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Learning to Live with the Float: Turkey's Experience 2001-2003

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Abstract

The conduct of policy under floating exchange rates is becoming an increasingly important concern for developing countries. The challenge facing the central banks is to contain the volatility of the exchange rate while achieving low inflation and stimulating output growth. As a complement, the governments must implement sound policies to bring the fiscal and legal environments close to those of the advanced economies so as to enhance long-term economic growth. One recent example of an emerging economy that confronts this challenge is Turkey with a history of high inflation and a collapse of a fixed exchange rate based stabilization program that resulted in a market-forced devaluation. After a review of the literature, this chapter analyzes the developments in the foreign exchange market in Turkey in light of the Central Bank's policies during the floating exchange rate system between February 2001 - November 2003. The results indicate that the Central Bank had been successful in containing volatility and reducing the average inflation rate. However, the accumulated risks in the economy, such as the extreme appreciation of the currency and high real interest rates make the system vulnerable to adverse shocks.

Key Words: Exchange rate systems, emerging markets, financial volatility

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1 Introduction

The choice of an exchange rate regime under free capital mobility has become an important concern for the emerging market economies. The Asian crisis in 1997-1998 and the turmoil in Brazil, Russia, Turkey and Argentina afterwards have played a crucial part in raising this question. Furthermore, the increasing degree of globalization has sped up the international integration of capital markets, augmenting the difficulty of policy conduct for the developing economies.

The crises in the international capital markets that had affected the emerging economies since the last decade of the twentieth century had adverse impacts especially on the countries that have some form of pegged exchange rate regimes. Since then, the policy discussions on the choice of exchange rate regimes have been in favor of corner solutions, namely hard pegs and free floats. The intermediate regimes, or soft pegs, have lost their attractiveness to a certain extent. Tavlas (2003) argues that the increase in the international flows of capital is the factor that made the management of exchange rate difficult. In addition, the unpredictable reversal of capital flows and contagion as the other two sources besides the expansion of capital flows that had led to the departure from the intermediate foreign exchange rate regimes.

Even if a country declares that the exchange rate regime is a “free float”, it should be expected that the country will not remain indifferent to wide fluctuations in the exchange rates, a behavior which Calvo and Reinhart (2002) call the “fear of floating.” Fischer (2001) argues that the “fear of floating” is understandable. He points out that although the soft pegs are unsustainable for countries that experience high capital mobility, there still exists a range of flexible exchange rate arrangements. The excluded arrangements from his “acceptable regimes” are certain forms of fixed, adjustable peg, and narrow band exchange

rate systems. In these excluded regimes, the government is committed to defending a particular value of the exchange rate, or a narrow range of exchange rates without any required institutional commitment, although the country is open to international capital flows. Thus, free and managed floats, as well as currency unions, currency boards, and dollarization (or Euroization) are acceptable in this “bipolar view” as long as the country backs the system with necessary institutional changes. On the other hand, as the recent Argentine experience shows, the absence of mechanisms other than the nominal exchange rate to create flexibility in the system to absorb negative shocks can lead to a severe crisis under a currency board.

The majority of the emerging market economies still suffer the “fear of floating” although the consensus is that soft pegs are not sustainable for a long period of time, and hard pegs have harmful effects on economic performance when there is lack of sufficient flexibility. The question, then, is the following: Is it possible for an emerging economy to conduct a monetary policy to contain the volatility in the exchange rate and to achieve success in lowering (and/or controlling) inflation and in enhancing output growth under a floating exchange rate regime?

In order to provide a partial answer to this question from an emerging country experience, this chapter analyzes the developments in the foreign exchange market in light of the Central Bank’s policies during the floating exchange rate system in Turkey between February 2001 and November 2003. The main finding is that the Central Bank had been successful in containing volatility and reducing the average inflation rate while there was a surge in output growth. However, the accumulated risks in the economy, such as the extreme appreciation of the currency and high real interest rates makes the country vulnerable to adverse shocks.

The rest of this chapter is organized as follows. The next section reviews the exchange

rate regimes and policies, and discusses the implications for the emerging market economies. The third section provides an account of the recent experiences of the Turkish economy. The empirical analysis is presented in Section 4. Section 5 concludes.

2 Exchange Rate Regimes and Policy in Emerging Market Economies

The volatility of the exchange rate is a crucial issue for an emerging economy due to liability dollarization and the sensitivity of domestic prices to fluctuations in the exchange rate. It has important implications on domestic prices and the inflation rate, interest rates, and investment. Thus, containing the volatility of the exchange rate is a crucial aspect of enhancing stability, and the choice of the exchange rate system is a critical issue in this respect.¹

Exchange rate regimes range from free floats to hard pegs, of which free floats put no restrictions on monetary policy but has the problem of volatility while hard pegs reduce the damages of volatility at the expense of the abandonment of monetary policy as a tool. Soft pegs lie between these two extreme cases, and have served as a tool for stabilization in developing economies. Thus, there is a trade-off between exchange rate volatility and the ability to use monetary policy. For expositional purposes, a summary of the types of exchange rate systems are summarized below.^{2,3}

¹See Minella *et al.* (2003) for a recent account of monetary policy under exchange rate volatility in Brazil. Calderon and Schmidt-Hebbel (2003) provide an analysis of macroeconomic policies in Latin America. Both studies stress the importance of the credibility of the Central Banks in inflation targeting, exchange rate volatility, and the ability to conduct counter-cyclical policies.

²For more details, see Tavlas (2003) who provides a review of exchange rate regimes. His summary emphasizes the choice of an exchange rate regime for an emerging economy. He suggests inflation targeting along with managed float for emerging market economies.

³The country examples for each type of exchange rate system are taken from Bubula and Otker-Robe (2002) who use the recent IMF de facto classification of exchange rates (in effect since 1998) to compile

- *Free Float* Under a free float regime, the value of the exchange rate is determined by the demand and supply in the market, and the monetary authority does not intervene for the purpose of affecting the value of the exchange rate. Thus, the exchange rate does not restrict macroeconomic policies. Australia, Canada, Chile, Colombia, Japan, the United Kingdom, and the United States are examples of countries using free float.
- *Managed Float* Other than the intervention of the monetary authority to contain volatility or to correct the long run misalignment of the exchange rate, there is no specific exchange rate target, and macroeconomic policies are not restricted that much by efforts to set the value of the exchange rate. Algeria had a managed float as of the end of 2001.
- *Soft Pegs* Under a soft peg, there is a particular exchange rate target, and the monetary authority conducts policy to achieve it. Types of soft pegs include adjustable pegs where the target rate might seldom be altered if the target differs from the equilibrium exchange rate and capital controls are used to support the system, and crawling pegs where there is a set path for the exchange rate and the target rate is adjusted frequently. Bolivia, Costa Rica and Israel were among the countries that had some form of a soft peg by the end of 2001.
- *Fixed Exchange Rates* Under a fixed exchange rate system, the monetary authority fixes the value of the domestic currency against a foreign currency or a basket of foreign currencies. Malaysia adopted a fixed exchange rate regime in 1998.
- *Currency Boards* Under this system, which restricts the conduct of monetary policy,

historical data (pre-1998) for the classification of exchange rate systems. Before 1998, IMF classifications were based on official announcements by each country (de jure classification). The classification is as of the end of 2001.

the local currency is convertible to the anchor currency on demand at a preset (by law) fixed exchange rate, and this is guaranteed by backing the domestic monetary base with the foreign currency. In Argentina, a currency board system was in effect between 1991-2002.

- *Dollarization (or Euroization)* The country adopts US dollars (or euros) as the official currency. The examples of countries that have adopted US dollars as their official currency include Panama, Ecuador, and El Salvador.
- *Monetary Union* This is an agreement by a group of countries to adopt a common currency and to have a common central bank to conduct monetary policy for the whole group. Monetary policy can no longer be used for the needs of individual members of the group. The Euro area is an example of a monetary union.

The choice of an exchange rate regime has long been a concern for economists. See, for example, Mundell (1961), McKinnon (1963), and Kenen (1969). Obstfeld and Rogoff (1995) argue that a fixed exchange rate has costs in terms of developing and maintaining credibility, and that the exchange rate should not be the target of the monetary policy, but rather can be used as an indicator. The alternative to fixed exchange rates as a tool for reducing inflation and exchange rate volatility is to establish sound monetary institutions. Reinhart (2000) and Calvo and Reinhart (2002) state that although there seems to be an observed shift in the world toward floating exchange rate regimes, the “fear of floating” is pervasive, and in practice, except for a few developed nations, the countries do conduct policies to affect their exchange rates.

Most emerging market economies are characterized by economic problems including high inflation, and current account deficits. The majority of the domestic debt in these countries is denominated in terms of a foreign currency (usually the US dollar), elevating

the importance of having a stable exchange rate. In addition, there is evidence that the pass-through from exchange rates to prices is higher in emerging economies (Calvo and Reinhart, 2001). Thus, some form of a peg appears to be the most attractive exchange rate regime. Furthermore, by restricting the use of monetary policy, pegged regimes have been used as a tool in developing countries to enhance the credibility of the monetary authority in stabilizing the economy.

Until recently, soft pegs were desirable, and were widely adopted by the developing economies, in many cases as a part of a stabilization program. The crises of the last decade and a half, however, resulted in a departure away from pegged exchange rates, which is basically attributable to the increased integration of the international capital markets. The concept of the “impossible (or unholy) trinity” provides an explanation for this phenomenon. This concept states that it is impossible for a country to have fixed exchange rates, capital mobility, and monetary policy as a tool for domestic goals at the same time. Soft pegs can be thought of as a means for having fixed exchange rates and domestic monetary policy for a country with capital mobility (Fischer, 2001). However, in a world with increased openness of capital accounts, responding to domestic and external shocks that shift the equilibrium exchange rate has become increasingly difficult, and such countries have been objects of speculative attacks. The Asian crisis of the 1997-1998 is the major example of this phenomenon when Malaysia imposed capital controls in order to control the exchange rate. But, although capital controls under such situations can provide some short term relief, they are ineffective in the long term.

The preference for the pegged systems by the developing economies stems from the idea that pegged systems implicitly call for fiscal discipline under capital mobility, since bad policies by the government would lead to the worsening of the external balance, eventually forcing the abandoning of the peg. In practice, however, this fiscal discipline is not observed

since the eventual outcome, devaluation, may come long afterwards leaving the authorities very little incentive to take the necessary fiscal measures. As put forth by Tornell and Velasco (2000), flexible exchange rate regimes, on the other hand, provide an incentive for the authorities to enhance fiscal discipline since the costs of bad policies are immediate. Examples of crises due to insufficient fiscal discipline under pegged systems include the Mexican crisis of 1994, the Asian crisis of 1997, the Brazilian crisis of 1999 and the Turkish crisis of 2001. Argentina can also be included in this list since one of the major reasons for the collapse of the currency board regime was the lack of fiscal discipline in local governments.

The case against the currency boards was demonstrated by the dramatic collapse of the Argentine economy in 2001. While labor market rigidity and lack of fiscal discipline were the two main factors contributing to this collapse, perhaps the most important reason was the wrong choice for the anchor currency that led to the loss of international competitiveness. The lesson of the collapse of the Argentine currency board is that the use of a proper peg, fiscal sustainability, and credibility are crucial for success while over the long term maintaining the peg comes at high costs. Also, fiscal sustainability not only means reducing primary spending or raising taxes, but also conducting policies to correct the mismatch between debt composition and output composition in terms of tradables versus non-tradables.⁴

Eichengreen (2001) provides an account of the 2001 crises in Argentina and Turkey. Although Argentina and Turkey had differences in terms of the underlying inflation history, and the timing and the type of the exchange rate regime used in their stabilization programs (currency board in Argentina, crawling peg in Turkey), the two countries shared many aspects such as experiencing an extended period of depressed growth followed by a

⁴See Calvo *et al.* (2003) for more on the collapse of the Currency Board in Argentina. In addition to the points outlined in this paragraph, Calvo *et al.* (2003) emphasize the role of liability dollarization besides the smaller share of tradables in output relative to the share of non-tradables in the effects of a sudden stop of capital flows.

short-lived boom after the initiation of the stabilization program, increased exports and imports, need for capital inflows to finance the increased imports, and efforts to privatize the state enterprises, to strengthen the banking system and to balance public sector accounts. However, in both Argentina and Turkey, incomplete fiscal consolidation and lack of political support for reduced public spending still continued to be problems. In addition, the increase in domestic demand proved to be temporary, and once the problem of competitiveness that arose from the exchange rate anchor was added, financing the current account became difficult, and a one-time adjustment of the exchange rate was necessary to improve competitiveness. But, this would diminish the stability of the banking system in both countries as the banks had large foreign currency liabilities. Furthermore, it would hurt the credibility of the policy-makers. Thus, short-term foreign liabilities and rollover risk increased as maturities shortened. Both economies became vulnerable to deteriorating external conditions, and eventually were not able to avoid the crises.

According to Eichengreen (2001) there are eight lessons of the crises in Argentina and Turkey. First, exchange-rate based stabilizations are risky as exit from a peg is difficult. Second, the existence of large short-term debt creates fears of crisis. Third, debt swaps only delay the problems, they do not provide a solution. Fourth, fiscal stability requires reduced public spending, which in turn implies reduced aggregate demand and growth. The decline in growth decreases the tax base, and thus the tax revenues, worsening the fiscal position. Therefore, engineering fiscal consolidation while maintaining output growth is difficult. Fifth, under circumstances in which market-based solutions are not viable, it is not easy to overcome the problem of moral hazard in international lending, and thus the international financial institutions found themselves bailing out both countries in fears of a more widespread crisis. Sixth, in both countries, the governments adopted fiscal and financial reforms to catalyze private lending in the aftermath of the crises, and the international

financial institutions provided necessary funds in the meantime, until the markets react. However, market reaction was delayed as investors waited for evidence of commitment to stabilization policies. Seventh, as the Argentine case shows, there are limitations to private contingent lines since the collateral bonds were limited in supply as a result of the debt swap prior to the crisis. Thus, the governments may have a tendency to think it unlikely to ever be drawing those lines. Eighth, and last, it is difficult to get the private sector involved in the bail out as the market is unwilling to hold new claims after a crisis. Thus, Eichengreen (2001) claims that there is still much to be done in terms of formulating policies to prevent and to resolve the crises.

The common features of the crises that the emerging markets have experienced since the 1990s are the collapse of some form of pegged exchange rate regime and an accompanying sudden stop of capital inflows. These crises resulted in a sharp currency depreciation, a decline in the stock market, and contraction in output in the short run. Cespedes *et al.* (2000) model a small open economy that has liability dollarization,⁵ sticky wages, and where the net worth of domestic entrepreneurs play a crucial role in capital flows to the economy, and find that flexible exchange rates help the adjustment process in the immediate aftermath of a financial crisis which results in a large depreciation and sudden stop. A high degree of liability dollarization acts as a magnifier of external shocks through balance sheet effects, which diminishes the risk premium of the country and lead to the reversal of capital inflows. Allen *et al.* (2002) also consider the balance sheet effects of the emerging market crises, and discuss how liability dollarization can eventually trigger the crisis. They stress the importance of the maturity and the denomination of domestic debt, and claim that the solution to the problems of currency and maturity mismatches are limited.

⁵See Cespedes *et al.* (2000), Cavallo *et al.* (2002), Allen *et al.* (2002), Calvo *et al.* (2003) and the references therein for details on the magnifying effects of liability dollarization on the emerging market financial crises.

Cavallo *et al.* (2002) also model this phenomenon, and claim that the sudden stop of capital inflows and output contraction are related to the degree of liability dollarization in the economy. They find that the cause of the overshooting of the exchange rate is the existence of large foreign currency denominated debt stock and the need for hedging open foreign currency positions after the collapse of the peg. Exchange rate overshooting, together with large foreign currency debt create balance sheet effects and result in a decline in the stock market, leading to a contraction in output. Then, Cavallo *et al.* (2002) evaluate the cost of the crisis in a country with a high degree of liability dollarization. Exchange rate overshooting and the decline in the stock market force the investors to leave the economy. However, this induces further depreciation of the exchange rate and the fall in the stock market, creating a cycle which results in large, adverse wealth effects for the economy. Their findings indicate, contrary to the findings of Cespedes *et al.* (2000), that if the authorities maintain the peg for at least a temporary period in the immediate aftermath of the crisis, they can reduce overshooting and its negative wealth effects, but at the expense of additional output contractions in the short run. The mechanism that ensures this is the presence of margin constraints imposed on the domestic economy.

In order to analyze alternative exchange rate regimes and monetary policy options for an emerging market economy that experiences shocks to world interest rates and terms of trade, and is subject to risk premia in external financing, Devereux and Lane (2003) calibrate a model and find that financial distortions do not have a major impact on alternative policy options. They conclude that liability dollarization does not necessarily make fixed exchange rates desirable for macroeconomic stabilization, but the degree of pass-through in import prices has important consequences for price stabilization.

Mussa *et al.* (2000) consider the effects of increased capital mobility and integration of developing economies into world markets on the exchange rate regimes of the advanced

economies as well as of the developing and transition economies. For developing economies that are closely integrated to the world economy, they conclude that maintaining pegged exchange rates have become difficult, and more flexible exchange rate regimes have become more desirable. In order for an emerging market country to opt for a form of hard peg, it needs to have established institutional structures and sufficient policy discipline to support the peg.

Putting special emphasis on the Turkish experience, Alper and Yılmaz (2003) argue that the best choice for the exchange rate regime for a developing economy with capital mobility is a floating system, supporting the conclusions of Mussa *et al.* (2000). A floating system would provide immediate costs to the governments that do not undertake serious fiscal measures. In addition, Alper and Yılmaz (2003) claim that as the foreign exchange risk will be transferred to the investors from the Central Bank under a free float, this would reduce the volume of short term capital flows and reduce the risk of speculative attacks (see also the arguments put forth by Eichengreen and Hausmann (1999) below for reducing the moral hazard problem). Further, if there is significant dollarization in the economy, the depreciation of the domestic currency implies a redistribution with undesirable political consequences, forcing the government to achieve fiscal discipline.

The high degree of currency substitution is another problem inherent in emerging market economies which has important consequences for the conduct of monetary policy and the implementation of stabilization programs, as currency substitution makes the use of monetary policy more difficult in fighting inflation since the demand for domestic money becomes unstable. Selçuk (2003) provides empirical evidence that the degree of currency substitution in emerging economies in the European Union periphery is indeed high. Domaç and Bahmani-Oskooee (2002) study the effects of currency substitution on inflation dynamics in Turkey. They find that the higher the degree of currency substitution is, the lower

the monetary base will be, and thus, the fiscal authority needs to raise the administered prices in order to compensate for the decline in inflation tax. In the meantime, the domestic currency depreciates with the increases in the degree of currency substitution. Thus, the monetary authority would experience credibility problems more under a flexible exchange regime than it would under fixed exchange rates. In conclusion, Domaç and Bahmani-Oskooee (2002) indicate the emergence of inflation targeting as a suitable policy as it could limit the degree of currency substitution through leading to a higher exchange rate volatility than price volatility.

Eichengreen and Hausmann (1999) consider three problems that most emerging market economies suffer - moral hazard, original sin, and commitment problems - and examine the implications of exchange rate regimes in providing solutions to them. The bailing out of a troubled emerging market economy by the international financial institutions gives the investors incentives to take on excessive risks since they do not face the full risk of their investments. This creates moral hazard problem in international lending. Eichengreen and Hausmann (1999) argue that the solution is to require the private sector to share part of the burden of the bail-out. Pegged exchange rates in this case are undesirable as they reinforce the moral hazard problem, while flexible exchange rates are preferred as they limit short-term capital inflows.

The incompleteness in financial markets in emerging market countries may result in the inability of the country to borrow in terms of domestic currency in international markets and/or to borrow long-term domestically in terms of domestic currency. This “original sin” problem leads to currency mismatch where borrowing is in terms of foreign currency while revenues are in terms of domestic currency, and to maturity mismatch where liabilities are short-term and revenues are generated by long-term contracts. Eichengreen and Hausmann (1999) claim that dollarization (or euroization) is the best choice if original sin is the problem

because flexible exchange rates cause bankruptcies by increasing the degree of currency mismatch and hard pegs cause defaults on short-term debt by increasing the degree of maturity mismatch.

The third problem Eichengreen and Hausmann (1999) consider for emerging markets is the commitment problem, which arises due to weak institutions that address commitment issues. Financial transactions are not self-enforcing by nature of being intertemporal, and in order to ensure commitment and enforce financial contracts, the economy needs to strengthen its financial infrastructure. Eichengreen and Hausmann (1999) argue that, in this case, both flexible and fixed exchange rates would increase financial fragility. Thus, taking these three problems into consideration, they suggest two options for emerging market economies. The first option is to dollarize while the second is to build well-structured domestic markets in which long-term domestic currency denominated instruments are traded. The second option, they state, takes longer and is harder, and therefore, most emerging market economies may rather choose to dollarize.⁶

Whether emerging market economies should float and whether they should adopt inflation targeting is considered by Eichengreen (2002). Under inflation targeting, the primary goal of monetary policy is price stabilization, and this goal and the policy tools are openly communicated to the public. Once the commitment to stable prices is institutionalized, credibility of the monetary authority would improve, leaving it room for pursuing policy to achieve the target. Eichengreen (2002) concludes that inflation targeting is not infeasible but complicated for emerging markets due to openness, liability dollarization, and lack of credibility. Openness adds to the challenge as it makes the economy vulnerable to external shocks, and the presence of liability dollarization would lead the monetary authority to

⁶The conclusion of Eichengreen and Hausmann (1999) (supporting a form of hard peg) agrees with Calvo and Reinhart (2001) who suggest that some form of a peg is attractive for emerging economies.

refrain from movements in the exchange rate. However, when the economy is less open, the degree of liability dollarization is not very high, and credibility is easier to construct, inflation targeting would be attractive.

Domaç and Mendoza (2002) investigate whether the policy makers in emerging market economies should take into account the movements in exchange rates under inflation targeting. Although the primary goal under inflation targeting is the stability of prices, emerging economies would also be willing to contain the shocks to exchange rates in order to enhance stability. On the other hand, too much intervention in foreign exchange may alter inflation target as the primary goal. They suggest that policies aimed at containing the volatility of the exchange rate, but not affecting its level, can be useful under inflation targeting as they would reduce the adverse effects of exchange rate shocks on inflation and financial stability.

3 Turkish Economy: An Overview

This section provides an overview of the economic developments in Turkey, leading to the collapse of the most recent fixed exchange rate based stabilization program. The year 1980 had been the beginning of the period of liberalization and integration of the Turkish economy to the world economy. The structural change and reform plan of 1980 called for abandoning the barriers to trade, adopting export-led growth strategy, reducing the controls on foreign exchange, transition to the flexible exchange regime, lifting the controls on interest rates, easing bureaucracy, subsidizing foreign capital, and adopting price mechanism were among the main economic reforms introduced in this period. In the immediate aftermath of the implementation of this program, the economy experienced high output growth, low inflation and a healthy balance of payments situation.

The period since the late 1980s is characterized by increasing inflation and several stabi-

lization programs. Nominal anchoring and monetary tightening were used in these programs without any serious effort to reduce the public sector borrowing requirement. In 1989, the capital account was liberalized and high nominal interest rate and low depreciation rate were used to attract short term foreign capital to roll-over the public debt. By the end of 1993, the fiscal and external deficits were viewed by the market participants as no longer sustainable. These developments led to the crisis of April 1994. The stabilization program adopted after the crisis was not pursued vigorously and eventually abandoned (Ertuğrul and Selçuk, 2002).

The next stabilization attempt was in 1999 when the Russian crisis of 1998, the general elections and the earthquakes of 1999 deteriorated the fiscal balance. In December of 1999, a stand-by agreement was signed with the IMF with the crawling peg regime being the major disinflation tool.⁷ The initial phase of this program was successful in reducing the interest rates and slowing down inflation which in turn led to increased consumption of consumer durables. However, the overvaluation of the exchange rate and lower real interest rates led to increased imports of consumption goods as well as intermediate goods. Increased world oil prices and the depreciation of the euro against the US dollar were the developments in the international markets that had adverse effects on the trade balance.

On the fiscal side, the program failed to achieve its targets which led the IMF and the World Bank to postpone the release of funds in the second half of 2000. In the meantime, inefficiencies and increased risk in the banking sector resulted in increased interest rates and reduced confidence in the financial markets. The slow pace of the government in undertaking the necessary steps to solve the financial problems of the state-owned banks and to implement other reforms, the lack of consensus and action in terms of privatization, the record levels of the current account deficit due to appreciation and negative domestic

⁷The percentage change of the Turkish lira against a basket of euro and the US dollar was fixed.

real interest rates, the deterioration of relations between Turkey and the European Union, and political instability are among the factors that contributed in this reduced confidence. In addition, the history of unsuccessful stabilization programs made it more difficult for the authorities to build up credibility, and the inability to deal with the fundamental problems of the economy resulted in an erosion of credibility.

There was a short-lived crisis in November 2000 which started with the inability of a commercial bank with a risky position to borrow from the money market. In two days, the overnight interest rates increased while the international investors started to get out. In order not to give up the parity, the Central Bank had to use its reserves to meet the increased demand for foreign currency. Later, to restore confidence in the program, the Central Bank had announced that such an action would not be repeated. However this only increased the interest rates. In December 2000, the IMF supplied extra funds, which provided temporary relief. There was short-term capital inflow to the economy for a while, and the reserves of the Central Bank returned to their pre-crisis level. Nevertheless, there were still concerns about the developments in the economy. In the end, the adverse political developments of February 2001 triggered another crisis and led the Central Bank to finally abandon the parity.

This last crisis, on February 19, 2001, was triggered by domestic political issues and led to an 18% drop in the stock market and the loss of approximately one-third of the total official reserves of the Central Bank in one day (USD 7.5 billion). When the Central Bank refused to provide Turkish Lira (TRL) liquidity to the two state banks that were not able to meet their obligations or other banks the following day, the banks were forced to give up USD 6 billion foreign exchange buying contracts with the Central Bank. The daily average overnight interest rates shot up to (simple annual) 2000 percent on February

20, and 4000 percent on February 21.⁸ The government could not resist and dropped its exchange rate controls early February 22 and the TRY/USD exchange rate went up 40% in one week. Monthly inflation was 10% and 14% in March and April of 2001 respectively. The government prepared a new letter of intent to the IMF, emphasizing a major overhaul in the banking system and a promise of further acceleration of structural reforms outlined in the earlier letters of intent. On May 15, 2001, the IMF approved this revision of Turkey's three-year Stand-By arrangement by USD 8 billion with an understanding that the country moved into a floating exchange rate regime, and would stick to this policy.

Following the crisis, the challenge for the Central Bank was to re-establish confidence and contain volatility in financial markets while pursuing an implicit inflation targeting policy in a free floating exchange rate system. It was a challenge in the sense that the country had a long history of high inflation, and had never experienced a free float. Nominal exchange rates almost always increased in line with high inflation. The recent collapse of the fixed exchange rate based stabilization program further eroded the credibility of the Central Bank and led economic agents to think that any policy announcement by the authorities is not credible.⁹

4 Policy Under Floating Exchange Rate Regime in Turkey

In the aftermath of February 2001, the Central Bank of Turkey repeatedly stressed that it would stick to the floating exchange rate regime, and the volatility of the nominal exchange

⁸These are *weighted average* interest rates. The highest realized overnight interest rates during these two days were 2300 and 6200 percent (simple annual).

⁹Gençay and Selçuk (2001) provide an anecdotal story of the February 2001 crisis in Turkey. For a detailed account of the recent developments in the Turkish economy from different perspectives, see Ertuğrul and Selçuk (2002), Metin-Özcan *et al.* (2001), Öniş and Rubin (2003) and references therein. A series of articles in Kibritçioğlu *et al.* (2002) provides a detailed analysis of inflation dynamics and disinflation efforts in Turkey. For earlier studies, see Metin (1995) and Lim and Papi (1997). More recent studies are Celasun *et al.* (2003) and Domaç and Bahmani-Oskooee (2002).

rate will be a concern rather than its level or direction. Meanwhile, an implicit inflation targeting policy would be pursued by controlling the monetary aggregates and setting an indicative interest rate (CBT, 2002, 2003).

In order to control the volatility of the exchange rate, the Central Bank conducted several buying and selling auctions. During the early stages of the float, between March 29, 2001 and November 30, 2001, all interventions were in the form of selling auctions, and the Central Bank sold a sum of USD 6,553 million. All other episodes of preannounced interventions had been in the form of buying auctions, the first one running from April 4 through June 6, 2002, and the second which started on May 5, 2003 and ended on October 22, 2003. The total amount bought back in these auctions were USD 6,447.3 million. The Bank also directly intervened in the market four times between May 12 and July 18, 2003 buying USD 2,083 million.¹⁰ Thus, since the immediate aftermath of the float, the Central Bank had sold USD 6,553 million, and bought at least USD 8,530 million. One crucial aspect of the Central Bank policies since May 2003 is that, the level and the direction of the exchange rate seem to have become the target of the policies rather than its volatility, implying a possible deviation from the free float. There were arguments that recent buying auctions, along with two direct buying interventions in September 2003 were a response to the nominal (and real) appreciation of the Turkish lira during the float period.

In this part, we extend the analysis conducted by Selçuk (2004c), employing a larger sample size. In addition, we look at the developments in the foreign exchange market during two separate periods. In our analysis, a five variable VAR system is estimated using daily data in order to investigate the interaction among the exchange rate, its volatility, and the Central Bank policies. The variables in the system are the TRL/USD exchange rate return

¹⁰There were three direct interventions in 2002 (one buying and two selling). However, the amounts involved in these interventions as well as the amounts involved in two direct buying interventions in September 10-25, 2003 are not known.

	Return	Volatility	Interest Rate	Buying Auction	Selling Auction
Return	0.00	0.13	0.56	0.19	0.00
Volatility	0.00	0.00	0.00	0.46	0.00
Interest Rate	0.09	0.00	0.89	0.10	0.46
Buying Auction	0.89	0.95	0.25	0.00	1.00
Selling Auction	0.04	0.06	0.18	0.96	0.00

Table 1: Granger causality probabilities. Sample period: March 13, 2001 - October 30, 2003 (667 business days). The rows show equations. The reported probabilities are probabilities that the column variable does not Granger cause the row variable.

(log difference, percent), the absolute value of the exchange rate return as a measure of volatility (percent), the change in the Central Bank overnight interest rates (simple annual, percent), the daily total amount bought by the Central Bank in USD buying auctions and the amount sold by the Central Bank in USD selling auctions (million USD). To assess a possible change in the direction of the policy in recent months, the VAR system is estimated for the whole sample, between March 2001 and October 2003, and also for the two sub-samples, pre-May 2003 and post-May 2003, a possible break point reflecting an implicit change in exchange rate policy of the Central Bank.

The VAR model for the whole sample is estimated by using a constant term and 7 lags as indicated by Sims' Likelihood Ratio (LR) test (Sims, 1980) for the period between March 13, 2001 - October 30, 2003 (667 business days).¹¹ Adjusted R-squares lie between 0.04 (change in the interest rate equation) and 0.79 (buying auctions equation). The results of the Granger causality tests indicate that exchange rate return and selling auctions cause volatility of the exchange rate at 1% level of significance. Exchange rate return and selling auctions, and changes in the interest rate and volatility of the exchange rate exhibit feedback at 5% and 1% levels of significance respectively. See Table 1 for the results of Granger

¹¹We excluded the first 8 business days of the floating regime period to avoid any "start-off" effects. As shown by Selçuk (2004a), after a large shock in a financial market, the cumulative number of aftershocks increases at an exponential rate and converges after a certain period of time. These aftershocks, which are not part of the normal system, may cause some bias in our estimations if they are not excluded.

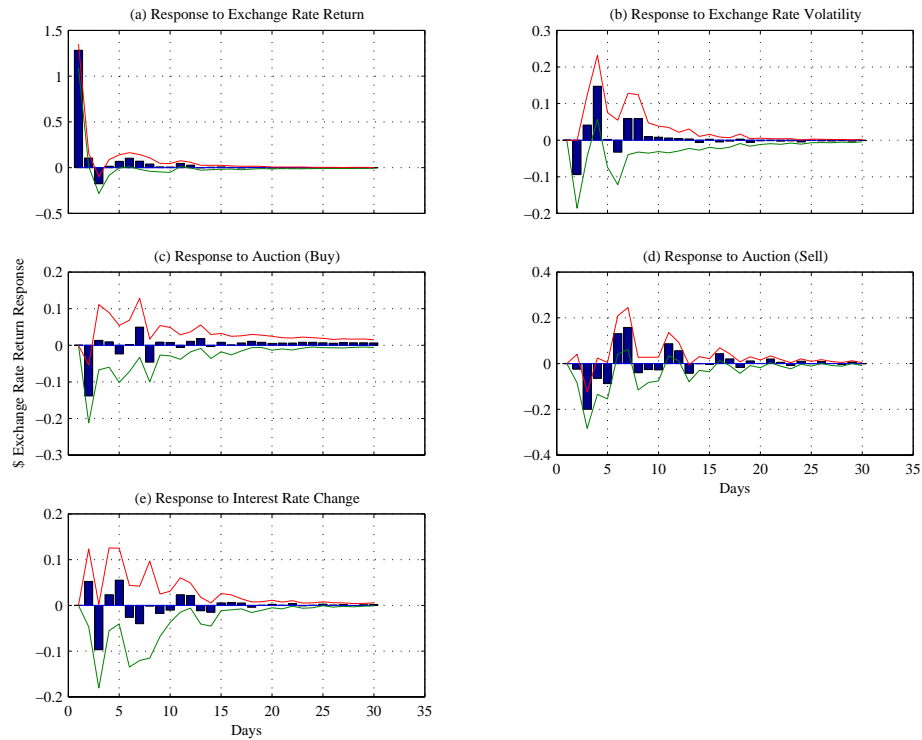


Figure 1: TRL/USD daily exchange rate return (log difference) response to shocks to different variables in the system. (a) Response to a shock (1.36 percent increase) in TRL/USD daily exchange rate return. (b) Response to a shock (1.06 percent increase) in TRL/USD daily volatility (absolute return). (c) Response to a shock (21 Million USD increase) in Central Bank USD buying auction. (d) Response to a shock (30 Million USD increase) in Central Bank selling auction. (e) Response to a shock (0.60 percent increase) in change in overnight interest rates. 95 percent bootstrap confidence intervals are plotted as straight lines. Sample period: March 13, 2001 - October 30, 2003 (667 business days).

causality tests.

Figure 1 plots the response of exchange rate return to shocks to different variables in the system, along with 95 percent bootstrap confidence intervals. Normally, one would expect the response of exchange rate return to shocks to Central Bank buying auctions to be positive since there is an increase in overall demand for the foreign currency. The results,

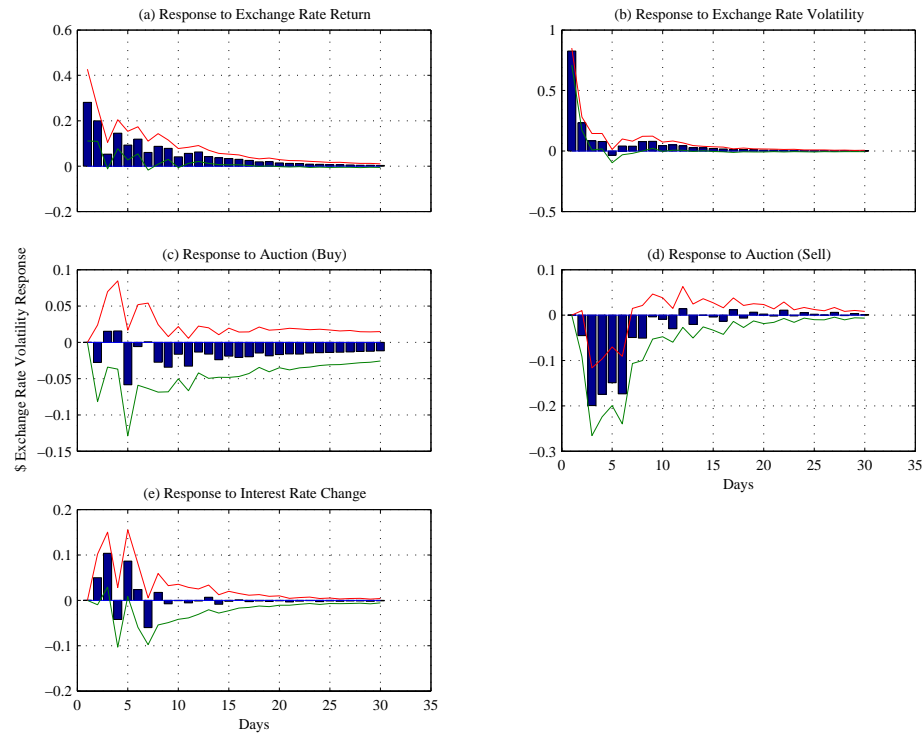


Figure 2: TRL/USD daily exchange rate volatility response to shocks to different variables in the system. (a) Response to a shock (1.36 percent increase) in TRL/USD daily exchange rate return. (b) Response to a shock (1.06 percent increase) in TRL/USD daily volatility (absolute return). (c) Response to a shock (21 Million USD increase) in Central Bank USD buying auction. (d) Response to a shock (30 million USD increase) in Central Bank selling auction. (e) Response to a shock (0.60 percent increase) in change in overnight interest rates. 95 percent bootstrap confidence intervals are plotted as straight lines. Sample period: March 13, 2001 - October 30, 2003 (667 business days).

however, indicate that this response is negative and statistically significant for one period. On the other hand, the response of the exchange rate return to a shock in selling auction is negative, as expected, for the first four periods. However, the response is reversed afterward and the overall response is very close to zero. The response of the exchange rate return to a shock to the change in interest rate is not statistically significant. Thus, it is possible to conclude that the Central Bank policies in the form of buying and selling auctions and

changes in interest rate did not influence the direction (log return) of the exchange rates. In passing, we also note that a shock to the volatility of the exchange rate does not have any effect on the exchange rate return.

The response of exchange rate volatility to different shocks in the system is plotted in Figure 2. Panel (a) shows that an unexpected increase in exchange rate return increases volatility, and this impact prevails for several periods. Notice that the symmetric nature of the impulse response function implies that a fall in the foreign exchange rate return reduces volatility. However, the symmetric response of volatility to the shocks to the exchange rate return is not warranted. In an asymmetric stochastic volatility framework, Selçuk (2004b) shows that there is strong positive correlation between the shocks to the foreign exchange rate return at time t and the shocks to volatility (defined as the standard deviation of the exchange rate return) at time $t + 1$ during the floating exchange rate system in Turkey. However, Selçuk (2004b) implies that the response of volatility is actually asymmetric: the same magnitude of shocks to the exchange rate return cause different effects on the volatility, depending on the sign of shocks.

Response of volatility to selling auction is negative and statistically significant, implying the Central Bank is able to reduce volatility through selling auctions while buying auctions do not seem to influence volatility. In addition, unexpected increases in the interest rate raise volatility, which makes it possible to say that unexpected interest rate cuts reduce the volatility of the exchange rate. These findings are in line with the Central Bank's argument that its policies are not aimed at the level or the direction of the exchange rate but rather the goal is to contain volatility.¹²

The period before May 2003 is also investigated by means of the same five variable VAR system. The system is estimated using 11 lags as indicated by the likelihood ratio tests.

¹²The full estimation results in this section are not reported. They are available from the authors.

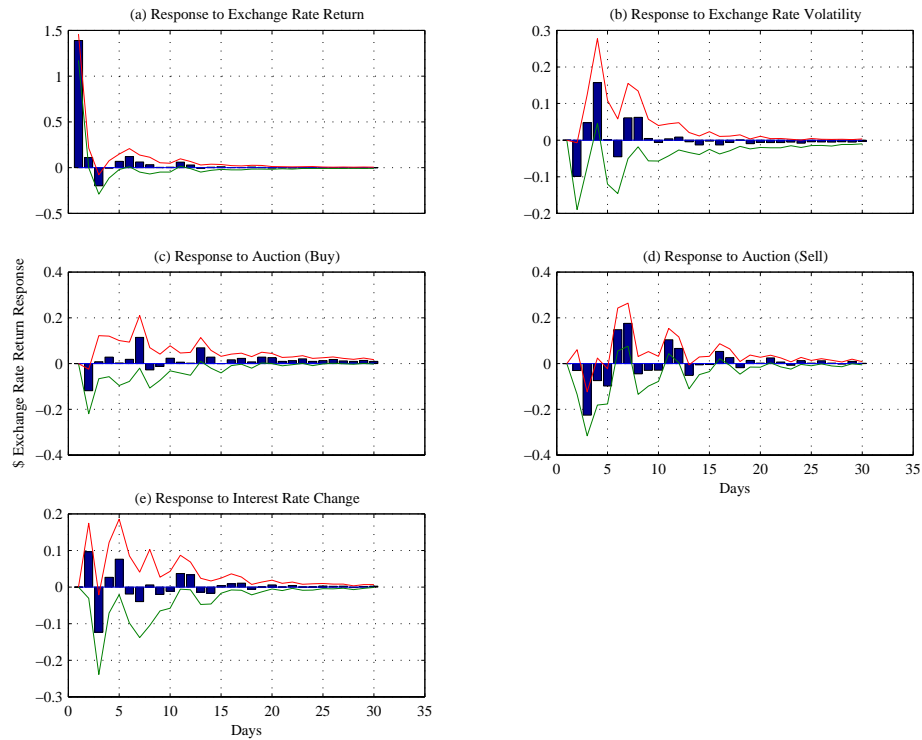


Figure 3: TRL/USD daily exchange rate return (log difference) response to shocks to different variables in the system. (a) Response to a shock (1.48 percent increase) in TRL/USD daily exchange rate return. (b) Response to a shock (1.15 percent increase) in TRL/USD daily volatility (absolute return). (c) Response to a shock in Central Bank USD buying (6 Million USD increase) auction. (d) Response to a shock (33 Million USD increase) in Central Bank selling auction. (e) Response to a shock (0.60 percent increase) in change in overnight interest rates. 95 percent bootstrap confidence intervals are plotted as straight lines. Sample period: March 13, 2001 - April 30, 2003 (538 business days).

Adjusted R-squares for this system lie in the range of 0.03, for the change in the interest rate equation, and 0.45, for selling auctions equation. Granger causality tests indicate that, as in the previous case, exchange rate return and selling auctions cause volatility of the exchange rate at 1% level of significance. Changes in the interest rate and volatility exhibit feedback at 1% level of significance. However, the feedback between selling auctions and

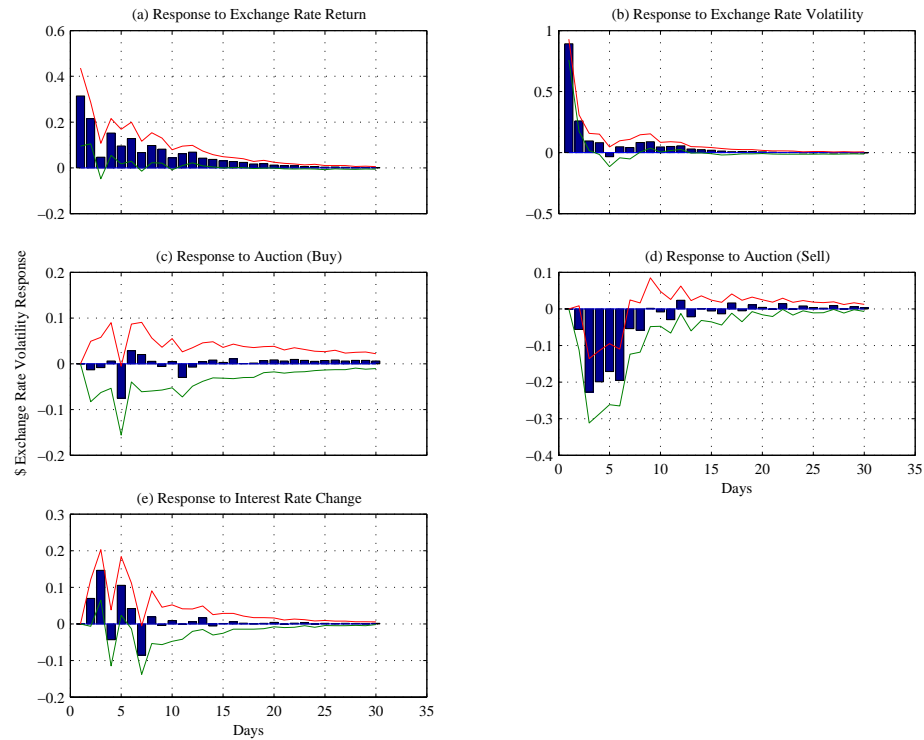


Figure 4: TRL/USD daily exchange rate volatility response to shocks to different variables in the system. (a) Response to a shock (1.48 percent increase) in TRL/USD daily exchange rate return. (b) Response to a shock (1.15 percent increase) in TRL/USD daily volatility (absolute return). (c) Response to a shock (6 Million USD increase) in Central Bank USD buying auction. (d) Response to a shock (33 Million USD increase) in Central Bank selling auction. (e) Response to a shock (0.60 percent increase) in change in overnight interest rates. 95 percent bootstrap confidence intervals are plotted as straight lines. Sample period: March 13, 2001 - April 30, 2003 (538 business days).

exchange rate return is no longer observed: selling auctions cause exchange rate return at 1% significance level. Table 2 reports the results of Granger causality tests. This causality should be interpreted with impulse responses below before reaching a conclusion on the Central Bank policies.

Figure 3 depicts the impulse responses of the exchange rate return to various shocks in

	Return	Volatility	Interest Rate	Buying Auction	Selling Auction
Return	0.00	0.26	0.34	0.13	0.00
Volatility	0.01	0.00	0.00	0.53	0.00
Interest Rate	0.16	0.00	0.62	0.98	0.46
Buying Auction	0.44	0.82	0.67	0.00	1.00
Selling Auction	0.08	0.12	0.18	0.92	0.00

Table 2: Granger causality probabilities. Sample period: March 13, 2001 - April 30, 2003 (538 business days). The reported probabilities are probabilities that the column variable does not Granger cause the row variable.

the system. These are analogous to the responses of the exchange rate return when the last part of the sample is also included. Similar arguments can be put forth for the responses of volatility to different shocks in the system by observing Figure 4. Thus, one may conclude that the Central Bank's policies from the start of the float until May 2003 targeted volatility rather than the direction or the level of the exchange rate.

The VAR model is estimated using four lags as indicated by the likelihood ratio test for the post-May 2003 period as well.¹³ Adjusted R-squares range from 0.04 (change in the interest rate equation) to 0.48 (buying auctions equation). Granger causality tests indicate that exchange rate volatility and buying auctions cause exchange rate return at 5% and 1% significance levels respectively. The results of Granger causality tests are reported in Table 3.

In the period after May 2003, we observe that the response of the exchange rate return to a shock to buying auctions is negative (see Figure 5). Thus, this again confirms that the buying auctions of the Central Bank did not influence the exchange rate positively. This contradicts the claim that the Central Bank was actually intervening in the market to affect the direction of the exchange rate upwards. Even if the bank had such an intention, it was not successful. Panel (d) of Figure 5 depicts the effects of an unexpected increase

¹³This model includes four variables: exchange rate return, exchange rate volatility, buying auctions, and changes in overnight interest rates. The bank conducted only buying actions during the period.

	Return	Volatility	Interest Rate	Buying Auction
Return	0.17	0.02	0.60	0.00
Volatility	0.06	0.10	0.06	0.38
Interest Rate	0.17	0.53	0.84	0.01
Buying Auction	0.35	0.60	0.19	0.00

Table 3: Granger causality probabilities. Sample period: May 1, 2003 - October 30, 2003 (129 business days). The reported probabilities are probabilities that the column variable does not Granger cause the row variable.

in the interest rate on the exchange rate. The initial impact is negative and statistically significant. Most of the positive responses in the following period are not statistically significant. The response of the exchange rate return to interest rate changes during this period is stronger and more immediate than what it was before May 2003. Previously, we found that the response was either not statistically significant (for the entire sample) or significant after one period (pre-May 2003). Here, the first period response is negative and statistically significant. That is, the exchange rate return responds positively (depreciation) to an unexpected interest rate cut. Finally, Figure 6 shows that impulse responses of the volatility to shocks to different variables after May, 2003 are not statistically significant, except a positive response to a positive shock to the exchange rate return. This indicates that the return-volatility relation is still strong in the foreign exchange market in Turkey.

The results of the VAR analysis indicate that the Central Bank policies were aimed at controlling the volatility of the exchange rate since the beginning of the float, but not to influence the level or the direction of the exchange rate. Contrary to the claims that the Central Bank had been responding to the direction of the exchange rate since May 2003, the results indicate that the policies affected volatility rather than the exchange rate itself. Even if the Central Bank implicitly aimed at the level of the exchange rates in recent months, there is no statistical evidence to determine such a policy change from the sample

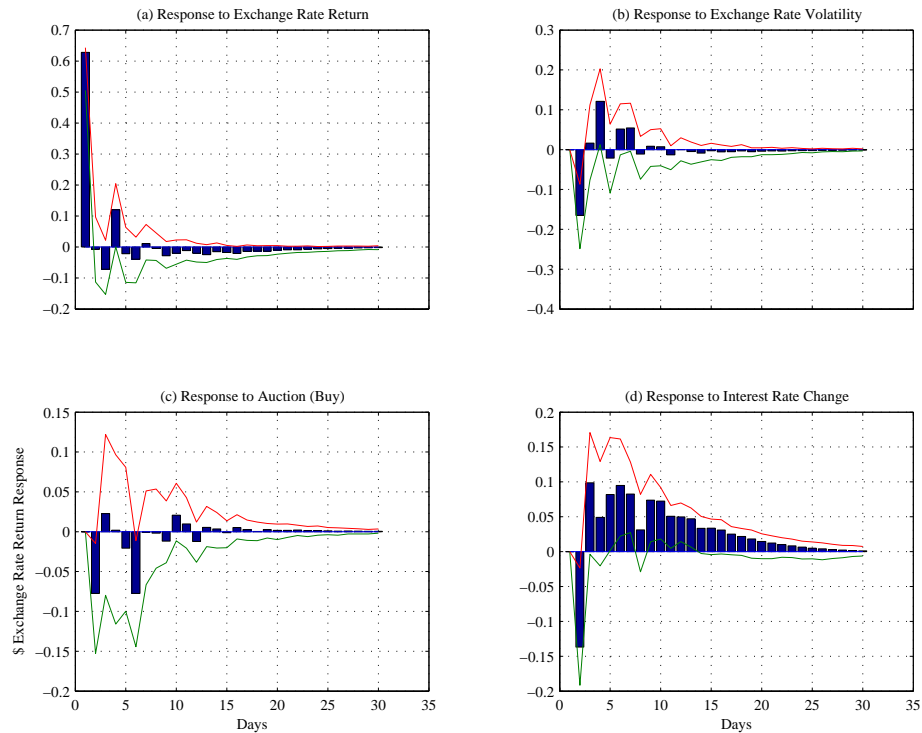


Figure 5: TRL/USD daily exchange rate return (log difference) response to shocks to different variables in the system. (a) Response to a shock (0.70 percent) in TRL/USD daily exchange rate return. (b) Response to a shock (0.43 percent increase) in TRL/USD daily volatility (absolute return). (c) Response to a shock (27 Million USD increase) in Central Bank USD buying auction. (d) Response to a shock (0.58 percent increase) in change in overnight interest rates. 95 percent bootstrap confidence intervals are plotted as straight lines. Sample period: May 1, 2003 - October 30, 2003 (There was no selling auction during this period). (129 business days).

information.

The results in this part are in line with previous findings. Selçuk (2004c) estimated the same model with a shorter sample from the free float period and found similar results. Domaç and Mendoza (2002) estimated an Exponential GARCH model using daily data on foreign exchange intervention in Turkey and Mexico. Using a smaller sample (February 2001 - May 2002), they showed that both the amount and frequency of foreign exchange

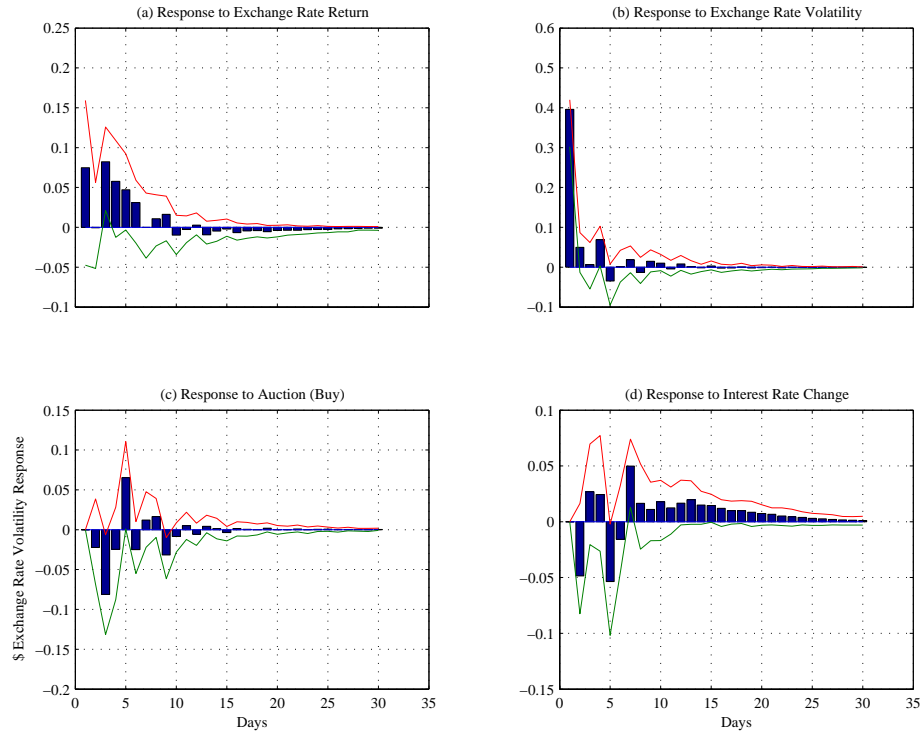


Figure 6: TRL/USD daily exchange rate volatility response to shocks to different variables in the system. (a) Response to a shock (0.70 percent increase) in TRL/USD daily exchange rate return. (b) Response to a shock (0.43 percent increase) in TRL/USD daily volatility (absolute return). (c) Response to a shock (27 Million USD increase) in Central Bank USD buying auction. (d) Response to a shock (0.58 percent increase) in change in overnight interest rates. 95 percent bootstrap confidence intervals are plotted as straight lines. Sample period: May 1, 2003 - October 30, 2003 (There was no selling auction during this period). (129 business days).

intervention decreased the volatility of the exchange rates in Turkey. Domaç and Mendoza (2002) reported that their results also imply that sale operations are effective in influencing the exchange rate and its volatility, while purchase operations are found to be statistically insignificant in affecting the exchange rate and its volatility. Finally, Selçuk (2004b) shows, in an asymmetric stochastic volatility framework, that there is strong positive correlation between the shocks to the foreign exchange rate return at time t and the shocks to volatility

(defined as the standard deviation of the exchange rate return) at time $t + 1$ during the floating exchange rate system in Turkey. We also found that shocks to the return and shocks to the volatility are indeed positively related. This finding itself implies that even if the Central Bank aimed at reducing volatility, the bank was in favor of nominal appreciations as compared to nominal depreciations since these two have opposite effects on the volatility.

5 Accumulated risks

Although the Central Bank has been successful in containing the volatility of the exchange rates, the economy is not free from significant risks. Among these, the record level of real appreciation of the domestic currency and the total public debt with high real interest rates are the most important ones.

According to two real effective exchange rate indices published by the Central Bank, the overall real appreciation of the Turkish lira during the float (March 2001 - October 2003) is in between 26 and 34 percent. This appreciation is not as a result of the initial large depreciation (overshooting) in February 2001. The current level of both indices indicate that the real appreciation is in between 28 and 42 percent as compared to 1995 which was a “normal” year in terms of the real exchange rate level. However, the economy did not register a large current account deficit: it is expected to be around 3 percent of GDP in 2003. The record level of the real appreciation may be explained in part by the productivity increase in tradeable goods sector (the so-called “Balassa-Samuelson effect”). Labor productivity in private manufacturing industry increased 20 percent between 2001 and 2003 (second quarter). In addition, there was a fall in hourly nominal wages (in USD terms) during the same period. As a result, the unit wage index fell 30 percent as compared to 2000. This development partially explains why the competitiveness of the country did

not suffer much from the record level of real appreciation. However, both the productivity growth and the fall in unit wages (in USD terms) seem to have slowed down during the second half of 2003. As a result, there might be a higher than expected current account deficit in 2004, unless the government takes further actions to increase the productivity and to contain the current account deficit.

Another reason behind the appreciation seems to be an external factor. Ardiç and Selçuk (2004) report that the change in the spread between emerging market bonds and US treasury bills is a significant variable in explaining the TRL/USD dynamics. Particularly, they find that a decrease in the spread causes a decrease in TRL/USD while an increase is followed by a nominal depreciation of the Turkish lira. Currently, this spread is at its historical lows and the cycle is expected to reverse following an increase in interest rates in developed markets and a “flight-to-quality”. Therefore, another risk for the Turkish economy is a reversal of foreign capital flows. This development, along with an increasing current account deficit, signals that there might be an upward pressure on the nominal exchange rates in year 2004.

One positive consequence of the appreciation manifested itself on inflation rates: During the float, monthly inflation rates went down from an average of 4 percent to an average of less than 1 percent. For a country with a long history of high inflation, this development is considered as a big success. Selçuk (2004c) reports that the exchange rate pass through in Turkey is around 35 to 50 percent. Consequently, a slow down in nominal exchange rate depreciation would result in a smaller inflation. Similarly, nominal appreciation would have some deflationary effect on prices. Although it is a free floating exchange rate regime, the positive correlation between the exchange rate and price level may cause a bias in the Central Bank’s approach to the developments in the exchange rate market. In other words, the Bank would favor exchange rate appreciations in its policy design since it also follows

an implicit inflation targeting policy. If the risks with the current account deficit and its finance are realized, there would be an upward pressure on prices, and consequently an increase in inflation. This potential risk is possibly one reason why both indicative interest rates determined by the Central Bank and the market determined interest rates remain high in the economy. If the real interest rates are stalled at their current level (around 15 percent), the economy faces a much higher risk in another front: public debt rollover and an unsustainable fiscal position.

Table 4 gives the recent history of the public debt in Turkey.¹⁴ It shows that the total public debt, as a percentage of the Gross National Product (GNP), doubled during the last 5 years. Particularly, the increase in total domestic debt is alarming: it was 21.9 percent of GNP in 1998 while it is 57.7 percent in 2003. What is more, foreign exchange (FX) denominated or FX linked component of the domestic debt is also increasing: it was just 7 percent of the total domestic debt in 1998 while it is now 23 percent. The public foreign debt stock, on the other hand, increased from USD 52 billion in 1998 to USD 89.8 billion in 2003, reaching 46 percent of GNP. Foreign public debt and FX denominated/linked component of the domestic debt together (USD 118 billion) is 60 percent of GNP which implies that a nominal depreciation of the domestic currency would increase the foreign debt burden of the country on impact. This concern might be another contributing factor in viewing real appreciations as a positive development from the policy makers' point of view.

Even if we assume that the country would face no difficulties in rolling over the existing foreign debt, the domestic debt situation is very fragile. In its simplest form, sustainable fiscal policy condition requires that the total debt as a percentage of the total income should

¹⁴These figures reflect the "gross" public debt of the central government in Turkey. For a detailed debt sustainability analysis, net public debt figures should be calculated. That is, the net foreign assets of the Central Bank and the other public sector should be included in the foreign debt calculation. Similarly, the rest of the public sector and the public deposits should be included in domestic debt figures.

Public Debt (Billion USD)	1998	1999	2000	2001	2002	2003*
Domestic	37.1	42.4	54.2	84.9	91.7	120.8
Foreign	52.0	52.7	61.2	70.1	85.4	89.8
Total	89.1	95.1	115.4	155	177.1	210.6

% of GNP						
Domestic	21.9	29.3	29.0	69.2	54.8	57.7
Foreign	25.3	28.3	30.4	48.7	47.1	46.1
Total	47.2	57.6	59.4	117.9	101.9	103.8

Table 4: Public Debt in Turkey. Source: The Central Bank and the Treasury.
* As of September 2003.

not be increasing forever. That is, the following equation should not be positive under the fiscal policy of a country

$$\Delta\beta = (r - g)\beta - x \tag{1}$$

where β is the debt-income ratio, r is the real interest rate, g is the real growth rate of the economy, and x is the primary surplus (non-interest budget surplus). If the current path of the fiscal policy implies that the change in debt-income ratio ($\Delta\beta$) will be positive, the policy is said to be unsustainable, i.e., the fiscal policy at some point must change.

If we assume a 5 percent real growth and a 15 percent real interest rate, the current domestic debt/income ratio (58 percent) implies that the required primary surplus to keep the domestic debt/income ratio constant is 5.8 percent of GDP. So far, the Turkish government is keen to give this much primary surplus. However, an adverse shock to the system may increase the real interest rate while decreasing the growth rate and worsen the fiscal position. For example, if the real interest rate-real growth differential ($r - g$) increases from its assumed level of 10 percent to 15 percent (2-3 percentage point increase in real interest rate and 2-3 percent decrease in the growth rate), the required primary surplus would increase to 9 percent. Given the fact that the government is currently operating at

the limit (in terms of tax revenues and public expenditures), it would be extremely unlikely to obtain a 9 percent primary surplus. In this case, some other policy options to put the fiscal policy into a sustainable path may come into effect in the economy. Otherwise, Anne Kruger, First Deputy Managing Director of IMF, warns that even an IMF assistance could not be helpful:

Suppose, for instance, that the debt is truly unsustainable and that, for whatever reason, a government fails to introduce economic reforms of the kind needed to rebalance the economy. It is difficult to see how, in such circumstances, a program of Fund financial assistance could help. If the structure of the existing debt does not change, the total amount that a country can repay will not change. It is bound to be less than that needed to service the debt. Additional lending from the Fund will simply displace private debt and, in practice, increase the size of the 'haircut' that private creditors will, eventually, have to accept (Krueger, 2003).

In sum, the high real appreciation during the float along with a recently slowed down productivity in manufacturing industry may result in a large current account deficit in Turkey. This development, coupled with external financing difficulties, may lead to an upward correction in nominal exchange rates. This risk increases the risk premium of the country, and prevents the Central Bank from cutting interest rates further down because of the higher inflation risk. High real interest rates, on the other hand, make the fiscal position of the government very fragile.

6 Conclusion

The choice of an exchange rate regime under high capital mobility has become an important concern for the emerging market economies, especially after the Asian crisis, and the subsequent ones in Brazil, Russia, Turkey and Argentina. Furthermore, the increasing degree of globalization in the world has sped up the international integration of capital markets, augmenting the difficulty of policy conduct for the developing economies.

Recent policy discussions on the choice of exchange rate regimes have been in support of corner solutions, namely hard pegs and floats. In the aftermath of the February 2001 crisis, Turkey has let the Turkish lira float, and the policies of the Central Bank since then have been aimed at controlling the volatility of the exchange rate rather than targeting its level or direction while trying to lower the inflation rate.

This chapter has analyzed the developments in the foreign exchange market in light of the Central Bank's policies during the floating exchange rate system in Turkey between 2001-2004. The main finding is that the Central Bank had been successful in containing volatility and reducing the average inflation rate. The estimation results show that the Central Bank did not target the level nor the direction of the exchange rate, and was successful in containing volatility. Despite the arguments that the Central Bank policies after May 2003 were aimed at preventing the appreciation of the Turkish lira, the results of the empirical analysis indicate no evidence to support this claim.

It is important to note, however, that the accumulated risks in the economy, such as the extreme appreciation of the currency and high real interest rates along with large debt burden suggest that the economy is fragile. More drastic economic policies to restructure the economy would lessen the negative impact of unexpected adverse shocks.

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