures (macroprudential tools). For example; after deciding not to apply the exit strategy framework, to increase the effectiveness of using the required reserve ratios, the CBRT stopped paying interest on reserves.

As a result, it can be said that the CBRT, rather than applying a "going back to normal" framework, increased the usage of unconventional measures. In addition to this, the one-week repo rates were accepted as the political rate and an

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[18] The Foreign exchange rate exit strategy was planned as follows; The foreign exchange auctions, which were implemented in the aim of increasing the reserves before the crisis, and were stopped during the crisis, started again in August 2009. The foreign exchange credit easing policies for the banking sector was planned to be removed gradually to achieve before crisis levels. The foreign exchange reserve requirements was planned to be increased gradually. The interest rates on the foreign exchange repository lending were planned to be increased according to the global junctures and the intermediary function of the CBRT was planned to be stopped. The limits and conditions of rediscount credits that enabled exports via Eximbank was also planned to be revised in case of no need (CBRT, 2010). The domestic currency exit strategy was planned as follows: the CBRT planned to withdraw the temporary liquidity measures for the domestic currency step by step.

overnight borrowing and lending rates corridor system was preserved with the aim of controlling the market rates more effectively (Başçı and Kara, 2011). The unconventional measures that the CBRT used as additional tools to control interest rates (macro-prudential tools) will be explained in Chapter 5 in detail.

To conclude, in Chapter 4 first the Turkish experience with the inflation targeting regime was elaborated. The theory of an inflation targeting regime was explained in section 4.1. It was stated that according to the proponents of inflation targeting, there are four important conditions to be satisfied. In order to be successful, an inflation targeter should be transparent, credible, accountable and committed to its target. Section 4.2 explained the inflation targeting strategy of the CBRT in particular. The gradual shift to an inflation targeting regime from an exchange rate targeting was described. It was explained that the CBRT first implemented implicit inflation targeting in the period from 2002 to 2005 and implemented explicit inflation targeting in the period from 2005 to 2008. Section 3.3 focused on the transition to a floating exchange rate regime after 2001 as an important part of the monetary policy of the period from 2002 to 2008. It was argued that the floating exchange rate regime was a prerequisite for the inflation targeting strategy of the CBRT because otherwise the inflation targets would have been dependent on the movements of foreign exchange rates. However, the CBRT seemed to allow exchange rate to appreciate and used this over-appreciation as an additional tool to reach its inflation targets as the over-appreciation decreased the prices of intermediary goods within the market. As a result, although the over-appreciated domestic currency decreased the upwards pressure on inflation rates, it also caused the current account deficit to widen. Section 4.3 focused on a short assessment of the implementation of inflation targeting policies by the CBRT and its effectiveness. It was argued that the inflation targeting period had some merits. However, there were some important deficiencies in the economy as well. The jobless growth problem, failure to reach point inflation targets, over-appreciation of domestic currency problem, increasing current account deficits, and gross external debts were counted as the important problems of the period from 2002 to

2008. We argued that these problems caused the economy to become much more vulnerable to external shocks and made the country more dependent on external financing.

As the Turkish economy caught up with the global financial crisis in the middle of inflation targeting program, section 4.4 investigated the effects of the global financial crisis on the Turkish economy and section 4.5 summarized the precautionary measures taken by the CBRT and the BRSA. The unconventional measures taken by the CBRT to ease the liquidity squeeze in the markets and the protectionist interventions of the BRSA in the commercial bank balance sheets were elaborated. It was argued that although the aggressive measures against the effects of the crisis were the right measures to be taken, the timing of the CBRT's response to the contraction in the economy was late. In section 4.6, a short summary of the exit strategy from the crisis, which was not implemented, took place. It was explained that the CBRT planned "a going back to normal" strategy but did not implement it. After the global financial crisis, the CBRT made a reactionary shift in its strategy and implemented a new monetary policy program. This new monetary policy mix will be evaluated in the next chapter.

CHAPTER 5

THE NEW MONETARY POLICY OF THE CBRT

As mentioned in previous chapters, after the closed economy years, the CBRT tried monetary targeting in the 1990s which then collapsed in the 1994 crisis, tried exchange rate targeting which collapsed in the 2001 Banking Crisis and then chose the inflation rate as anchor to the economy and implemented an inflation targeting program in the period from 2002 to 2009. The global financial crisis gave pause to the inflation targeting regime which had some important deficiencies. The CBRT used unconventional measures to decrease the severe affects of the Global Financial Crisis, which was described in detail in section 4.3. The exit strategy from the crisis was first declared but not materialized and the CBRT decided to continue with the unconventional measures and became more prudent about asset price bubbles. After the Global Financial Crisis in Turkey, especially in 2010, a significant breakdown between the domestic and external demand and a huge international capital inflow were experienced with the contribution of expansionary monetary policies implemented by the central banks of developed countries (Kara, 2012). As it was put in the IMF report;

> Import intensive, credit-dependent domestic demand is being supported by low-cost foreign financing and an overvalued real exchange rate, and the current account deficit widened sharply, together weakening Turkey's resilience in some areas (IMF, 2012).

After 2010, although Turkey had consecutive positive growth rates with the help of global economic conditions, observing the potential fragility in the economy,

the CBRT has fundamentally changed its monetary policy structure. Therefore, this chapter was arranged to describe the new structure of the monetary policy framework of the CBRT.

In the new structure of monetary policy, financial stability was put on the agenda nearby price stability since November 2010. Moreover, from that time on the CBRT, rather than announcing its point targets, has started to announce a band target for the inflation rate which is also evidence that the CBRT has changed its monetary policy structure. In this new structure, the main target of the CBRT is to maintain financial stability which is different from price stability both in terms of the tools that are being actively used and the interest rates that should be set.

In its Financial Stability Report the CBRT described financial stability as the use of more equity capital, more prudent borrowing and longer maturities for borrowing, a strong foreign exchange position and more effective risk management (CBRT, 2010). To achieve the targets of the financial stability structure, the required reserve ratio, one week repo rates and an interest rate corridor[19] was instituted to be used as complementary tools beside the policy rate (CBRT, 2010).

Although the CBRT does not explicitly mention about the importance of current account balance, high current account deficit combined with a high external borrowing is also believed to be detrimental for financial stability. As well known, the use of an over-valued domestic currency to decrease the upwards pressure on inflation rate imbalanced the current accounts by increasing the purchasing power of domestic currency. Therefore we argue that the CBRT, with the experience of the inflation targeting program, tries to avert the detrimental effects of the high current account deficit to the economy by this new policy mix as well. As mentioned repeatedly in previous chapters, one of the fundamental structural

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[19] The interest rate corridor system is explained in subsection 4.1

problems of high GDP growth in the Turkish economy was the high credit expansion. It is believed that if the credit expansion has a bad composition, vulnerability to external shocks rises. In other words, if the short term external debt is in an increasing trend, combined with a widening current account deficit, high GDP growth will not be sustainable. Kapur and Mohan (2009) point out this problem as follows; "Reversals of capital flows to the Emerging markets are often quick, as again shown by the current financial crisis, necessitating a painful adjustment in bank credit, collapse of asset prices compression of domestic demand and output losses". Consequently, to solve the problems that may have created an unsustainable growth, the CBRT added additional tools to its portfolio. The credit expansion of Turkey was believed to be a fundamental problem for sustainability of growth. It was believed that the required reserve ratio would be a stronger and a more direct tool to calibrate the credit expansion than using policy rates alone. Therefore, using the required reserve ratio actively to calibrate the credit expansion continued in the new monetary policy structure. Moreover, it was believed that using the interest rate corridor would be an effective tool to manage the expectations channel and therefore to fix the proportion of the credits. Thus, the interest rate corridor has also been added to the instrument portfolio of the CBRT in the new monetary policy framework.

To better assess the reactionary policy shift of the CBRT, the economic conditions of the times should be evaluated. The Turkish economy seemed to have had a rapid domestic-driven recovery after the global financial crisis as the GDP growth rate was 9.2% in 2010. On the other hand, the current account deficit was widening because of the weak export performance of Turkey. Moreover, the credit growth was in an increasing trend and strong speculative capital was inflowing into the country which was creating appreciation pressure on the domestic currency. The CBRT, as it became prudent on asset bubbles, began to target a decrease in the short term cash inflow and to slow down the credit expansion (Özatay, 2011). The CBRT in its first inflation report of 2011 described the reasons of its policy choices as follows; as the developed countries increased their

money supply and decreased their interest rates to very low levels, the short term cash inflows to developing countries, including Turkey, had increased. This in return imbalanced the current account and along with it the private banks increased their crediting volumes. The credit expansion triggered the importation of consumption goods and intermediary goods which again imbalanced the current account (CBRT, 2011). The theory behind the new structure assumed that there is a negative relationship between financial stability and credit expansion. As mentioned at the beginning of this chapter, financial stability is described as the use of more equity capital, more prudent borrowing and longer maturities for borrowing, a strong foreign exchange position and more effective risk management (CBRT, 2011). On the other hand, credit expansion imbalances current accounts and becomes problematic if the maturities of deposits and credits do not match. The maturity mismatch will eventually cause liquidity squeezes in the financial markets and therefore it was believed that the central bank should control credit expansion.

Moreover, the new structure assumed that there is a link between asset bubbles and credit expansion and therefore assumed that if the rate of credit expansion can be controlled by using monetary policy, a balloon on asset prices can be prevented as well. The mechanism behind this assumption was that if the credit expansion slows down, the number of risky credits of the sector will decrease as well. To monitor the asset prices the CBRT started to use new indexes. For instance, on the 9th of March, the CBRT announced its new house price index on its official web site. Therefore, the CBRT intends to monitor asset prices and take actions accordingly, although its effectiveness is controversial.

As mentioned at the beginning of this chapter, the CBRT put financial stability beside price stability. Therefore the CBRT, while aiming to decrease the credit expansion, at the same time, targets a certain level of inflation rate.
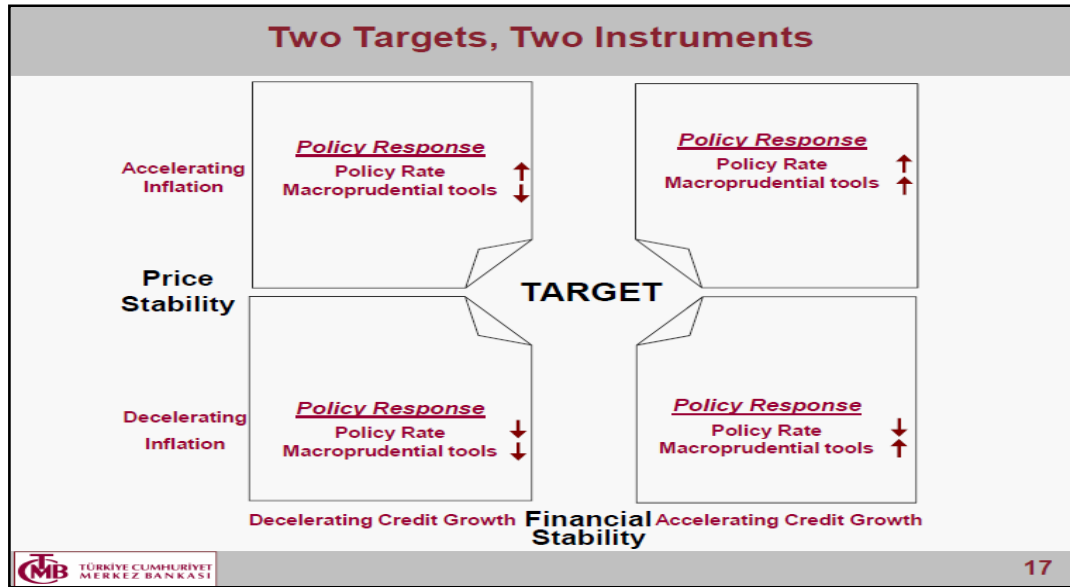
Figure 13 Two Targets and Two Instruments
Source: CBRT

As can be seen in Figure 13, there are four scenarios on which the new policy mix will be positioned. The policy mix includes a policy rate as usual and macroprudential tools which include reserve requirements, liquidity management, capital adequacy ratios, liquidity adequacy ratios, taxes and primary expenditures of government.

- If the inflation rate is accelerating and credit growth is decelerating then the policy rate will be increased and the use of macroprudential tools will be slowed down.

- If both the inflation rate and credit growth are decelerating then the policy rate will be decreased and use of macroprudential tools will be slowed down.

- If both the inflation rate and credit growth are accelerating then the policy rate will be increased and macroprudential tools will be used aggressively.

- If the inflation rate is decelerating and the credit growth is accelerating then the policy rate will be decreased and macroprudential tools will be used aggressively.

To sum up, when the credit growth is accelerating the macro prudential tools will be used aggressively, and when the inflation rate is accelerating the policy rate will be increased. Moreover, as described at the beginning of this chapter, the new policy mix also assumes that the foreign exchange position of the country will be strong. As is known, the CBRT is implementing a floating exchange rate regime while keeping its foreign exchange reserves high to intervene in the markets in case of necessity. Therefore, it can be said that the foreign exchange rate regime remains same in this new monetary policy structure. The details of the new policy mix will be developed in two ways; liquidity management and required reserves as the CBRT has declared that it will use these tools as policy instruments.

5.1.   LIQUIDITY MANAGEMENT

The majority of central banks which are aiming at inflation targeting use an interest rate corridor. The CBRT, when announcing the policy rate, declares one borrowing and one lending rate.[20]
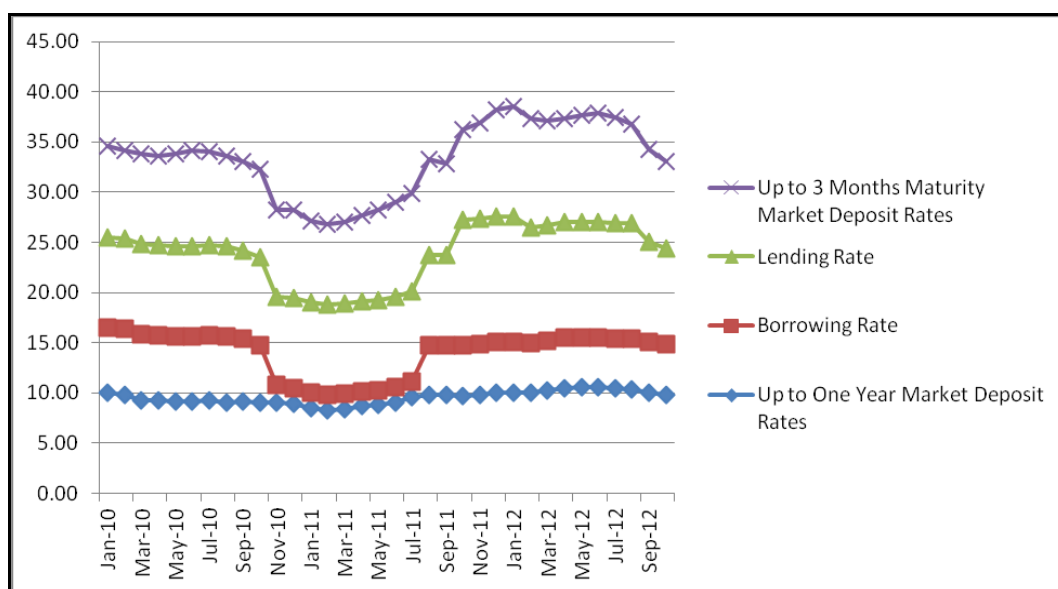
Figure 14 Market Rates versus Policy Rates (November 2010 - April 2012)
Source: CBRT

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[20] See Figure 14 for the interest rates.

The lending rate is used to relieve the banks which face liquidity shortages. The borrowing rate is used for the emmision of over liquidity within the market (Özatay, 2011). Using an interest rate corridor rather than a single policy rate makes this tool more powerful over the economy. For instance, if the CBRT widens the interest rate corridor, it would enable market rates to be able to fluctuate within the bands and as a result a certain level of uncertainty would be created. This uncertainty would lead to an increase in the cost of credits which could result in a decrease in credit expansions.
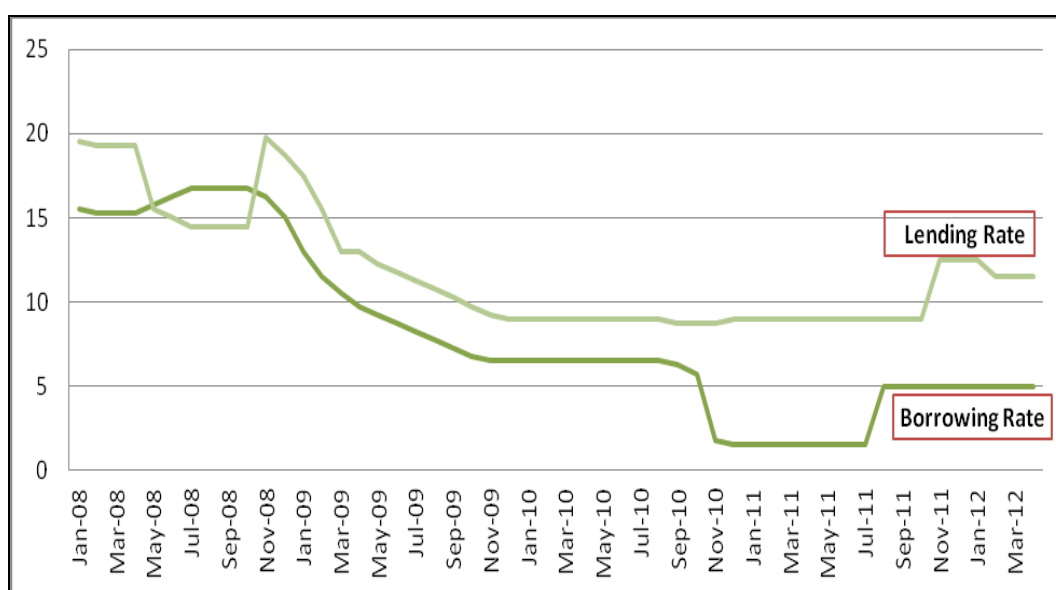
Figure 15 Interest Rate Corridor (2008 - 2012)
Source: CBRT

The CBRT has used this strategy several times. When we look precisely at the interest rate corridor data of December 2010, July 2011 and November 2011 and from figure 14, we see examples for radical widenning of the interest rate corridor. On December 2010 the Lending rate was decreased to 1.75% from 5.75% and the borrowing rate was increased to 9% from 8.75%. On July 2011 the lending rate was increased to 5% from 1.5% and the borrowing rate remained at the 9% level. Again on November 2011 the lending rate was increased to 12.5% while the CBRT did not change the borrowing rate. As explained above, the borrowing rate

81

represents the rate that the CBRT uses for emissions of liquidity from the money market. The lending rate represents the interest rate on which the CBRT lends money to the banking sector. Therefore, when the CBRT increases the borrowing rate, commercial banks become more profitable if they invest liquid money in the CBRT. As a result, emissions of liquidity from the system can be maintained. When the CBRT decreases the lending rate it means the cost of getting the necessary liquidity will be less costly to the commercial banks. Therefore, the CBRT relieves the commercial banks in urgent occasions.

Moreover, the CBRT also uses the one week repo interest rates for liquidity management. In accordance with the new policy mix, the one week repo interest rates have started to be announced on a daily basis. In other words, the CBRT attempts to arrange short term market rates through its daily announcements as the one week repos are used for funding the short term liquidity needs of the commercial banks. Nowadays, the CBRT keeps the interest rate corridor as wide as possible with the aim of limiting the credit expansions with the expectation that was mentioned above. The important point here is that to keep the market rate within the boundaries of the CBRT interest rate corridor, the CBRT should supply the liquidity that is needed in the money market.

Moreover, there are additional tools to ensure control over banks. Therefore we can say that the repo auctions are not the only source of liquidity enhancement for the CBRT. In the traditional system, all short term interest rates were arranged to maintain a certain level of short term market rates. In the new structure the CBRT by other liquidity supplying operations the average short term funding rate and targeted short term market rates are assumed to be differentiated from one another (Kara, 2012).

To sum up, the interest rate corridor system has started to be used actively to use uncertainty as an additional tool for limiting credit expansion. As the corridor system is meaningful only if the market rates fluctuate within the boundaries of

the corridor rates, one week repo rates have started to be announced daily and are used to manage liquidity within the system.

5.2.   REQUIRED RESERVES

Besides interest rate corridor, the CBRT continued to use a required reserve ratio actively after the global financial crisis for its financial stability targets. As there is a mismatch between the maturities of deposits and participation funds and the loans or securities, the liquidity and interest rate risk rises for the banking system. In order to widen the margins between short and long term deposits, the CBRT introduced higher required reserve ratios for the short term deposits including the foreign exchange deposit funds. In the financial stability report of May 2011 it was declared that the reason behind these changes was to match the maturity dates of bank deposits and loans (CBRT, 2011). It was argued that the average maturity of deposits and participation funds has started to be extended following these developments.

Furthermore, the CBRT permitted holding a certain portion of the required reserves in foreign exchange which is called as Reserve Option Mechanism. As well known the foreign exchange rate is influenced by the capital movements. When foreign capital inflows to the country, the foreign exchange rates depreciate and vice versa. Reserve option mechanism is believed to decrease this pressure on foreign exchange rates created by the volatility of capital flows. Reserve option mechanism enables the commercial banks to hold a certain level of their required reserve in foreign exchanges and gold (Alper, Kara and Yörükoğlu, 2012). It is assumed that when foreign capital inflows to the country, the commercial banks will prefer to hold their required reserves in foreign exchanges as the foreign exchange rate depreciates and it will be less costly to hold the certain level of required reserve. This in return will decrease the rate of appreciation in the domestic currency and therefore will maintain foreign exchange rate stability. Besides reserve option mechanism, another important development on required

reserve ratio tool will take place when the BASEL III will be implemented. The CBRT, in its 2013 monetary and foreign exchange rate policy report, declared that a new required leverage ratio will be implemented in the last quarter of 2013 (CBRT, 2012). Additionally starting from the last quarter of 2013, the reserve requirement of the commercial banks will be calculated on this required leverage ratio. It means the commercial banks will be responsible from holding required reserve for their off balance sheet transactions as well.

Briefly, the required reserve ratios continue to be an important tool in the new policy mix. It is used to decrease the credit expansion by increasing the cost of crediting to commercial banks as well as to ameliorate the proportion of loans which the commercial banks have. Additionally, the newly introduced Reserve Option Mechanism tool is believed to be beneficial in terms of foreign exchange rate stability as it permits commercial banks to hold a certain level of their required reserve in foreign exchange rate and gold. It is evident from the very outset that the required reserve ratio will be used as an active tool to stabilize financial markets in the coming years.

To conclude, after the Global Financial Crisis, the import intensive and externally financed domestic demand was significantly divorced from the foreign demand. The huge capital inflow created pressure on the domestic currency to appreciate which resulted in an increase in the imbalance of the current accounts. Therefore the CBRT has become more prudent on credit expansion and asset bubbles. For the first time in its history, the CBRT has put financial stability on its agenda on the same level as price stability since November 2010. From that time on, the CBRT has started to implement a new policy mix and macroprudential tools. The tool portfolio of the CBRT in its new policy mix includes interest rate corridor, one week repo rates and a required reserve ratio. The interest rate corridor and one week repo rates are used to manage liquidity whereas the required reserve ratio is used actively to decrease the credit expansion and to match the maturities of loans and deposits of commercial banks.

CHAPTER 6

WILL THIS NEW STRUCTURE WORK?

After the global financial crisis, financial stability has become one of the main concerns of the majority of central banks. As the financial markets are integrated with each other, substantial vulnerability to external shocks increases. As a result, countries regardless of their growth rate records came to understand that an external shock could affect their economies severely. As a developing country, Turkey also has significant vulnerability to external shocks. Therefore, the CBRT put financial stability on its agenda at the same level as price stability for the first time in its history and announced its new structure. The new structure, which can be accepted as another reactionary policy shift by the CBRT, includes use of macroprudential tools along with policy rates. The CBRT describes financial stability as the use of more equity capital, more prudent borrowing and longer maturities for borrowing, a strong foreign exchange position and more effective risk management. In other words, the CBRT targets control of credit expansion, the inflation rate and foreign exchange rates at the same time with the help of this new structure. Although the new policy mix may have some merits, it has its own structural problems as well.

There are two main interrelated arguments in this part. First, it will be argued that the new policy mix may not achieve its all targets at the same time in an open economy where capital is mobile, financial stability is an additional restriction,

and foreign exchange rates and the inflation rate are matters of concern. This is called the "macroeconomic quadrilemma" in the literature (Aizenman, 2011). There is a large and still growing literature on the theory of macroeconomic quadrilemma. This thesis resembles complementary ideas to the theory by assessing the recent Turkish monetary policy in particular. In this thesis it is argued that the macroeconomic quadrilemma of the Turkish economy may block the success of the new structure of the CBRT. Second, the new structure of monetary policy, which is another reactionary policy shift by the CBRT, may not be successful in all its arguments because of the ineffectiveness of the tools that the CBRT uses. As detailed in Chapter 5, the CBRT uses an interest rate corridor and required reserve ratios to achieve its targets. In this chapter, it is argued that the macroeconomic quadrilemma conditions and the ineffectiveness of the tool portfolio of the CBRT are interrelated factors and are symbiotically affecting each other.

The organization of this chapter is as follows; first a short description of classical macroeconomic trilemma and the new version of macroeconomic trilemma will take place. Second, through the addition of financial stability on the monetary policy agenda, how the new version of macroeconomic trilemma evolved in to quadrilemma will be explained and how it appears in the new monetary policy mix of the Turkish economy will be elaborated. Third, in section 6.4 the capability of the tools to be used in the new policy mix will be assessed and the last part will conclude.

6.1.   THE CLASSICAL MACROECONOMIC TRILEMMA FRAMEWORK

The classical theory of macroeconomic trilemma or the imposible trinity is described as follows; free capital mobility, fixed exchange rate regime and sovereign monetary policy are contradictory objectives and can not be maintained together, therefore the policy maker has to forsake one of the three.
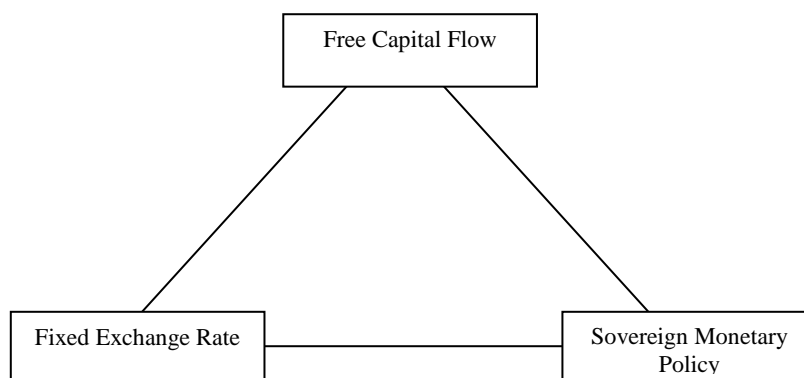
Figure 16 The Classical Macroeconomic Trilemma

Figure 15 represents the Classical Impossible Trinity Theory. The Classical Theory states that governments which try to pursue the three desired goals fail because they can not stand at different vertexes of the triangle at the same time. Briefly, it is stated that a fixed exchange rate regime, free capital movement and an independent monetary policy can not be pursued at the same time because of the uncovered interest rate parity condition. The interest rate parity condition can be described as the following. Assuming there is no risk premium, the arbitrage will lead to depreciation or/and appreciation of the domestic currency vis a vis the foreign currency and will be equal to the nominal interest rate differential between the two currencies (Mundell, 1963).

In the left vertex of the triangle, as the exchange rate is fixed and there is free capital mobility, the policy maker cannot set its nominal rates. In other words, the monetary policy is not sovereign. The right vertex represents sovereign monetary policy and free capital mobility. As there is a direct link between foreign country interest rates and domestic interest rates, free capital mobility leads to volatilities in foreign exchange rates. Therefore, the policy maker may maintain the policy rates according to domestic needs while it can benefit from the prosperity of free capital mobility. However, the foreign exchange rate can not be fixed.

The vertex at the bottom represents sovereign monetary policy and a fixed exchange rate regime. The sovereign monetary policy and a fixed exchange rate regime can be maintained only if the arbitrage condition, which was explained at the beginning of this section, can be prevented through capital controls. Therefore, in this case, free capital mobility should be forgone.

6.2. THE NEW MACROECONOMIC TRILEMMA THEORY

Although the Classical Theory explains the extreme versions of capital mobility, fixed exchange rate and sovereign monetary policy, in this thesis it is argued that the macroeconomic trilemma still appears in versions of the floating exchange rate regime that developing countries implement widely. As mentioned in Chapter 4, although the majority of developing countries including Turkey use a floating exchange rate regime, foreign exchange rate stability is an important matter of concern for them and they hold high reserves to be used for necessary interventions to the foreign exchange markets. In this section, it is argued that free capital mobility, foreign exchange rate stability and sovereign monetary policy are contradictory objectives and that the monetary policy maker must forsake one of them.
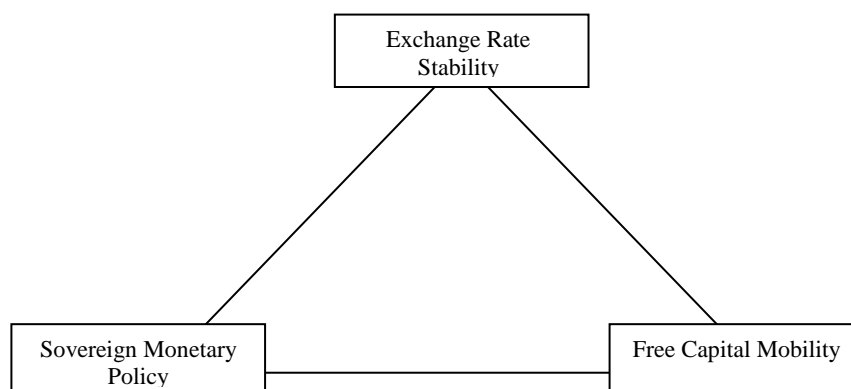
Figure 17 The New Macroeconomic Trilemma

The new macroeconomic trilemma can be described as the problem of maintaining only two of the following goals while the policy maker must forsake one. The three desirable, but contradictory objectives, are stabilizing the exchange rate, free international capital mobility and maintaining a monetary policy according to domestic needs. Aizenman, Chinn and Ito (2009) state that policy makers will eventually face a tradeoff where one objective dominates the other two.

Figure 16 represents the challenges to the monetary policy maker by showing the targets in each side of the triangle. According to the macroeconomic trilemma theory, the positioning of the monetary policy will change the trade-off. The first vertex represents a macroeconomic policy of a closed economy, where foreign exchange rate stability and independent monetary policy can be arranged according to domestic needs. The policy maker may increase the supply of money, and the interest rates will fall. As the economy is a closed economy, there is no link between foreign bonds and domestic bonds. Therefore there is no capital flight of seeking high yields. Therefore the fall in interest rates will not affect the supply of foreign exchanges. The policy maker therefore may arrange the liquidity supply according to domestic needs and pursue a foreign exchange rate policy separately from liquidity management.

The right vertex represents foreign exchange rate stability and free capital mobility, but the monetary policy is not sovereign. The policy maker may increase the supply of money, and the interest rates will fall. As the economy is an open economy there is a direct link between foreign bonds and domestic bonds. Therefore the capital outflows from the country in search of high yields. The capital outflow will cause an excess demand for foreign exchanges. Aa a result, foreign exchange rates will increase. To maintain foreign exchange rate stability the policy maker should supply the necessary foreign exchange liquidity to the system by using its foreign exchange rate reserves. The exchange rate falls, leading to an increase in exports and an increase in demand for money supply and the interest rates will eventually rise again. The policy maker therefore may

arrange the foreign exchange rate and free capital mobility at the expense of a dependent monetary policy.

The bottom vertex represents sovereign monetary policy and free capital mobility, but the foreign exchange rate is not stable. The policy maker may increase the supply of money and the interest rates will fall. The fall in interest rates will lead to higher investment and output. On the other hand, as the economy is an open economy, there is a direct link between foreign bonds and domestic bonds. Therefore, the foreign capital outflows from the country in search of high yields. The capital outflow will cause an excess demand for foreign exchanges. Foreign exchange rates will increase which will increase exports. Thus, the policy maker can pursue a policy according to domestic needs and the capital is mobile but has to let the foreign exchange rate float.

6.3.   THE MACRO ECONOMIC QUADRILEMMA

As mentioned in the introduction to this chapter, there is a still-growing literature on the macroeconomic quadrilemma. The theory enables an instructive insight for the trade-offs an economy may experience. Obsfeld and Taylor (1998) call the term an "open–economy trilemma" and state that the emerging markets will have to experience the trade-offs of the trilemma more severely as global financial integration continues to develop. Calvo and Reinhart (2002) state that under a floating exchange rate regime, a limited monetary autonomy may still exist.

As mentioned before, developing countries face a new challenge called financial stability in addition to the trilemma that is described above. Challenged by sudden capital flights and experiencing the global financial crisis, countries became more prudent about their financial stability. Therefore financial stability has been added to the main targets in addition to the ones that are described above. Aizenman (2011) called this addition as a "macroeconomic quadrilemma". He states that financial stability has added to the triangle targets; namely, foreign exchange rate

stability, financial integration and independent monetary policy (Aizenman, 2011).
In other words, the central banks have an additional restriction as the
macroeconomic trilemma still exists but has evolved. Hence, each vertex of the
triangle now has another important restriction called financial stability.

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                    ┌─────────────────┐
                    │  Exchange Rate  │
                    │    Stability    │
                    └─────────────────┘
                   /                     \
                  /  ┌────────────────┐   \
                 /   │ Financial      │    \
                /    │ Stability      │     \
               /     └────────────────┘      \
   ┌──────────────────┐              ┌──────────────────┐
   │ Sovereign Monetary│──────────────│ Free Capital Mobility│
   │     Policy        │              │                  │
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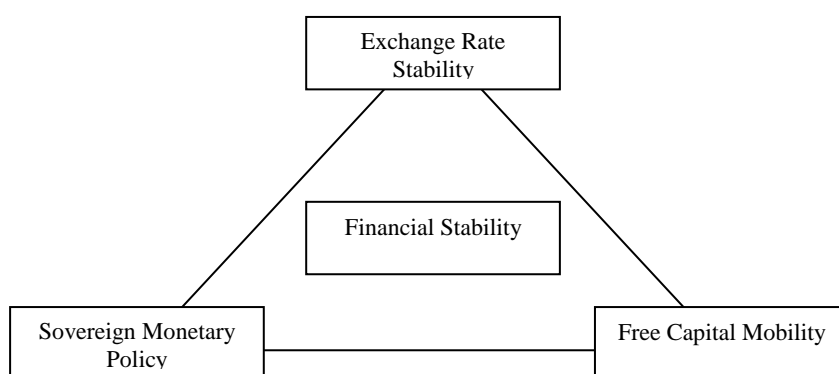
Figure 18 The Macroeconomic Quadrilemma

As can be seen in the figure above, in the right vertex of the triangle, a country
will have foreign exchange rate stability and free capital mobility. The theory
states that if the central bank pursues foreign exchange rate stability in an
environment where capital is mobile, it cannot have a sovereign monetary policy
with the restriction of financial stability. When the capital outflows from the
country, there would be excess demand for foreign exchanges and the value of
foreign exchange rate will increase. Moreover, the capital outflows will eventually
increase the vulnerability of markets because of a liquidity squeeze and harms the
financial stability. The theory argues that the central bank, which prefers a stabile
foreign exchange rate, should intervene in the markets with its reserves to supply
the necessary liquidity to the system. Moreover, it should increase the interest
rates leading to a capital inflow in search of higher yields. On the other hand,
increasing the interest rates will increase the inflation rate. Therefore, the interest
rates cannot be determined according to domestic needs.

The left vertex of the triangle represents foreign exchange rate stability and sovereign monetary policy where capital is not mobile. In this environment, as there is no link between foreign exchange rates and domestic interest rates, the central bank can arrange foreign exchange rates and liquidity management separately and maintain financial stability as there is no exposure from capital coming from abroad into the country.

The bottom vertex of the triangle represents sovereign monetary policy and free capital mobility. When the foreign capital outflows from the country, because of excess demand for foreign exchanges, the domestic currency will depreciate. As financial stability is another restriction to decrease the vulnerability caused by outflows, the central bank should increase interest rates. Increasing interest rates will increase the inflation rate, leading domestic currency to depreciate again. Therefore, with the restriction of financial stability, the sovereign monetary policy and free capital mobility can be maintained at the expense of the volatility of foreign exchange rates.

To sum up, theoretically when financial stability is added as another restriction to the triangle, the tradeoffs of the economies still exist. On the other hand, each case of the triangle may be worse than the theory assumes because of the following reasons. First of all, although the theory argues having high foreign exchange rate reserves would be a panacea for foreign exchange rate stability, we argue that having high foreign exchange reserves may backfire because it attracts more capital inflow to the economy. Second, in case of a speculative attack the foreign exchange reserves may not escape depletion.

Turning back to the Turkish case, one clearly sees that the targets of the new structure of the CBRT are the same as the contradictory targets of the "macroeconomic quadrilemma" (Aizenman, 2011). As mentioned before, the CBRT stresses the fact that having a strong foreign exchange position is an important aspect of financial stability. Similar to the situation in other developing

countries, Turkish exporters are always subject to foreign exchange rate risk because they cannot use their domestic currency as intermediaries in their transactions. Aizenman, Ito and Chin (2009) also point to the same problem by stating that the emerging markets face the trilemma boundaries more severely than their developed counterparts. To decrease the foreign exchange rate risk of markets, the CBRT is trying to stabilize the foreign exchange rate by having high reserves. Proponents of a floating exchange rate regime argue that the monetary policy maker should hold high reserves in case of a speculative attack. For instance Calvo (2006) states that;

> The central bank should be ready to operate as lender of last resort during Sudden Stop (of capital inflows) by releasing international reserves in an effective manner. These conditions also impact on optimal monetary policy in normal but high-volatility periods.………During those periods interest rate rules may engender excessive volatility of exchange rates and, thus, that it may be advisable to temporarily supplement those rules by foreign exchange market intervention or outright exchange rate pegging.

Cortuk and Singh (2011) also empirically found in their study on the existence of the macroeconomic trilemma trade-off in the Turkish economy that the international reserves of the CBRT has a significant role in softening Turkey's trilemma trade-offs by contributing to exchange rate management and limiting the volatility of exchange rates in case of high capital inflows. On the other hand, having high foreign exchange reserves may backfire too. As it is widely believed that holding high reserves is a sign of a strong central bank, the high reserves themselves may invite the short term foreign capital to an economy. Marion Williams (2006) argues that the foreign exchange reserves that the policy makers hold invites foreign capital inflows when the level of the reserves is high and also increases the capital outflows when the level of the reserves is low. As short term capital inflows into the economy, the fragility of the finance sector increases against a sudden stop. Wyplosz (2007) states that the foreign exchange reserves of the policy maker to protect the economy from sudden stops are increasing the level at which a speculative attack is triggered by the markets. In other words, the policy makers try to increase their reserves further and invite more foreign capital.

The foreign capital which is welcomed by high yields increases the risk of reversals. Therefore, although enjoying the prosperity of incoming foreign capital in an economy seems to be indispensable, it is also true that the free capital mobility is like a "double-edged sword" (Aizenman, Chinn and Ito, 2009) and holding high foreign exchange reserves may not be a sustainable solution.

One should quickly notice from the Turkish experience that high interest rates and low domestic currency arrangements will trigger the incoming of the short term foreign capital if the global conditions are convenient as well. In this environment it is quite easy to decrease the inflation rate and maintain price stability if the fiscal policy acts in parallel to the monetary policy. When the scenario reverses due to a sudden external shock, the monetary policy tools to defeat the bad effects are limited. As the reserves of the policy maker are limited and may not escape reduction if capital outflows continue for a long enough time, a liquidity squeeze may arise.

The reserve adequacy ratio which is used as a measure for the capability of foreign exchange reserves in sudden stops is also a controversial issue. There are several threshold measures to control the capability of foreign exchange reserves which central banks hold. For instance, the IMF advises monitoring of portfolio inflows, short term foreign currency denominated debt, M2 money stock and the total value of exports as measure (IMF 2011). However, developing countries, including Turkey, which have liberal financial markets, may face an excessive portfolio outflow in a very short time. Therefore, regardless of the foreign exchange reserve adequacy ratio, the economy may face a sudden liquidity squeeze that the reserves cannot prevent.

Additionally, as Turkey is an open economy, under the flexible exchange rate regime, a contraction of the domestic money supply increases the interest rate, which results in capital inflows in search of higher profits. The capital inflows cause excessive supplies of foreign exchange rates which result in appreciation in

94

the domestic currency. Appreciation in the domestic currency by increasing the imports and decreasing the exports expands the current account deficit. Therefore it can be said that because of free capital mobility, maintainning stable foreign exchange rates is difficult while determinning the policy rate according to domestic needs.

Moreover, in the opposite scenario, the system works in a worse way. In the case of a liquidity squeeze, the CBRT supplies the necessary domestic money to the markets. An expansion of the domestic money supply decreases the interest rate, which results in capital outflows in search of higher yields. The capital inflows cause excessive supplies of foreign exchange rates which result in depreciation in the domestic currency. Depreciation in the domestic currency causes an increase in exports but not a decrease in imports because of the dependence of exports on the importation of intermediary goods, so the current account deficit would remain at a high level in Turkey. Therefore the economy could face a liquidity squeeze again.

To summarize, the CBRT has added financial stability at the same level as price stability in its new structure of monetary policy. In this section, the theory of macroeconomic quadrilemma was followed to assess the sustainability of this new structure. The macroeconomic quadrilemma provides important insights regarding the possible trade offs for the CBRT. As the Turkish economy has an intermediate level of financial integration, with the restriction of financial stability, stabilizing foreign exchange rates by holding high reserves and intervening in the markets may not be the sole panacea to vulnerability to external shocks. To support this idea, it was first explained that as the high foreign exchange rate reserves are assumed to be signs of being strong, the high reserves may invite more foreign capital into the economy. Therefore it may increase the vulnerability of the economy itself. Second, as financial integration develops, capital flights and volatility is increasing. Therefore, it was argued that when capital starts to outflow, interventions in the markets through foreign exchange rate reserves may

not be a sustainable solution if it lasts long enough. In such a case, the economy may face a huge liquidity squeeze and the foreign exchange rate reserves may not be saved from reduction.

6.4.   AN ASSESSMENT ON THE EFFECTIVENESS OF TOOLS OF NEW STRUCTURE

After the global financial crisis it was clearly seen that as financial integration deepens, economies become much more vulnerable to external shocks. Taking lessons from the global financial crisis experience the CBRT has started to follow a new framework for monetary policy. The CBRT has started to use macroprudental policy tools to find a panacea for financial stability while continuing to pursue price stability. Although the new structure of monetary policy has substantial merits, it has its own challenges as well. In this section it will be argued that the tools that the CBRT possess may not be enough to succeed in its targets. This section was arranged to assess the effectiveness of the tools which are in use to maintain financial stability. In the following two subsections, the use of a required reserve ratio and an interest rate corridor and foreign exchange rate regime of Turkey will be assessed. It will be shown that the policy mix may not be sufficient to maintain financial stability because of the following reasons; first, use of a required reserve ratio may not be enough to decrease credit expansion because of the behavior of the banking sector, as well as because of the growing non-banking sector. Second, it will be shown that maintaining an inflation rate level according to domestic needs solely by using interest rate corridor may not be successful because of open economic conditions.

6.4.1.   REQUIRED RESERVE RATIO

From the Global Financial Crisis on, finding a panacea to the usuriously growing credit expansion has become the main concern for the Turkish economy.

Especially since 2010 the gross external debt profile of the Turkish economy has risen drastically. The CBRT took on the responsibility of decreasing the credit expansion. At first glance it can be seen that the risk rises due to external factors. Therefore, credit taxation seems to be the optimal solution to these external risks (Akkaya and Gürkaynak, 2012).

However, as the CBRT do not have the direct instrument to control the external factors, it uses the required reserve ratio instrument to handle the issue indirectly. The transition mechanism of a required reserve ratio can be explained as follows; when the CBRT increases the required reserve ratio, the amount of reserve that should be kept to give a certain level of credit to commercial banks increases. Theoretically, as the commercial banks' levels of crediting decreases because of the increase in the required reserve ratio, the emission of money from the markets will materialize. On the other hand, in the real world, the mechanism may not work or at least may not be that effective.

The arguments on the effectiveness of a required reserve ratio are controversial. The Financial System Stability Assessment Report of the IMF (2012) addresses the structural problems of using required reserves. It is stated that the CBRT repos are used both as a funding resource as well as to cover the required reserve ratio by the commercial banks.

Kara (2012) argues that the volatility that is created by arranging the repo rates daily can prevent the coverage of required reserves. The daily arrangements create an uncertainty and therefore the commercial banks, which cannot be sure that they can cover the necessary required reserve with the help of one week repos, will become prudent about increasing credits. On the other hand, the daily repo auctions and the one week repos are not the only source of funding for the commercial banks in Turkey. First of all, as financial instruments are developing, the commercial banks can easily find ways to diversify both their crediting and reserve holding options. With the help of swaps and other valuable metals such as

gold holding reserves, or foreign exchanges as well as foreign crediting options, the banks may easily bypass the required reserve conditions of a certain level of credits.
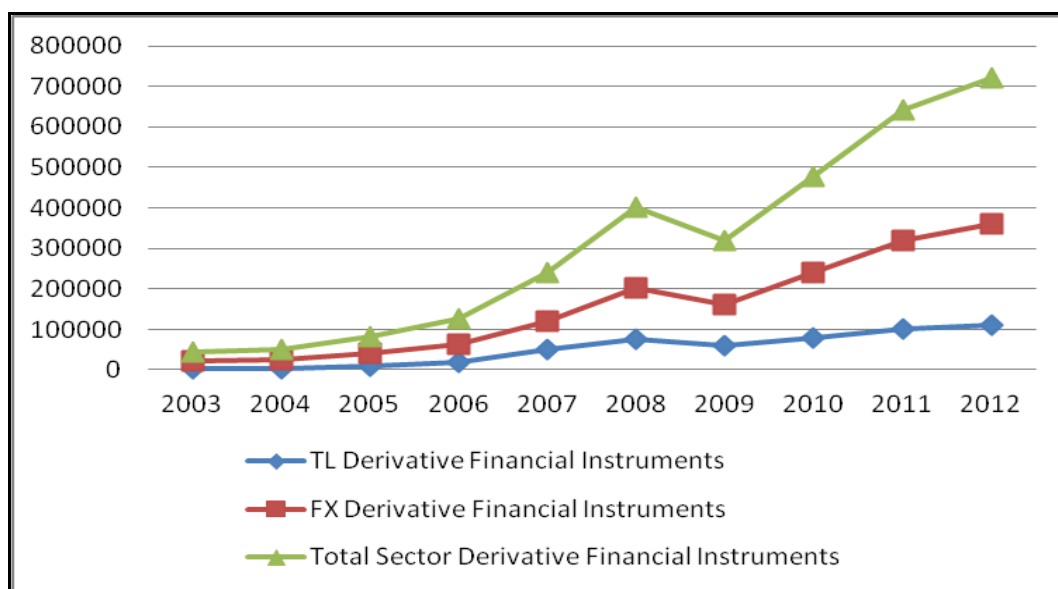
Figure 19 Off-Balance Sheet Transactions of the Banking Sector – Financial Derivatives (2003 - 2012)
Source: BRSA

As financial instruments develop, the off-balance sheet activities of the banking sector are also increasing. Figure 18 shows that the use of financial derivatives both in foreign exchange and domestic currency increased in the period from 2003 to 2012, except for a fall in 2008 due to the Global Financial Crisis. It is valuable to assess the details of the derivative transactions of the banking sector.
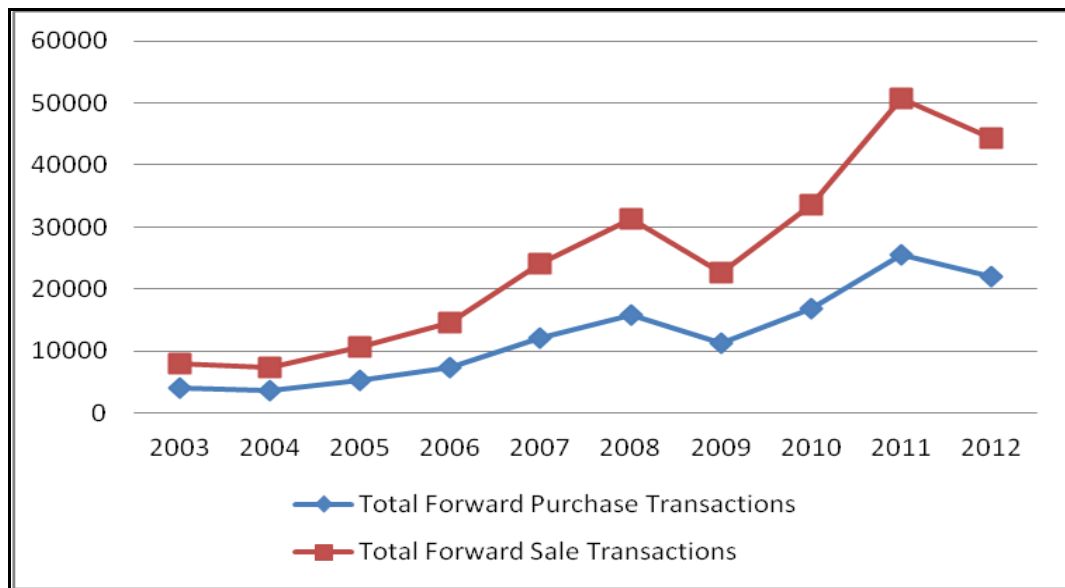
**Figure 20 Off-Balance Sheet Transactions of the Banking Sector – FX
Forward Purchase and Sale Volumes (2003 - 2012)
Source: BRSA**

Figure 19 also shows that there is an increasing trend towards the forward purchase and sale transactions of foreign currency. In its most general definition, the foreign exchange forward contracts are used to hedge the foreign exchange risk as well as to promote higher yields as the forward premium is calculated according to the future value of the money. Therefore, commercial banks, by increasing their forwarding activities, may find the necessary financing resources for their crediting activities.

Another financial derivative instrument that is widely used by the banking sector is money swaps. A money swap can be defined as a contract to exchange cash before a specified date for a contract on the value of the exchange rate, the interest rate, stock or another type of valuable asset. In Turkey, there are two types of money swaps that are widely used in financial markets, namely; interest rate swaps and exchange rate swaps. Both types may be used to get the necessary required reserve for the continuation of crediting behavior by a commercial bank.
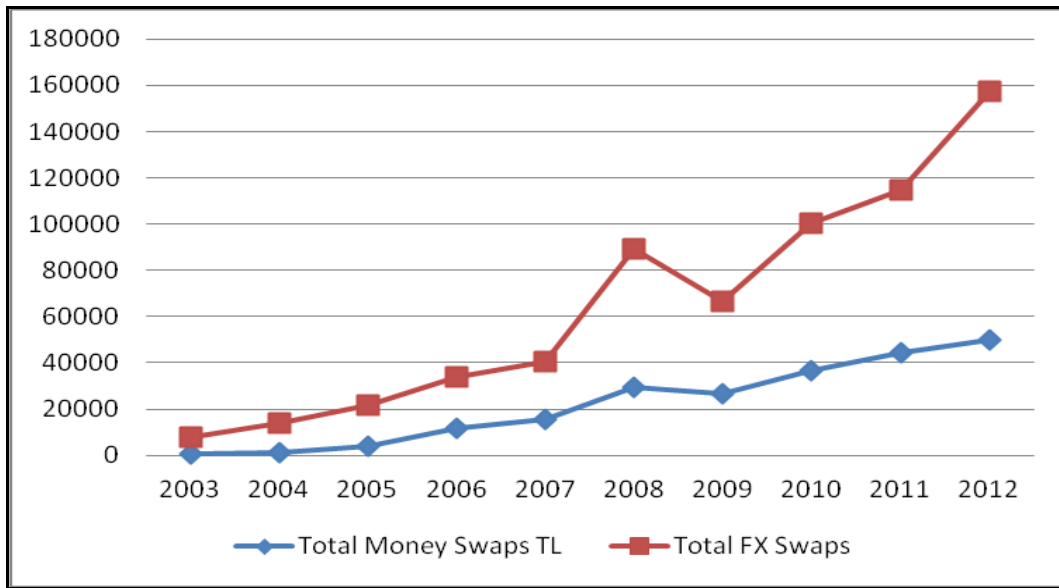
Figure 21 Off-Balance Sheet Transactions of the Banking Sector – TL and FX Money Swap Volumes (2003 - 2012)
Source: BRSA

There are also other types of derivatives which have become popular on financial markets. Therefore; these financial instruments may be used for the credit expansion that the CBRT intends to decrease by using required reserve ratios. The CBRT, rather than increasing the price of the credits, tries to increase the cost of crediting to commercial banks through required reserves. The required reserve ratio affects all the passives except the assets of a commercial bank (Akkaya and Gürkaynak, 2012). Therefore, if there are two banks whose crediting volumes are same, the one which holds more deposits relative to the other has to hold more required reserves. Therefore, commercial banks prefer to fund their credits by other off balance sheet items such as money swaps. As a result, if this substitution is not a concern, an increase in the RRR will be ineffective; it will only change the deposit to a total actives ratio (Akkaya and Gürkaynak, 2012). Alper and Tiryaki (2011) also mention that the changes in required reserve ratios change the commercial banks' cost of resources. On the other hand, when deposit rates are low, the effects of the additional cost of the required reserves to interest rates are

limited because the demand for credits is indifferent to the small changes in the interest rates in Turkey. As mentioned above Kara (2012) believes the required reserve ratio can be effective on liquidity channels whereas he also mentions that the cost that is to be created by increasing the required reserve ratio will be ineffective on credit expansion. We believe as the required reserve ratio could easily be bypassed by the commercial banks via using off balance sheet transactions; the CBRT introduced the reserve option mechanism. As mentioned in Chapter 5, the reserve option mechanism enables commercial banks to hold a certain level of the required reserve in gold and foreign exchange rates. It is believed that, when foreign capital inflows to the country the commercial banks will prefer to hold their required reserve in terms of foreign exchange rate. Therefore, the CBRT targets to maintain foreign exchange rate stability as well as financial stability together with using the required reserves. However, when commercial banks use off balance sheet transactions to finance their crediting they will not require to hold any reserves at all. Therefore, in case of a capital inflow, commercial banks may finance their crediting by foreign exchange rate swaps and futures rather than using deposits if this substitution is easy. Thus, the reserve option mechanism may not create the necessary incentive to hold deposits by enabling to hold a required reserve in terms of gold or foreign exchanges.

As mentioned in Chapter 5, new implementations on the required reserve ratio will take place when the BASEL III standard will start to be applied. We described that a new required leverage ratio will be implemented in the last quarter of 2013. The new required leverage ratio will calculate the total actives to sum of total passives and off balance sheet transactions of commercial banks. The commercial banks will calculate their reserve requirement on this ratio starting from the last quarter of 2013. In other words, if a commercial bank uses more leverage than the ratio states, it will be subject to a higher required reserve ratio. This means, the commercial banks will have to hold required reserve for their off balance sheet activities as well. We believe the CBRT, being aware of the ineffectiveness of the required reserve ratio usage on credit expansion of commercial banks, decided to

implement this new measure. However, the off balance sheet items in the financial markets are very complicated and hard to measure. Moreover, the BASEL III will bring additional complex financial instruments to the Turkish financial markets. Therefore, we believe the measures on the required reserves may create a conflict within the financial markets and necessitates a more careful micro level auditing of commercial banks. Henceforth, a closer cooperation of the BRSA and the CBRT will be inevitable in the future.

Second, the required reserve ratio may not be effective on the non-banking sector crediting mechanism. Although the banking sector has a significant dominance over the credit channel, the non-banking sector has been growing at a high rate. BRSA declared in its December 2011 Financial Markets Report that the total assets of the non-banking financial sector, including the financial leasing companies, asset management companies, consumer financing companies, and factoring companies, grew by 18.9% in 2011 compared to the previous year (2011). The IMF (2012) also puts it as follows;

> There were three financial holding companies (as defined under the Turkish Banking Law) operating in Turkey as of the end of 2010. However, three other financial groups operate in more than one financial subsector. Some banks have also developed significant ownership links with non-banks.

Because the required reserve ratio may not be as strictly binding over the non-banking sector as the banking sector, control over credit expansion solely through a required reserve ratio may not be sufficient. Therefore, the non-banking sector credits can also be an important aspect of vulnerability to external shocks. Röhn O et al (2012) also addresses the same problem by stating that the micro and macro-prudential policies may have limitations when capital flow volatility stems from the non-financial corporate sector.

Tovar, Garcia-Escribano, and Martin (2012) put the risks of non-financial corporate sector elegantly;

> Required reserves are no free lunch as they have associated costs and may introduce distortions in the financial system. …This may stimulate bank

disintermediation, increase non-bank financing and lead to excessive risk taking in other less regulated sectors.

6.4.2.   INTEREST RATE CORRIDOR

Additionally, to have an effective financial stability the CBRT uses an interest rate corridor rather than simply using policy rates besides required reserves. The corridor rate is meaningful only if the realized market rates fluctuate within its boundaries. Therefore, ensuring that the market rates fluctuate within the borrowing and lending rate band is crucial and the CBRT maintains this by supplying the necessary liquidity to the system when needed. According to Ozatay (2009), as the CBRT in the interest rate corridor system supplies the necessary liquidity to the system, banks will use this liquidity to expand their credits in case of a match between the maturity dates of bank credits and the CBRT lendings.

One can see in Figure 20 that to refine the quality of credits and increase the maturity of credits in the banking sector the use of macroprudental tools alone may not be enough.
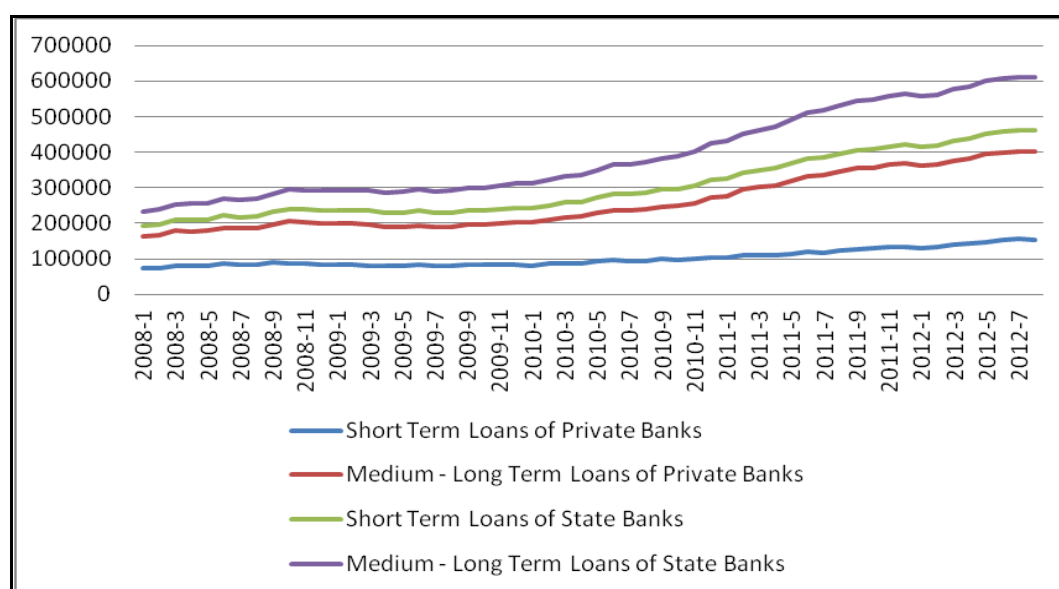
Figure 22 Distribution of Banking Sector Credit Maturities
Source: BRSA

The maturity distribution of banking sector domestic currency credits show that an overall credit expansion continues. As can be seen in Figure 21, there is no significant fall in the short term credit expansion of the banking sector.

Besides suppressing credit expansion, maintaining control over the inflation rate is described as another important target of the new monetary policy structure of the CBRT. On the other hand, the policy rates that are used for price stability cannot be used for financial stability. To be precise, when capital inflows, on one hand, the credit expansion should be decreased, but on the other hand, the domestic currency should not be devalued too much. As the capital inflows to the country the vulnerability to a sudden stop increases especially if the real sector becomes dependent to external borrowing. Therefore, to slow down the credit expansion the central bank should decrease policy rates. The reduction in the policy rates lead the short term capital to outflow from the domestic market in search for higher yields. However, decreasing the policy rates will cause the domestic currency to depreciate. The depreciation of the domestic currency will increase the inflation rate. Therefore, it is clear that financial stability and price stability cannot be maintained by using same policy rates.

In other words, the new policy mix may diminish ongoing inflation targeting achievements. Ucer (2011) argues that the new structure will eventually cause a misunderstanding for some time between targets as the CBRT can not maintain and stabilize its inflation rate targets. Therefore, we can observe a resistance in the inflation rate to fall to targeted rates as the expectations can not be changed because of the missignalings of the new structure.

On 21 February 2012, the monetary policy commitee of the CBRT declared at a meeting that they have also noted that inflation will hover above the target for some time.[21]

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[21] See Figure 23 for details.
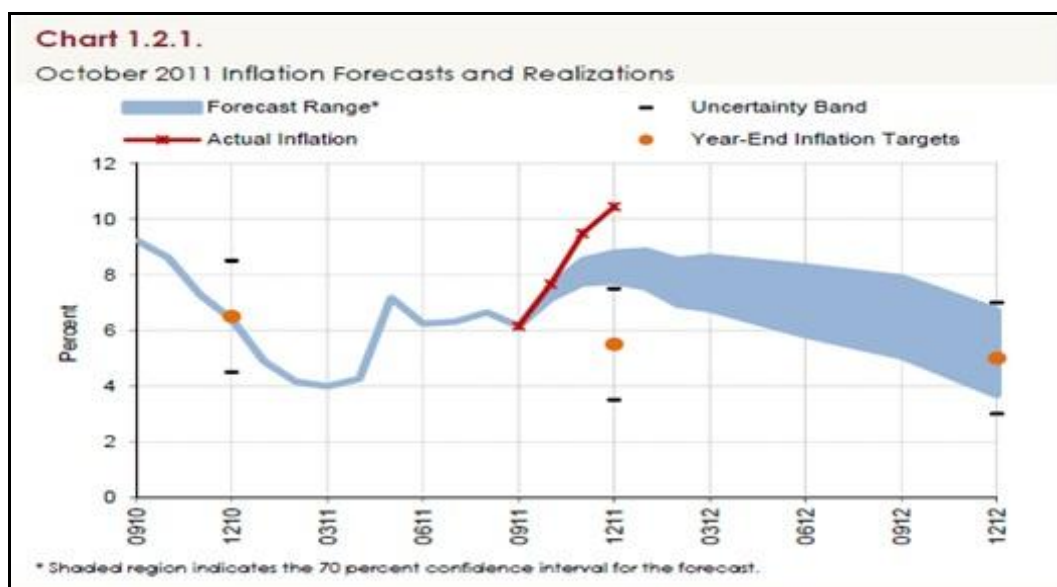
Figure 23 Realizations and Forecasts of Inflation
Source: The CBRT 2012-1 Inflation Report

The question of losing power on inflation targeting program because of the emphasis on financial stability inflation rate is answered by stating that inflation expectations are under control and there is no significant deterioration in the pricing behavior. On the other hand, the inflation rate forecasts were revised in the 2012-1 Inflation Report and the CBRT announced inflation rate bands rather than targeted point rates. Moreover, the CBRT stated that these values were forecasted only to give information and should not be perceived as a commitment (CBRT, 2012). The revised forecasts can be seen in Table 9.

Table 9 Inflation Rate Forecasts (2012 – 2013)

Years	Lowest Band	Highest Band
2012	5.1%	7.9%
2013	3.3 %	5.1%
2014	3%	7%
2015	3%	7%

Source: The CBRT 2012-1 Inflation Report and The CBRT 2013 Monetary and FX Rate Policy Report

The CBRT states that the forecasted values are revised due to external economic conditions, especially due to problems stemming from the Eurozone and

uncertainties in oil prices. This statement is one of the main evidents that the inflation rate is not and has never been under the control of the policy maker solely, but rather is influenced by financial openness and external factors such as energy prices and exchange rate changes. As can be seen in Table 11, the inflation rate band for 2012 was 5.1 % to 7.9 % in the first inflation rate report of the CBRT. The annual change in the inflation rate was 6,16 % in December 2012. The forecasts for 2014 and 2015 were declared as 5 % and the uncertainty band was determined as 2 % in the 2013 monetary and foreign exchange rate policy report of the CBRT (2012).

Another important source of an upwards pressure on the inflation rates may be the uncertainty that is created by the CBRT by widenning the interest rate corridor. By widenning the interest rate corridor the CBRT creates uncertainty on purpose. As the width of the corridor is increasing, the volatility of market rates is also increasing. This implementation, although it may help to alleviate the risk of short term capital inflows, will be detrimental on investment and expectations (Röhn, Gönenç, Koen and Karaşahin, 2012). The worsening of expectations will eventually increase the inflation rate, which has actually never solely been under the control of the policy maker, and may become a more significant problem for the economy.

One important note that should be mentioned here is that the new monetary policy structure of the CBRT has only been being implemented since November 2010. Therefore the data is still inconclusive for a broad empirical analysis. On the other hand, although it's too soon to see the effects of the policy mix, it would not be an exaggergation to state that the corridor system of interest rates and using required reserve ratio actively, while foreign exchange rate stability and having inflation rate as matters of concern, may not succeed in maintainning financial stability.

6.5.   POLICY PROPOSALS

As mentioned at the beginning of this chapter, the CBRT may have to give up one of the desirable targets of its framework due to the nature of the macroeconomic quadrilemma.   It was described that the foreign exchange stability, capital mobility, monetary policy arrangements according to domestic needs, and financial stability are contradictory objectives by nature. In this chapter, two possible arrangements to solve this contradiction will be proposed. First, if the foreign exchange rate stability is a matter of concern in addition to sovereign monetary policy, the CBRT should give up free capital mobility which will increase the pressure on foreign exchange rates. The suggested solution to this problem is to implement restrictions on capital flows. Second, it will be proposed that if the CBRT targets foreign exchange rate stability while the blooming of financial integration into a global world continues, then BRSA and fiscal policy should accompany monetary policy in a more effective manner as the tools of the CBRT may not be enough for financial stability.

As mentioned before, one of the main targets of the new monetary policy structure is to maintain foreign exchange rate stability. While the CBRT lets the foreign exchange rate float, on the other hand, it also intervenes in the markets when it is necessary by holding high reserves. It was stated in section 6.1 that holding high foreign exchange reserves may not be a sustainable solution as the reserves are limited. It was mentioned that the reserves may not escape from reduction if a speculative attack persists long enough. The suggestion to such problems is to control capital mobility by using taxation on some portfolio investments. Aizenman also (2011) points out the same solution for such vulnerabilities, which is to opt out of financial liberalization as it prevents arbitrage between domestic and foreign bonds and breaks the competition of domestic and foreign interest rates to regain monetary independence and foreign exchange rate stability. Proponents of tax controls on capital argue that taxation can be beneficial as it reduces the risk exposures of capital flows. For instance, Korinek and Jeanne

(2010), argue that the tax controls on capital may increase the welfare of a society as it decreases the exposures of liquidity fluctuations. As a former opponent of capital controls, the IMF has started to support tax controls on capital mobility on certain occasions (Forbes, Fratzsher, Kostka and Straub, 2012). Moreover, the emerging market countries which welcome more hot money investments to their economy face more output volatility (Aizenman, Chinn, and Ito, 2010). In other words, the more external financing, the more experiences of financial turmoil. Therefore, the Turkish economy may use capital taxation to decrease the volatility of capital movements. Mo Pak-Hung (2008) developed the Mundel Fleming Model to alleviate the exposure of capital mobility and suggested a floating tax control which equals the market price of the capital inflow quota. This model can be a good example for further research on capital taxation.

As mentioned previously, the new structure of the CBRT may be ineffective on alleviating the risk that is accumulating because of the increasingly growing non-banking sector. Therefore, Röhn et al (2012) suggests temporary and "well-targeted capital controls" as a solution for the credit expansion risk of the non-financial corporate sector. The capital control can be applied on the segments by which risk exposure arises. For instance, if the portfolio investments expose high risk for financial stability, restrictions can be put directly on portfolio investments. Developing countries which have faced financial crises due to vulnerability to external shocks use these tools. For instance, during the financial crisis of 1998 Malaysia used capital controls. Kaplan and Rodrik (2001) assessed the performance of the Malaysian example of capital controls and concluded that the controls were successful in a fast recovery for the Malaysian economy from the crisis. Indian monetary policy arrangements in the crisis environment also suppressed the tradeoffs of macroeconomic quadrilemma and can be a good example for their Turkish counterparts. Mohan and Kapur (2009) summarized the monetary policy implementation as follows;

> …active management of the capital account, especially debt flows; within debt flows, tighter prudential restrictions on access of financial

intermediaries to external borrowings vis-a-vis non-financial corporate entities; flexibility in exchange rate movements but with capacity to intervene in times of excessive volatility along with appropriate sterilization of interventions; associated building up of adequate reserves; continuous development of financial markets in terms of participants and instruments; strengthening of the financial sector through prudential regulation while also enhancing competition; pre-emptive tightening of prudential norms in case of sectors witnessing very high credit growth; and refinements in the institutional framework for monetary policy.

Another example of using capital taxation was implemented in Brazil. In Brazil from 2006 to 2011 a tax control on portfolio investments was implemented (Forbes, Kostka, Straub and Fratzscher, 2012). Forbes, Kostka, Straub and Fratzscher (2012) empirically found that the tax control on capital flow significantly affected the portfolio investments to the country. One important note to be addressed here is that when Brazil increased its tax controls, investors by increasing their portfolio allocation to other countries, created exposure for them. Forbes, Kostka, Straub and Fratzscher (2012) called this the "thy in the neighbor effect". Therefore, if more countries adopt capital controls but not Turkey, the vulnerability of the economy due to capital mobility may increase as well.

Besides financial stability, and even before that, the inflation rate has always been a matter of concern for the Turkish economy. Therefore one of the main targets of the new policy mix is to control inflation rates. However, the instruments that are being used for financial stability may contradict the targeted level of inflation rates. As explained in detail in section 6.1, the CBRT uses an interest rate corridor. Nowadays the CBRT keeps the interest rate corridor as wide as possible in the aim of limiting credit expansions with the expectation that was mentioned in section 6.1. It was explained that the CBRT increases the uncertainty in the markets which in return increases the costs of crediting. On the other hand, creating such uncertainty may eventually harm the inflation targeting strategy of the CBRT as expectations are a core aspect to be affected in inflation targeting. Üçer (2011) points out the same problem by stating that the new structure will eventually cause a misunderstanding for some time between targets as the CBRT could not

maintain and stabilize its inflation rate targets. Therefore, because of the missignalings of the new policy mix, the inflation rate may not be reduced to targeted levels (Üçer, 2011). In other words, the CBRT by its effort on financial stability harms its own credibility and therefore its own inflation targeting strategy.   The solution that is suggested for this structural problem is an accompanying action by the BRSA to the CBRT. As is well known, the Financial Stability Committee (FSC) was established in June 2011 by the amendment in the Treasury Law (FSB-G20, 2012). The FSC consists of members from the Undersecretary of Treasury and the heads of the Central Bank of Republic of Turkey, Banking Regulation and Supervision Agency, Capital Markets Board and Saving Deposit Insurance Fund under the chairmanship of the Deputy Prime Minister for Economic and Financial Affairs who monitor the financial markets and decide on the use of macroprudential tools (FSB-G20, 2012). One important note that should be mentioned here is that the Financial Stability Committee was established while the structure of the member institutions remained the same, rather than integrating, and the statutory responsibility of each member lacks clarity and transparency.   On the other hand, if this committee uses effective regulations in a synchronized manner and without changing the monetary policy, the demand on the banking and non-banking sectors for external financing should be reduced.

BRSA's joint action to the macroprudential effort started in June 2011. BRSA increased the lending standards. BRSA should have joined the CBRT at the beginning of the financial stability program in December, rather than leaving the CBRT alone, and this was the main reason behind the significantly delayed outcomes of the program (Ocakverdi and Akcay, 2012).

Üçer (2011) also addresses the same solution by stating that the CBRT should have targeted the heated economy together with the BRSA and a more rigid fiscal policy would have helped rather than choosing this new policy mix. Additionally, we believe that the application of BASEL III standards will increase the rate of

financial globalization in Turkey. BASEL III standards will come up with the use of new financial instruments such as new swapping options and new international hedging and crediting options. As the financial integration to the global world increases, the vulnerability to external shocks will rise. Thus, the rigid regulation of the BRSA at the micro level should accompany the macroprudential tools that are used by the CBRT. In other words, the policy maker may renounce its administrative autonomy to maintain its financial stability and price stability goals with the continuation of foreign exchange rate stability targets. The Turkish economy seems to accept the dependency of the institution to the Treasury, which is under the control of the political authority because the Financial Stability Committee comes under the head of Treasury. Ersel (2012) criticizes this dependency by stating that this will create a lack of respect for the CBRT which in return will decrease the effectiveness of their monetary policy. We believe the joint action of BRSA and the CBRT is necessary for maintaining targets. The macroprudential level of decisions should be made by the CBRT as it monitors the overall economy on one hand, and on the other hand BRSA should implement the micro-level policies as it has the necessary direct instruments. Moreover, an independent institution with a lack of necessary instruments to maintain certain goals is not more respectable than an institution which acts jointly with other institutions and actualizes its targets.

Furthermore, some authors argue that the new monetary policy suffers from a lack of transparency due to the complexity of its arrangements. For instance, Röhn et al (2012) advises a stronger communication with the public to the CBRT as the multiple tasks of the new policy mix decreases the transparency of monetary policy.

To conclude, after a trial of inflation targeting the CBRT tried to stabilize the economy and minimize the destruction of the global financial crisis by implementing macroprudential measures. Experiencing the severe effects of the Global Financial Crisis, the Turkish policy makers have started to give more

importance to financial stability. The authorities saw the credit expansion and maturity mismatches of bank deposits and loans as main threats for financial stability. The CBRT received the responsibility to decrease the credit expansion and decrease the maturity mismatches and implemented its new monetary policy mix. In this chapter there were two interrelated arguments on the effectiveness of the new structure of monetary policy.

For the first argument, the macroeconomic quadrilemma framework was followed to assess the targets of the new policy mix. It was detailed that the desirable targets of the new policy mix are controversial by their nature. It was argued that foreign exchange rate stability in an environment where capital is mobile, the integration of the world economies which develops day by day and the inflation rate is a matter of concern, may not be solely sustained by the efforts of the CBRT. Second, the tools that the CBRT possess may not be efficient enough to attain its financial stability targets. To support this second argument firstly it was explained that the required reserve ratio may be bypassed by the banking sector as financial integration develops and the commercial banks may continue to expand crediting by covering the reserve requirements with swaps, foreign funds and CBRT repos. In the 2013 monetary policy and foreign exchange rate report of the CBRT it was declared that the required reserve ratio tool will change in the end of 2013 (CBRT, 2012). As details discussed in section 6.4.1, a new required leverage ratio will be calculated in the end of 2013. If a commercial banks use more leverage than the required ratio, it will be subject to a higher required reserve ratio. The required reserve ratio that is calculated by taking the off balance sheet transactions in to account will be applied. This declaration of the CBRT supports our argument on the ineffectiveness of the current version of required reserve ratio. However, we believe the off balance sheet transactions are too complex to measure. The new implementation of the required reserve ratio may necessitate a more rigid micro level auditing mechanism. Therefore, we believe a closer cooperation of the BRSA and the CBRT will be inevitable. Moreover it was explained that the growing non-banking sector may become another source of

vulnerability. Therefore, using the required reserve ratio may not be an effective solution to decrease the credit expansion of Turkey.

Furthermore, it was argued that although the interest rate corridor system is a strong instrument, there may be deficiencies in using the corridor rates. It was argued that to have a meaningful corridor system the CBRT should supply the necessary liquidity to the system. Therefore, the banks may use this liquidity to give credits in case of a match between maturities. Additionally, it was explained that the uncertainty created by widening the corridor to increase the cost of credits to commercial banks may also worsen the expectations and therefore may harm the inflation rate targets of the new policy mix.

Following the discussion on the possible challenges, we have suggested two solutions for the deficiencies of the new monetary policy structure of the CBRT in section 6.1. The new monetary policy mix may not be effective in alleviating the risk of capital flow volatility. Therefore, using a tax control on capital inflow on urgent occasions may be a sustainable solution for financial stability. The experiences of capital taxation which have been implemented in other developing countries such as India, Brazil, and Malaysia could be good examples for further policy decisions. The second suggestion of this chapter is a well defined joint action of the CBRT and the BRSA. As the BRSA has the necessary tools to be effective in micro level and the CBRT has the ability to make decisions at the macro level, a well defined joint action would offer substantial solutions. Although the Financial Stability Committee could be seen as a step towards joint action, the statutory responsibility of its members were not defined. Therefore to mark a path on monetary policy and to clarify the policy implementations more transparently there is still room for further improvement.

CHAPTER 7

CONCLUSIONS

The main purposes of this study were to summarize the evolution of modern central banking in general, to assess the past practices of the CBRT in particular and to elaborate on the current monetary policy structure of the CBRT. Besides the economic and political conditions of a certain period, we believe that past experiences also influence the future implications of monetary policy. Thus, the Chapter 2 was prepared to summarize the dominated ideas and the experiences of central banks around the world. The Chapter 3 was arranged to explain how the functioning and understanding of monetary policy evolved in the history of Republic of Turkey. Briefly, after the closed economy period in which the CBRT mainly functioned as the banker of the state, the Turkish economy got through tough transformations. This eventually influenced the understanding of monetary policy in Turkey. The liberalization of trade and financial system and shift to export oriented economy targets from import substitution strategies were important cornerstones of the period. The independence of central banking and reduction of direct controls were important fields of research in the 1980s' mainstream macroeconomic theory discussions. Therefore the liberalization movement in the Turkish economy was parallel to the worldwide trend. Additionally, a series of changes in the Law of the CBRT were enacted and the CBRT was authorized to function as a central bank in modern meaning. During

the 1980s, the CBRT published its first five-year plan and implemented a monetary targeting program. However, it will not be wrong to state that there was a fiscal dominance on the monetary sphere during this period. One can observe that the usage of CBRT reserves to finance the budget deficits continued in the period from 1980 to 2001 which was one of the reasons behind the chronic high inflation problem in Turkey. The political instabilities and effects of the Gulf Crisis of 1991 heavily influenced the monetary aggregates during the 1990s. One of the severe results of high inflation rate problem was the high dollarization in the country. Therefore, in the first half of the 1990s, the CBRT rather than announcing its program tried to maintain foreign exchange rate stability. The banking sector was heavily fragile, the economy was deeply dependent to external borrowing and budget deficits created a big burden on the economy. The CBRT could not prevent the speculative attacks on the foreign exchange reserves as they were seen as the only safe haven in domestic financial markets. As a result, the Turkish economy experienced an economic crisis in 1994. In the second half of the 1990s the CBRT got through reactionary policy implementations mainly for maintaining foreign exchange rate stability. Joining in the Customs Union, the end of standby agreement with the IMF, and the early elections of the 1995 were the main causes of fluctuations in foreign exchange rates during this period. As the crisis revealed, the banking sector was highly fragile. To catch up with the European Union standards and to strengthen the auditing mechanism, the BRSA was established in 1999. Meanwhile, the CBRT made another reactionary policy shift to find a panacea for the economic problems in 2000. An exchange rate targeting program was implemented for one and a half years. The exchange rates were declared in advance during this period. As summarized at the end of Chapter 3, there were important structural problems with this IMF supported program and the banking sector was heavily vulnerable to speculative attacks. Indeed, the exchange rate targeting program collapsed and Turkey experienced the 2001 Banking Sector Crisis. As a response to the crisis, the CBRT adopted a floating exchange rate regime in 2001. Additionally, the BRSA put a transformation program for the banking sector into action within the same year. The targets of the transformation

program were to reconstruct the public banks, to resolve the banks with bad balance sheets, to strengthen the private banks financial stance and to increase the depth of auditing on banking system. Meanwhile, the CBRT made another reactionary policy shift decision and started to implement inflation targeting. Henceforth, Chapter 4 was written to explain the theory of inflation targeting and the Turkish experience with the inflation targeting. As well known, the inflation targeting programs use short term interest rates as the main tool to influence the economy. According to the proponents of inflation targeting regimes, an inflation targeter while conducting inflation targeting by short term interest rates should satisfy four important conditions. These conditions are transparency, credibility, institutional commitment to the target and accountability.

Second, the inflation targeting experience of the CBRT was explained and a short assessment of the period was placed in Chapter 4. The inflation targeting period of the CBRT was evaluated by using some macroeconomic indicators. We concluded that within this period, although there was an important progress in the economy, some important problems still existed. These problems can be summarized as jobless growth, dependency to external borrowing, vulnerability to external shocks, high current account deficit and unrealized point inflation targets. In the summer of 2008, while the CBRT was implementing the inflation targeting program, the Global Financial Crisis hit the Turkish markets. Thus, Chapter 4 followed with the affect of the crisis and the precautionary measures taken by the CBRT and BRSA to the crisis. The CBRT responded to the crisis by using various macroprudential tools. We argued that although the timing of the CBRT was controversial, the responses to the effects of the crisis were sufficient. After having positive growth rates, the CBRT declared an exit strategy from the crisis in April 2010. The details of this going to normal strategy were described in section 4.6. According to the exit strategy, the direct measures were planned to be removed gradually in two folds. However, the CBRT decided not to apply to the program at all and continued to use the macroprudential tools. The reasons of this reversal were explained in section 4.6. It was argued that, the experiences of the

CBRT in the inflation targeting period and the economic conditions of both during and after the Global Financial Crisis have shaped the structure of the new policy mix. Afterwards, the CBRT announced its new monetary policy structure which can be accepted as another reactionary policy shift at the end of 2010. The CBRT put financial stability besides price stability for the first time in its history with this new policy mix. The tools and the theory behind this new policy were described in Chapter 5. According to the definition of the CBRT (2010) financial stability is to maintain use of more equity capital, more prudent borrowing and longer maturities for borrowing, strong foreign exchange rate position and more effective risk management. We argued that although the CBRT did not explicitly mention about its concerns with the imbalance of current accounts, a high current account deficit combined with dependency to external borrowing is also believed to be detrimental for financial stability. We believe that, the new structure of monetary policy added new challenges to the existing ones which draw up the purpose of this study. Therefore, in Chapter 6, we focused on the possible deficiencies of the new monetary policy structure. Two interrelated arguments criticizing the current structure were put forward. We argued that the new policy mix may not achieve its all targets at the same time in an open economy where capital is mobile, foreign exchange rate stability, financial stability and inflation rate are matters of concern. Second, we argued that the portfolio of tools that the CBRT currently possess may not be sufficiently effective in achieving all its targets. To support the arguments the theory behind "macroeconomic quadrilemma" was explained (Aizenman, 2011). First the classical macroeconomic trilemma theory was explained and we described that the macroeconomic trilemma tradeoffs still exist in countries where the foreign exchange rate stability programs are being implemented. Afterwards, we showed that, the macroeconomic trilemma discussions have evolved by the addition of financial stability concerns. We followed the "macroeconomic quadrilemma" framework and showed that the CBRT may experience with a tradeoff in its arguments and should forgo one of the targets (Aizenman, 2011). As opposed to the theory, we argued that the high foreign exchange rate reserves may not be a sustainable panacea for the foreign exchange rate stability. As well

known, majority of the developing countries including Turkey, are implementing floating exchange rate regimes and intervening in markets in certain occasions by holding high foreign exchange reserves. Having high foreign exchange rate reserves may not sustain foreign exchange rate stability in open economies. As the reserves are limited and as the capital may outflow pretty quickly from the markets in open economies, if a speculative attack persists long enough, the reserves of central banks could not escape from reduction. Moreover, as high reserves are thought to be signals of a strong economy, the high reserves themselves may be source of vulnerability by welcoming more short term capital to the country.

For the second argument of this chapter, the ineffectiveness of the tool portfolio of the CBRT was described theoretically. We argued that, required reserve ratio and interest rate corridor may not be efficient enough to attain the desired goals alone. We explained that the CBRT does not have a direct tool to decrease the credit expansion, tries to influence the banking sector indirectly by using the required reserve ratio. By increasing the required reserves, the CBRT tries to increase the cost of crediting to the commercial banks. However, there are various ways of bypassing the reserve requirements. We explained that the commercial banks may bypass the reserve requirement through off balance sheet transactions. To support our argument we showed that there is an increasing trend in the volume of off balance sheet transactions. In its 2013 monetary policy and foreign exchange rate report, the CBRT announced that it will introduce a new required leverage ratio. The ratio will calculate the total actives to sum of total passives and off balance sheet transactions (CBRT, 2012). We believe being aware of the fact that the usage of required reserve ratio is ineffective in credit expansion of the commercial banks, the CBRT announced this new leverage ratio. The new ratio enables that, if a commercial bank uses more leverage than supposed to be, it will be subject to a higher required reserve ratio. This new implementation will be active at the end of 2013. Therefore, the CBRT attends to control the commercial banks' off balance sheet activities as well as balance sheet items which supports our argument.

However, we believe the off balance sheet activities are very complex to measure. Additionally the BASEL III will bring more complex financial instruments to the Turkish financial markets and it will require a careful micro-level auditing mechanism. Henceforth we believe a closer cooperation of the BRSA and the CBRT will be inevitable in the future. Moreover, it was explained that the growing non-banking sector may become another source of vulnerability. To support our argument we showed the rate of growth in the non-banking sector and concluded that the significant growth in the non-banking sector may be an important source of vulnerability unless it is strictly monitored by the auditing mechanism. Besides the usage of required reserve ratio for the financial stability concerns, the CBRT uses interest rate corridor for liquidity management. We described that the interest rate corridor is meaningful only if the market rates fluctuate within the bands. Therefore, the CBRT should supply the necessary liquidity to the system to maintain this prerequisite. We argued that in case of a match between the maturities the commercial banks may use this liquidity to continue their crediting behavior.

Additionally, one may observe that the CBRT is widening the corridor between lending and borrowing rates to create an uncertainty within the market. This uncertainty is believed to decrease the credit expansion as it will increase the cost of risk exposures in credit calculations. On the other hand, this implication by worsening the expectations may cause an upward pressure on inflation rates. Thus, the CBRT while conducting a financial stability policy may harm the price stability in the economy. Although it's too soon to see the real effects of the new policy mix by strong empirical evidences, we supported our idea by recently announced inflation rates and showed that there was no significant progress in the distribution of credit maturities as well. At the end of Chapter 6, we proposed some possible solutions to the problems that were discussed. First we proposed that, if financial stability, foreign exchange rate stability and inflation rate will be matters of concern, then capital taxation system will reduce the volatilities in capital flows. The experiences of capital taxation systems which have been

implemented in other developing countries such as India, Brazil, and Malaysia could be good examples for further policy decisions. Our second proposal was a more comprehensive and well defined joint action of the BRSA and CBRT. We believe the tool portfolio of the CBRT is ineffective in decreasing the credit expansion of the banking sector. The BRSA possesses more direct controls over commercial banks and has the power to monitor the commercial banks at the micro level whereas; the CBRT has the ability to make decisions at the macro level. Henceforth, we proposed that to maintain financial stability besides price stability, a closer cooperation of the BRSA and the CBRT would be valuable. Although the Financial Stability Committee could be seen as a step towards joint action, the statutory responsibility of its members were not defined. Therefore to mark a path on monetary policy and to clarify the policy implementations more transparently there is still room for further improvement. We believe, if the policy makers persist in this current monetary policy framework alone, the future may witness several turmoils stemming from the nature of macroeconomic tradeoffs.

Finally, a number of important limitations need to be considered. First, as the CBRT newly started to implement the new monetary policy framework, there is no enough data for evaluation. Henceforth, it is too soon to find strong empirical evidence on our arguments. An econometric analysis on the existence of the quadrilemma tradeoffs will be valuable.

Second, as the preparations for the BASEL III standard continue, considerably more work will need to be done to determine the effects of the new financial instruments and the growing non-banking sector in the financial markets.

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APPENDIX A

A THEORETICAL BACKGROUND ON INFLATION TARGETING

Inflation targeting can be described as using an inflation rate as an anchor for the economy to manage expectations through monetary policy. The main tool to implement inflation targeting is short term interest rates.

It is important to have a good understanding of monetary transition mechanisms to understand the rationale behind inflation targeting. Theoretically, inflation targeting regimes affect the economy through four different channels namely; the interest rate channel, credit channel, exchange rate channel and asset prices channel.

- Interest Rate Channel: The basic assumption on the effectiveness of this channel is that prices cannot be adjusted to the short term nominal policy rates which will lead to changes in the short term real interest rates. For instance, a contractionary monetary policy leads to an increase in the interest rates, which in turn raises the cost of capital and causes a decline in investment spending, which as a result, decreases the output. These higher real interest rates lead to a decline in fixed business investments and inventory investments as well as residential housing investments and the consumption of durables (Mishkin, 1995). Additionally, as long term interest rates are the sequences of short term rates, long term interest rates will also assumed to be affected by the changes in short term policy rates. The changes in the real interest rates will then lead to changes in the expectations of the economic agents. Therefore, the investment and

consumption behavior in the economy adjusts, which results in changes in the inflation rate.

- Credit Channel: The assumption on the effectiveness of this channel is that the changes in the short term policy rates directly affect the commercial banks, as the central bank is the lender of last resort for the commercial banks. Banks, as intermediaries between lenders and borrowers, play a special role in the financial system as they reduce the asymmetric information problem. Small firms and households are especially closely tied to financial banks. Therefore, the monetary policy impact on bank reserves is an important aspect of the economic response to policy.

For instance, as the central bank increases the policy rate, it becomes costly to give credits to the commercial banks. The commercial banks are assumed to reflect this cost to the credits that they give. Therefore, an increase in the short term policy rate will lead to a contraction in the crediting behavior of commercial banks.

The monetary policy also affects the real economy through credit channels due to its influence on external finance premiums[22] (Bernanke and Gertler, 1995). A contractionary monetary policy decreases bank reserves and bank deposits and thus decreases the number of bank loans. As it is then more costly to borrow, investment spending will decline. As investment spending declines, aggregate output will contract. Erdoğan and Beşballi (2009) argue that the functioning of the bank lending channel depends on two conditions. There should not be a perfect substitution between bank credits and securities or any other financial instrument. In the case of perfect substitution, against a contractionary monetary policy, banks will sell their securities or other financial instruments rather than changing their crediting behavior, as they are perfect substitutes. Therefore, they can

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[22] External finance premium is defined as "the difference in cost between funds raised externally (by issuing equity or debt) and funds generated internally (by retaining earnings)" (Bernanke and Gertler, 1995:28).

prevent the liquidity absorption function of contractionary monetary policy.

- Asset Prices Channel: The asset prices channel works through fluctuations in asset prices. An increase in policy rates makes equity prices, such as real estate and financial asset prices, less attractive compared to bonds. Therefore a fall in asset prices affects aggregate demand in two ways; as the long term interest rates increase the financial wealth of the society will decrease which leads to less consumption. Secondly, the lower values of financial assets will reduce the wealth of firms and decrease investment demand.

- Exchange Rate Channel: The exchange rate channel works in a flexible exchange rate regime. An increase in the policy rate causes an increase in the demand for domestic currency as holding the money in domestic currency yields more than foreign exchanges if and only if the expectations on the valuation of the exchange rates are parallel.

APPENDIX B

TEZ FOTOKOPİSİ İZİN FORMU

<u>**ENSTİTÜ**</u>

Fen Bilimleri Enstitüsü	☐
Sosyal Bilimler Enstitüsü	■
Uygulamalı Matematik Enstitüsü	☐
Enformatik Enstitüsü	☐
Deniz Bilimleri Enstitüsü	☐

<u>**YAZARIN**</u>

Soyadı : Şenyarar Bayrak
Adı   : İpek
Bölümü : İktisat

<u>**TEZİN ADI**</u> (İngilizce) : An Assessment Of The Policy Shifts Of The Turkish Central Banking Since 2001

<u>**TEZİN TÜRÜ**</u> : Yüksek Lisans ■   Doktora ☐

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir. ■

2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. ☐

3. Tezimden bir bir (1) yıl süreyle fotokopi alınamaz. ☐

<u>**TEZİN KÜTÜPHANEYE TESLİM TARİHİ:**</u>