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INFLATION TARGETING IN TURKEY

Hasan Ersel and Fatih Özatay

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Hasan Erseli, Sabancı University, , İstanbul, Turkey
Email: hasanersel@sabanciuniv.edu
Fatih Özatay, TOBB University of Economics and Technology, Ankara, Turkey
Email: fatih.ozatay@etu.edu.tr

Abstract

In the aftermath of the 2000-2001crisis the banking sector in Turkey was in turbulence requiring immediate action. The rescue operation sky-rocketed the public debt-to-gross domestic product ratio. The fiscal dominance caused by high public debt put a severe constraint on the conduct of monetary policy. Other challenges were the high exchange rate pass-through, inflation inertia, and the weak banking sector. This paper provides an account of the monetary policy experience of Turkey after the crisis. It focuses on the reasons behind adopting informal inflation targeting, i.e. a transition phase, before moving into formal inflation targeting in 2006.

ملخص

في أعقاب أزمة عام 2000-2001 كان القطاع المصرفي التركي في حالة اضطراب يتطلب تحركاً فورياً, ورفعت عملية الإنقاذ نسبة الدين العام إلى الناتج الإجمالي المحلي بشكلٍ كبير. وشكلت السيطرة المالية التي أحدثها ارتفاع الدين العام قيداً صارماً على سير السياسة النقدية. كما شملت التحديات الأخرى سعر الصرف المرتفع واستمرار التضخم وضعف القطاع المصرفي. وتقدم هذه الورقة بياناً عن تجربة السياسة النقدية في تركيا بعد الأزمة مركزةً على أسباب تبني سياسة استهداف التضخم بصوره غير الرسمية، أي المرحلة الانتقالية، قبل الانتقال إلى سياسة استهداف التضخم بصورةٍ رسميةٍ عام 2006.

1. Introduction

In mid-May 2001, just three months after the February crisis, Turkey started to implement a new stabilization and structural adjustment program. The banking sector was in turbulence calling for an immediate action. The rescue program increased public debt-to-GDP ratio sharply. Other main pillars of the May 2001 program were macroeconomic discipline, rehabilitation of the banking sector and an ambitious agenda for structural reforms.

To understand the conduct of monetary policy in the post crisis period, one should understand the fact that even programs that are based on sound macroeconomic fundamentals in economies with an inherited high public debt stock are prone to risks stemming from fiscal dominance and bad macroeconomic policies of the recent past and/or external shocks. The possibility of multiple equilibria limits the efficiency of monetary policy in such economies. Shocks that increase concerns about the continuation of the current macroeconomic framework can push such economies to a "bad equilibrium" ─ in which there is high inflation, high real interest rates and a sharp depreciation ─ from a "good equilibrium" with low inflation, low real rates and a stable currency. This is what has been observed in the Turkish economy since the start of the program.

The new program at the outset stated that the Central Bank of Turkey (CBT) would start to conduct formal inflation targeting at some time in the stand-by period provided that conditions permit. Taking potential weakness of monetary targeting and fiscal dominance into consideration, the Central Bank opted to implement implicit inflation targeting since the beginning of 2002, and ending at the end of 2005 when formal inflation targeting was put in place.

In this paper we provide an account of the inflation targeting experience of Turkey[1]. In the second section we provide a brief account of macroeconomic developments of the pre-crisis period. The third section is devoted to the challenges faced by monetary policy in the aftermath of the crisis. The implicit inflation targeting and the outcome are analyzed in the fourth section. In the fifth section we discuss the decision to shift to formal inflation targeting at the beginning of 2006 and the experience up to now. The final section emphasizes important lessons that can be drawn from the Turkish experience and concludes.

2. Developments in the Pre-crisis Period: 1995-2000[2]

The Turkish economy was hit by two crises in the 1990s. The first one occurred at the beginning of 1994. The second crisis, preceded by financial turmoil, erupted in the second half of November 2000 in the midst of a stabilization program based on the exchange rate. In response to the turmoil, a new letter of intent was presented to the International Monetary Fund by the government, which calmed market pressure. However, at the end of December the average interest rates were almost four times higher than their levels at the beginning of November and more than five times higher than the pre-announced year-end depreciation rate of the lira.

This unsustainable situation ended on February 19, 2001, when Prime Minister Bülent Ecevit announced that there was a severe political crisis, which had ignited a serious economic crisis in the highly sensitive markets. On that February day, overnight rates jumped to unprecedented levels of 6200 percent in uncompounded terms. Three days later the exchange rate system collapsed, and Turkey declared it was going to implement a floating exchange rate system. In this section, we will first discuss the macroeconomic situation in the period preceding the crisis, then we will turn to the structure of the banking sector.

[1] On a different account of this experience, see also, Kara (2006).

[2] This section draws on Özatay and Sak (2002).

2.1 Macroeconomic Performance of the Turkish Economy: 1995-2000

Table 1 provides information regarding main macroeconomic indicators in the 1995-2000 period. It is evident that, up to 2000, the macroeconomic fundamentals were rather weak. Furthermore there was a significant deterioration in the fundamentals towards the end of 1990s. For example, in the period preceding the crisis, the public sector borrowing requirement was very high. This requirement was mainly met by issuing domestic debt rather than by inflation tax, as a result an upward trend in the inflation rate was not observed. However, the price paid was a continuous rise in the public debt stock, and also the real interest rate remained at high levels. Note that due to the same reason, the inflation rate persisted at high two digit levels.

In the absence of a stabilization program that aims to give an end to this fiscal laxity, it was impossible for the monetary authorities to implement a tight monetary policy. Indeed, at that time, the main concern of the economic policy makers was not to dry up the domestic debt market. Given the high and increasing financing requirements, a sharp decline for government securities would be a call for monetization. Hence, the CBT tried to leave enough liquidity in the market to minimize this risk. Clearly, under this type of an accommodative policy, implementation of an inflation targeting regime was out of question.

At the end of 1999, Turkey attempted to change this picture and signed a standby agreement with the International Monetary Fund (IMF). Presumably to break the inertia of the inflation rate, the policymakers put the pre-announced crawling peg system at the core of the program. Hence, given the dominance of daily exchange rate targets of the program, implementation of an inflation targeting regime was again not possible.

2.2 Fragility of the Banking Sector: 1995-2000

The program succeeded, to some extent, to provide an end to the then unsustainable fiscal policy. It reversed the upward trends in the real interest rate on government securities, public sector borrowing requirement, and domestic debt stock. In contrast to this improvement in the fiscal front, the current account deficit widened. However, the main problem was in the banking sector. Note that at the beginning of the program period the fragility of the banking sector was not known to the public. It only became visible by the start of the financial turmoil that ended with the first attack to the currency on November 2000.

Table 2 presents various indicators of the risk exposure of the banking sector in the December 1995-September 2001 period. The ratio of nonperforming loans to total loans started to increase in 1998. In the period preceding the crisis, an open foreign exchange position was a structural feature of the Turkish banking system. While the total open foreign position of the banking system was following an upward trend on the road to crisis, the ratio of liquid foreign exchange-denominated assets to total foreign exchange-denominated liabilities was following the opposite trend. Maturity mismatch was another structural feature of the Turkish banking sector. The figures given in the table show that the liabilities were more short-term in nature, while the maturities of the assets were longer-term. All of these indicators clearly show that the vulnerability of the banking sector to capital reversals increased throughout 2000.

Despite the fact that both private and state-owned banks had accumulated risks on the road to crisis, the nature of their respective problems was different. On the asset side, the increasing size of duty loss accumulation of the state banks and the need to finance duty loss by short-term domestic bank liabilities were the source of the problem. On the liability side, the ratio of lira to foreign exchange liabilities showed one major difference between the two groups. The ratio was much lower and decreasing for private banks. While the state banks were more open to interest rate risk, private ones were more prone to exchange rate risk. As documented

in Özatay and Sak (2002), the private banking sector was not homogenous. A number of mid-sized banks had taken highly-leveraged positions. The ratio of government debt instrument portfolio to total assets was much higher in these banks. Moreover, they were carrying this portfolio mainly through short-term repos in anticipation of continued declines in interest rates.

2. 3. Policy Response to the Crisis

The developments in February 2001 were a major blow to the credibility of the Government's economic program and also led to a serious run on the Turkish Lira. The government, hurriedly, abandoned the crawling peg regime and floated the currency. The severity of the shock was not felt only by the government but by all economic decision makers. Therefore, when the government expressed its intention of preparing a major restructuring program and seeking IMF assistance, it received, at least tacitly, the support of all interested parties. The new program, entitled **Strengthening the Turkish Economy** was announced on April 21, 2001. The program envisaged a broad set of reforms to ensure a better functioning public sector, notably by assuring transparency and accountability in resource allocation as well as good governance. Obviously the *sine qua non* of the program was strengthening the balance of public finances. On May 15, 2001 the IMF increased its assistance under a new stand-by arrangement, which encouraged/enabled the authorities to launch serious structural reforms. The reform process was faced with a new and serious threat when September 11 tragedy took place. The dramatic change in the world environment was acknowledged by the authorities and Turkey strengthened her medium term program to clean up the banking sector, consolidate fiscal adjustment and achieve disinflation. In response the IMF approved a three year stand-by credit for Turkey in February 2002 to support the government's economic program.

It must be admitted, however, that the severity of the crisis and the September 11 shock helped reformers, by creating a relatively convenient political environment, with implementing their decisions. The loss of confidence against the past economic policies coupled with increasing uncertainty at the global level weakened the voices that may have risen against such reforms as the tolerance level of the people against policy mistakes increased.

3. Challenges Faced by Monetary Policy in the Aftermath of the 2001 Crisis

At the beginning of 2002 the CBT announced that "… there are two nominal anchors to be used in 2002 in order to lessen the future uncertainties and to influence the expectations. These are monetary targeting and inflation targeting. In 2002, we will begin by monetary targeting and at the same time implement a monetary policy focused on the 'future inflation' details of which are given below. In other words, this is an 'implicit inflation targeting.' When the conditions are favorable we will openly switch to official inflation targeting."

Two questions follow: What was the reason behind using two nominal anchors? And why implicit rather than formal inflation targeting? Below we discuss these issues.

3.1 The Need for Two Nominal Anchors

The currency peg system, which was introduced in 2000, collapsed in February 2001. It was unrealistic to insist on a similar regime in the aftermath of the crisis. The second option was to switch to monetary targeting. In fact, up to Brazil's inflation targeting under a stand-by agreement, putting limits on various monetary aggregates selected from the balance sheet of a central bank was a general rule under all stand-by agreements with the IMF. Turkey was not an exception. There were limits on base money, net domestic and net international assets of the CBT for 2002.

However, the CBT was unhappy with monetary targeting for two reasons. The first one was the well known fact which made monetary targeting an obsolete monetary policy regime: The weakening link between classical monetary aggregates and inflation due to the introduction of new financial assets, financial deepening and free capital account and insufficient capacity of the public to convert developments in monetary aggregates to inflation expectations. In addition, based on the strong program that started being implemented on May 2001 and a possible change in the mood of economic agents towards a more positive stance, a reversal in dollarization was expected. Yet, this meant a rise in demand for domestic currency. So, it was difficult to forecast demand for money, and consequently there was a risk for frequently revising the targets for monetary aggregates. The second one was the presence of a similar agreement with the IMF before the crisis. Hence, there was a great risk that monetary targeting would not be found credible by the public.

The third option was to implement formal inflation targeting. However, as we discuss in what follows, conditions for credibly implementing formal inflation targeting were not there. Hence, there was a dilemma: Monetary authorities were not happy with the monetary targeting regime. On the other hand, they were extremely reluctant to a premature implementation of inflation targeting not to undermine its credibility. The recipe was to announce the implementation of implicit inflation targeting and downgrade monetary targeting which had to be in the monetary policy framework due to the stand-by agreement with the IMF.

3.2 Why Implicit Rather than Formal Inflation Targeting?

The answer to this question was explicitly given by the CBT: "We will openly initiate the inflation targeting regime whenever the conditions emerge. We had to postpone the introduction of inflation targeting due to concerns about the sustainability of domestic debt…. There are two more factors why this regime has not yet been adopted. The first one is the deep-rooted habit of price setting based on past inflation….The second is the still strong relationship between the inflation and the rate of exchange rate increase(namely the pass through effect)."

Fiscal Dominance

The periods following recent currency crises have generally witnessed a hike in public debt[3]. Table 3 documents this fact for Turkey. Indeed, the key words to understand fiscal dominance are high public debt.

However, this classical definition of fiscal dominance acknowledges the trade-off between debt and monetary financing of the existing budget deficits. Regarding the constraints put on the conduct of monetary policy by high public debt more relevant for the CBT at that time was the relationship between default concerns, high risk premium, high depreciation of the domestic currency, and the following inflationary pressures.

Models built on the Barro and Gordon (1983) framework show that, in the case of existence of government bonds, time inconsistency of optimal policy can generate multiple equilibria. The possibility of multiple equilibria limits the efficiency of monetary policy in such economies. Shocks that raise concerns about the continuation of the current macroeconomic framework can push such economies from a good to a bad equilibrium. This occurs, because, the costs of honoring the debt or maintaining the fixed exchange rate regime depends on the public's expectations regarding future policy. Calvo (1988) provides such a model in which

[3] This jump in public debt mainly stems from resolution costs of the financial sector, which are estimated to be 34 percent of GDP for Korea and 20 percent for Mexico (Hoggarth and Saporta, 2001, p. 162), and 33 percent of GNP for Turkey (World Bank, 2003, p. 21).

the possibility of debt repudiation is the root cause of multiple equilibria. Sachs et al. (1996) show that certain levels of debt give rise to multiple equilibria while other levels do not.

Why should high public debt scare an inflation targeting central bank? An inflation targeting central bank should respond to an increase in the probability of an upsurge in future inflation by raising its policy rate. Now, suppose that in a highly indebted economy, the pass-through effect is significant. In this economy, developments that increase concerns about debt sustainability would not only increase interest rates but would also weaken the domestic currency. On the one hand, an increase in the probability of debt repudiation would cause new subscribers to ask for higher rates to compensate for the increasing default risk. On the other hand, demand for foreign currency denominated assets would increase. Hence the weakening of the domestic currency would occur. Consequently, a central bank that raises its policy rate in response to a potential rise in inflation due to weakening of the currency faces two related problems under such conditions. First, a rise in its overnight rate could signal to the markets that "things are not going in the right direction" ─ which could obviously increase the perceived default risk and hence, the real interest rate and exchange rate. Second, both indirectly with the first effect and directly by raising the cost of borrowing, such a response in policy would increase the debt burden of the treasury and jeopardize debt sustainability. The domestic currency would depreciate under these circumstances, which could be inflationary if the pass-through effect is significant. This means that the plan to increase the short-term interest rate to cope with inflationary pressures would backfire.

A counter argument would be that a central bank which does its job by raising interest rates will be credible, and such a credible policy decision will more than offset the aforementioned negative effects on inflation. Analyzing which argument is correct is not an issue addressed in this paper. However, the probability that raising interest rates could backfire under such circumstances cannot be disregarded immediately. Given this probability, the effectiveness of inflation targeting in such economies is asymmetric. Cutting policy rates does not pose such problems (provided that such a cut is warranted by the inflation outlook), whereas raising them does[4].

Backward Looking Pricing

As is well known the practice indexation of nominal contracts to past inflation is one of the most important obstacles to disinflation programs for the simple reason that under such schemes one observes an important amount of inertia in the behavior of inflation. This is why, for example, Israel in 1985 and Mexico in 1989 opted for a heterodox stabilization programs in which wage and price changes were linked to the targeted inflation rather than the past inflation. Even in the absence of such formal indexation mechanisms, if economic agents consider past inflation data in taking economic decisions (if they are backward looking) a similar inertia in inflation can arise. Kara et al. (2005) show that the impact of such implicit indexation mechanisms on the evolution of the inflation rate in Turkey in the periods preceding the 2001 crisis was considerable.

[4] The model presented in Blanchard (2004) shows how inflation targeting can have adverse effects and under which conditions. Blanchard further argues that Brazil found itself in such a situation in 2002 and 2003. Studying the recent experience of Brazil, Favero and Giavazzi (2004) show how the effectiveness of monetary policy depended on the fiscal policy regime during the same period. Aktaş et al. (2005) derived a "model-based" default risk series for Turkey during the 1999-2003 period by introducing an unobserved components model with time varying parameters. They found that the arguments of Blanchard (2004) and Favero and Giavazzi (2004) are valid for Turkey.

High Pass-through

High pass-through generally means that one of the most important determinants of future path of inflation is the rate of change of the exchange rate. This occurs firstly through the impact of import prices on costs, secondly through shaping inflationary expectations and thirdly via various indexation mechanisms. In a small, open and emerging economy, a significant change in the direction of capital flows not stemming from policies followed by that country, has the potential to affect the exchange rate and hence the inflation rate. Provided that such a shock persists for some time, inflation targets can be missed. Kara and Öğünç (2005) and Kara et al. (2005) provide estimates for the exchange rate pass-through effect in Turkey. They show that for the period 1994-2001 the pass-through was quick (completed in six months) and large.

The Structure of the Financial Sector

A major concern of a central bank attempting to implement an IT program is whether the country's banking system can properly and safely react to its policy signals. If banks fail to react properly, they may curb the effectiveness of the monetary policy[5]. On the other hand, if their reaction endangers the safety of the banking system, then the central bank will find itself in the position of placing financial stability ahead of price stability. Recent experiences of developing countries as well as Turkey's own indicate that a liberalized financial system, unless supervised carefully and forcefully, may be quite vulnerable to crises. Banks, in general tend to assume high risks, without increasing their capital base. The governments' growth and employment concerns induce them to overlook such tendencies and/or undermine their dangers. Under such circumstances, central banks, inevitably, refrain from taking those decisions that may be effective in controlling inflation but may endanger financial stability. Obviously the solution of this problem lies in strengthening the supervisory environment to enforce effective risk management constraints on the banking system and increase banks' capital.

Turkey went into the deepest financial crisis in recent history in February 2001[6].The negative balance sheet effect of the crisis was detrimental not only for banks but also for non-financial corporations. The seriousness of the situation forced the authorities to take rather drastic measures ─ some of which were long awaited ─ to restructure the Turkish banking system. Although the crisis impaired the functioning of the Turkish banking system, it created an opportunity for making a viable system in a globally integrated economic environment.

On May 15, 2001 Turkey launched the *Banking Sector Restructuring Program* (BSRP) to deal with the situation. The program was, in fact, a component of the comprehensive restructuring program of the Turkish economy. It therefore shared the philosophy of the general approach of inducing change in the private sector by launching reforms in the public sector. The final aim of the BSRP was to create a sound competitive environment for banking. Reforming the state owned banks drew considerable attention due to its high cost as well as its impact on the domestic politics of the country. However, this pillar of the BSRP was merely an intermediary step stone towards achieving its final aim, which was changing private banks' operations mode. The program was based on three main pillars:

[5] One may imagine that banks may not be able to understand signals given by the central bank. Such a situation was highly unlikely in the case of Turkey. The Central Bank had a long experience of communicating with the banking community. Therefore, and despite insufficient information, "central bank language" was not alien to the banking community. On the other hand, as was demonstrated in Ersel (2002), banks were capable of taking macroeconomic information into account when forming their major managerial decisions.

[6] This section is based on Ersel (2004). For a discussion of restructuring the banking system in Turkey, see also Özatay and Sak (2002) and Pazarbaşıoğlu (2005).

1) Reforming State Owned Banks: The program's aim was solving the problem of the accumulated Treasury debt and restructuring these banks. The Treasury issued government bonds to securitize such debts, capital was injected into these banks and their management was transferred to a joint board of directors with the mission of restructuring. State-owned banks were made more prudent in identifying their problem loans to secure their transparency. As a result of this policy, the non-performing loan figures for state-owned banks increased and so did provisions. In this process two major state owned banks were also merged.

2) Strengthening Private Banks: The first problem dealt with was bank failures. Between 1997 and 2000 11 banks failed. During the 2001-2002 period, nine banks were taken over and transferred over to the Savings Deposit Insurance Fund (SDIF). During the restructuring process 12 banks were merged into two banks. The authorities not only reduced the number of the SDIF banks but also scaled down their activities (Table 4).

The second problem to deal with was the weakness of the banking system. The 2001 crisis, as well as the developments that led to it, negatively affected the banks' financial structure and profitability. Being aware of the vitally important role of the banking system in the future growth path of the Turkish economy, the authorities gave priority to securing its safety and soundness by

i) reducing banks' foreign exchange risks by allowing them to substitute their TL denominated government bonds with FX denominated ones,

ii) strengthening their capital base by asking banks to strictly satisfy the minimum capital adequacy ratio of 8 % through raising capital from their shareholders, and

iii) launching a financial restructuring program for those non-financial corporations that were distressed but viable for preventing non-performing loans from shoot up.

3) Establishing the conditions for a sound functioning banking system by securing the autonomy of the supervisory authority, enhancing its technical capabilities and adopting the international (European Union) standards in banking legislation.

As can be seen from Table 5, the 2001 crisis adversely affected the Turkish banking system. Its size, relative to the country's GNP, declined sharply, as did the credit/GNP ratio. The "flight from credit" phenomenon ended in 2004, when the economy started to exhibit rather strong growth performance and the banking system expanded.

4. Implicit Inflation Targeting and the Outcome: 2002-2005

At the beginning of 2002, the CBT announced that it was going to implement implicit inflation targeting. The core of formal inflation targeting is included in this framework. Firstly, given that the main aim of the CBT is to achieve price stability, short-term interest rates (the main policy tool of the CBT) were changed based purely on the inflation outlook. Secondly, whenever a decision was taken on interest rates, the rationale behind that decision was explained to the public in press releases. However, up to the beginning of 2005, some elements of formal inflation targeting were missing. For example, the public did not know the meeting dates of the monetary policy committee, there was no voting in the monetary policy committee and final decisions on policy rates were taken by a small group consisting of the governor, one vice governor, the general directors of the markets department and the research and monetary policy department. This group took discussions of the monetary policy committee into consideration when giving their final decision. In the following sections we discuss the developments in this period.

4.1 The Program

Since the beginning of the program, there has been substantial progress in structural reforms. Just after the crisis the CBT gained instrument independence. Along with the above

mentioned restructuring of the financial sector, the public sector also underwent a reform process. Redundant positions (more than 10% of total state economic enterprises' employment) were eliminated. A hiring limit was implemented. The agricultural support system was re-designed. Independent regulatory and supervisory agencies were formed. Steps were taken to enhance transparency, budget discipline and accountability in the public sector. Various laws were enacted to improve the investment environment.

Throughout the post-crisis period, the primary budget surplus-to-GNP ratio targets were rather ambitious. Despite a temporary deviation due to political chaos in the second half of 2002, the realizations were almost in line with the targets: 5.5% in 2001, 4.1% in 2002, 6.3% in 2003, 6.5% in 2004 and 6.4% in 2005, versus a 6.5% target. Simultaneously, the public sector reduced its deficit to 0.6% of the GDP at the end of the second quarter of 2006 from 15.1% of the GDP in 2001. Additionally, the exposure risk of public debt stock decreased through a successful debt management policy; the share of foreign exchange denominated (or indexed) debt in the total public debt was reduced considerably. Similarly, the floating rate part of domestic debt stock shrank significantly.

One of the most important elements of the program implemented after the crisis was the floating exchange rate system. This regime was one of the necessary conditions for the smooth operation of implicit inflation targeting. The exchange rate policy of the CBT became more transparent at the beginning of 2002. The CBT stressed that it would not interfere with the level or trend of the exchange rate. It also announced that it could intervene in case of excess volatility. Based on this main principle, however, the CBT also pledged to limit the incidence of such intervention. In addition, at the beginning of 2002, the CBT explicitly instructed the markets that: first, on condition of strict implementation of the program and in the absence of large external shocks, the dollarization process would lose its importance, eventually leading to a reverse dollarization process. Second, favorable balance of payments conditions would probably arise. Third, although the exchange rate regime was floating, the level of foreign exchange reserves was important due to three main reasons. Turkey had forthcoming debt repayments to the IMF. International investors gave special emphasis to the level of reserves. The CBT wanted to clear its balance sheet of some types of foreign exchange liabilities, such as deposits of workers abroad. Fourth, given the importance of the level of reserves (in this case, regardless of the exchange rate system), and provided that at least one of the conditions stated in the first two items materialized, it was going to build-up reserves through rule based, transparent and pre-announced purchase auctions.

4.2 The Effect of Fiscal Dominance

By implementing a program that rests on fiscal and monetary discipline and structural reforms the fiscal dominance started to lose its importance. However, it was a challenge starting from the onset of the crisis and especially up to 2005. In this period, the CBT raised its overnight rate just once - in July 2001- and the reactions of the markets were adverse. Interest rates of all maturities moved upwards and the lira depreciated.

A positive and close relationship between the daily evolution of Eurobond spreads[7], the exchange rate (value of lira against an equal weighted basket of euro and dollar) and the secondary market Treasury bill rate was another manifestation of fiscal dominance. This relationship is graphed in Figure 1. More formally, Table 6 presents the contemporaneous correlation coefficients between the rates of change of these variables for different periods. The correlation coefficients are positive and high. A positive correlation between the rate of change of the exchange rate and interest rate is one that the portfolio model would not predict.

[7] Here we use the Turkish component of the JPMorgan's EMBI+.

Blanchard (2004) presents a formal model to explain this phenomenon, which is apparently at odds with the portfolio model. In his model the positive association between the exchange rate and the interest rate is attributed to default risk. A rise in interest rate due to an increase in the default risk triggers capital outflows and causes the domestic currency to depreciate. On the contrary, in his model, a rise in interest rate, without any accompanying change in the default risk (for example due to a rise in riskless rate that does not change the risk appetite of foreign investors and debt service of the country), would cause appreciation (due to a rise in capital inflows) as the portfolio model predicts. Blanchard (2004) and Favero and Giavazzi (2004) show that a similar phenomenon was observed in Brazil in early 2000.

4.3 What Happened to the Financial Sector?

Despite the positive developments in the Turkish banking system after its major restructuring in early 2000, financial stability was still a concern for the Central Bank.

First of all, the recovery of the economy brought in not only an opportunity to grow for the banking system but also a fierce competition. On the one hand, domestic banks found themselves competing for those customers who seemed eligible after the introduction of new risk management rules. It became clear that the number of such commercial customers that need financing is a binding constraint for banks to expand their activities and increase their profitability. A glance at Turkey's balance of payments reveals that, as the economy entered its growth phase of the cycle, such companies' ability to borrow from abroad dramatically increased and therefore their reliance on domestic financial institutions declined. In Table 7 the visible increase in the private sector's (non-financial) external debts between 2001 and 2005 is given.

Such an increase in both domestic and external competition in banking exerted a considerable downward pressure on banks' profitability. Net interest income to total assets ratio exhibited a declining trend during the years of economic recovery, and profitability declined (Table 7).

Turkey, on the other hand, was among the few countries most adversely affected by the developments in the world financial markets in May-June 2006. As can be seen from Table 9 the impact of these developments on the banking system was significantly negative. Banks suffered from considerable equity erosion and revealed their balance sheets vulnerability to exchange rate movements. It is true that banks were able to hedge, at least partially, against such risks; therefore once the off balance sheet items were taken into account, the overall effect of the May-June 2006 shock was much less. However, the structural nature of the problem would be likely to induce bank managements to react over cautiously.

All in all, during the recovery phase the declining profitability of the Turkish banking system[8], coupled with the increased reliance of the private sector (including banks) on financing themselves from external sources, adversely affected the efficiency of the monetary policy.

4.4 Outcome

By the end of 2001, the program started to show its strength; inflation expectations followed a downward trend, the inflation rate mostly declined, the public debt-to-GDP ratio was significantly reduced. The Turkish economy first started to recover and then grow despite the extremely tight fiscal policy. There is no doubt that this phenomenon is not unique to Turkey; it was observed in some other countries in the 1980s, leading to the development of the so-called "expansionary fiscal contractions" in economic literature (Table 3)[9]. As documented

[8] See Stiglitz & Greenwald (2003, Chapter 8) for a discussion of banking system related factors that influence the efficiency of the monetary policy.

[9] See, for example, Giavazzi and Pagano (1990) and Aarle and Garretsen (2002).

by Akıncı *et al*. (2005) dollarization started to decline. This created an opportunity for the CBT to increase its reserves. Consequently, through foreign exchange purchase auctions, the CBT purchased 0.8 billion dollars in 2002, 5.7 billion dollars in 2003, 4.1 billion dollars in 2004, and 22 billion dollars in 2005.

However, one should also note that there were temporary deviations from this positive main trend. As discussed above and despite sound policies and reforms, economies that had inherited a host of problems due to imprudent policies of the past needed a considerable period of time to overcome these problems. During these periods, such economies remain vulnerable to shifts in market sentiment due to changes in international and domestic risk factors. Even a brief glance at the evolution of secondary market interest rates, the exchange rate and Eurobond spreads would reveal this fact (Figure 1a and 1b). Regarding the interest rate and spread the main trend was definitely downwards yet there were sharp increases in both variables from time to time. Additionally, a similar phenomenon applied for the exchange rate.

Çulha *et al.* (2005) analyzed the relative importance of macroeconomic news (surprises in fundamentals), US interest rates, domestic political news and EU and IMF related news releases on affecting secondary market interest rates in Turkey, using daily data for the period May 2001─December 2002. They reported that macroeconomic fundamentals (credit ratings and central bank overnight changes) were among the determinants in changing interest rates. However, both positive and negative political news (not all kinds of news, but news related to fulfilling conditions of the IMF program), adverse EU related news, and IMF announcements also had a very significant influence on these rates. Çulha *et al.* (2006) notes a similar finding for the evolution of EMBI spreads for the May 2001 – December 2004 period. Note that these finding are in line with our interpretation of the developments in the post-crisis period.

However, in the absence of a slip in the conduct of the fiscal discipline and discontinuation of structural reforms, the effects of external shocks proved to be temporary. The first external shock was the Iraq war in 2001, during which real interest rates jumped and the real value of the TL dropped significantly. The second one was the announcements of the US Federal Reserve Bank (FED) and the following interpretations of a possible aggressive tightening during the first half of 2004. The terrorist bombing attacks in Istanbul reinforced the negative impact of FED announcements. Despite these shocks, the main macroeconomic indicators stayed on the right track, which can be interpreted as evidence of the increased resilience of the Turkish economy.

Given the positive main economic trend, the sharp decline in the debt to GDP ratio and the increased resilience of the Turkish economy, monetary authorities could have shifted to formal inflation targeting at the beginning of 2005. Yet due to two main reasons they continued with the implicit inflation targeting of 2002. On the one hand the statistics institute started to publish a new consumer index series. This was seen as a great obstacle to forecast inflation and communicate with the public. At the beginning of 2005 a new currency was introduced by dropping six zeros from the lira. The monetary reform was the second reason of the reluctance of the CBT for formal inflation targeting. Moreover, there were still some concerns, albeit diminishing ones, regarding fiscal dominance.

5. Formal Inflation Targeting: 2006-

For new members of the EU, EMBI ─ a proxy for credit risk and hence fiscal dominance ─ generally hovered around 50 basis points throughout 2004. The record low level of EMBI spread ─ registered in 2005 ─ fluctuated around a band of 215-310 basis points and remained around 220 basis points in the second half of the same year. To put it differently, the default risk level was much lower compared to the recent past.

The Turkish government declared that Turkey would sign a new stand-by agreement with the IMF covering the period 2005-2007. Fiscal and monetary discipline was again at the core of the program. Three important structural reforms were planned: social security reform (second phase), tax reform and financial services reform. It was clear that a powerful anchor was necessary for a successful implementation of full-fledged inflation targeting. The second anchor would be the EU accession process. While the role of the EU accession was going to be more visible in the medium to long term, it would nevertheless reinforce the positive impact of the new program.

Based on these two anchors, it was natural to expect a positive (main) trend in macroeconomic variables. The three key reforms would help remove structural barriers to achieving lower real interest rates by deepening the financial sector and increasing the quality of fiscal discipline. The downward trend in real rates would be strengthened by macroeconomic discipline. Hence, further reductions in the debt-to-GNP ratio, real interest rates and inflation were going to be observed. Hence, in 2005 the CBT declared that the implementation of formal inflation targeting would start at the beginning of 2006.

5.1 Announcement

The following are taken from the CBT (2005): "…*In time, harmonization with the floating exchange rate regime increased and considerable progress was made in the formation of a suitable environment for the transition to an inflation targeting regime: all inflation target were met, confidence was heightened and inflation expectations converged with the targets. Today inflation is at its lowest in thirty years. While debates on the sustainability of public debt stock used to be at the top of the economic agenda in the past, this is no longer the case. Worries pertaining to the continuity of fiscal discipline have eased considerably. Financial markets started to become deeper, and the financial sector has become less fragile.*

Progress made towards economic stability started the reverse-dollarization process, and although it was interrupted from time to time and more progress is necessary, the weight of Turkish lira denominated investments began to increase in portfolio preferences.

…. Following the agreement with the IMF, the announcement of the medium-term program and the start of the negotiation process with the EU for full membership, the predictability of fundamental macroeconomic variables further increased.

During the period 2001-2005, very significant steps were taken pertaining to the improvement of the institutional infrastructure of monetary policy…. The Central Bank rendered its institutional framework more efficient, defined its communications policy in a more transparent way, expanded its information set and improved its inflation forecast methods. Besides these factors, significant progress was made during this time in the area of Central Bank independence, pertaining to its practice.

… All these developments pointed to the fact that the pre-conditions of the inflation targeting regime had, to a large extent, been met and the appropriate time was approaching…."

These paragraphs clearly highlight which factors the CBT thought most important in switching to full-fledged inflation targeting.

5.2 General Framework[10]

The inflation target (jointly with the government) was set as a point target. The inflation rate measured by the headline consumer price index was used to define the target. The end-year targets for 2006, 2007 and 2008 were set as 5%, 4% and 4%, respectively. The CBT

[10] The general framework of the inflation targeting regime was made public on December 5, 2005. This section heavily draws on that announcement (CBT, 2005).

explicitly stated that it would assess upward or downward deviations from the target on equal footing[11]. It was aware of the fact that due to factors outside the control of monetary policy, the inflation rate could deviate from the target.

The CBT acknowledged that in case of a significant deviation from the target, it would explain the reasons behind this development to the public in its reports in order to be accountable. According to the provision in article 42 of its law, the CBT has to submit information and the measures to be taken to the government in case of such deviations from the target. In order to activate such a mechanism the CBT defined a symmetric uncertainty band around the target. It emphasized that such a band should not be perceived as a band for the inflation target. This band was set as 2 percentage points in both directions. However, since the stand-by agreement with the IMF was continuing and such agreements need performance criteria for the monetary policy, the CBT announced a quarterly inflation path consistent with the target and consequently set uncertainty bands for the end of each quarter.

It was also emphasized that monetary policy would not instantly react to the temporary impacts of large exogenous shocks on inflation. Note that as stated above, inflation targets for a three-year period was announced at the onset. Hence, there is a medium-term perspective for the inflation targeting regime, which gives the CBT some flexibility to tolerate short-term effects of such exogenous shocks provided that the medium-term target is not in jeopardy.

The CBT stated that a pre-announced target would only be changed when very sharp and long-term deviations from the target were expected or when medium-term targets no longer made sense due to factors beyond the control of monetary policy. However, temporary shocks could change inflation forecasts rather than inflation targets.

In the same press release the CBT once again emphasized the importance of fiscal discipline: "In Turkey, fiscal discipline has the potential to affect the inflation-targeting regime through four channels. The first channel comprises long-term expectations. The second channel works through the prices of goods and services produced by the public sector itself. The third channel works through the incomes policy of the public sector. The fourth channel is the direct spending channel". Hence, the CBT implicitly warned the government to implement its fiscal policy in line with the inflation targets.

The CBT announced that it would publish a new report named the Inflation Report. It would be quarterly and for the first time in its history the CBT would give inflation forecasts in this report. In fact, in its subsequent reports the CBT indeed provided two graphs for inflation forecasts for a horizon of six quarters. The first set of forecasts is based on a constant path for policy rates. The second is obtained under a scenario for a changing path for interest rates and the direction of such a change is made clear. In these graphs forecasts for the output gap are also provided in order to give an idea of the monetary policy's degree of tightness[12]. The CBT announced that it would publish summary evaluations of the Monetary Policy Committee (MPC) and its position in respect to the inflation outlook as well. This report would be issued within five working days following the meeting.

The CBT law was amended on May 2001, which envisaged formation of MPC. The MPC consisted of seven members: the governor, four vice governors, a board member elected by the board members, and a member appointed by the government. The Undersecretary of the Treasury or his or her representative attended the meetings as well. However, the undersecretary did not have the right to vote. In the implicit inflation targeting period, the

[11] Note that in the implicit inflation targeting period, the end-year inflation rates were always realized below the targets. The CBT tolerated this development in order to increase perceptions that the disinflation process would be persistent.

[12] These reports are available at the CBT's webpage: www.tcmb.gov.tr.

MPC played an advisory role. With the transition to the formal inflation targeting regime the MPC assumed a decision making role with regards to interest rate and communication policy and also with putting the formal inflation targets jointly with the government. Unless an emergency arose, the MPC regularly met once a month at pre-announced dates. These dates were fixed at the beginning of each year. The meetings were held in two sessions between 2.00 pm and 5.00 pm. The first session hosted Central Bank authorities and specialists as well as authorities from the Treasury. In this session, both the CBT and Treasury experts presented their reports on and evaluations of economic developments. These were open for discussion. In the second session, members of the MPC made the final evaluations about the outlook and put the decision to vote. After the voting decision was complete, members of the MPC prepared a brief report which explained the rationale of the decision. The decision and its rationale were announced by the CBT in a press release between 5.00 pm and 7.00 pm of the same day.

5.3 Outcome in the First Eight Months of 2006

In the second quarter of 2006, both due to turbulence in international markets stemming from rising international interest rates and to the decreased risk appetite of foreign investors and increasing political tensions in Turkey, the domestic currency depreciated sharply, secondary market rates and Turkey's credit risk moved upwards (Figure 1a and 1b).

Rising exchange rates and sharp increases in petroleum prices drove inflation upwards. Buoyant domestic demand played a role in this outcome as well. Based on these developments a significant deterioration in inflation expectations was observed (see Table 3). These negative developments forced the CBT to raise its policy rate (Figure 1a) making it almost a certain that the 5% inflation target for the year would be missed by a wide margin. Given the CBT's sharp and quick policy response there is a chance of achieving the 4% target set for 2007. Yet, it is too early to comment on the achievements under formal inflation targeting.

The May-June 2006 turbulence in the financial markets and their impact on banks' financial statements indicate that the Turkish financial system has not yet fully overcome the instability problem. In the short run, this implies that the central bank is compelled to implement its monetary policy, and that it cannot, and should not implement monetary policy without taking into account the constraints imposed on the banking system. From a longer term perspective, the present state of the Turkish banking system indicates the need for further strengthening (in terms of injecting capital and possibly through increasing the average scale) of Turkish banking.

6. Conclusion

The Turkish experience of inflation targeting once again shows that choosing the right time for a radical change in the conduct of monetary policy (and in fact any economic policy) is crucial for the success of the new regime. However, one should also note that adopting the perfectionist attitude might in fact prove counterproductive, since there is never a 'perfectly right time'. There will always be some elements missing, but one should seek the perfect mix of these missing elements and the elements ready to use.

The period of implicit inflation targeting showed that the coordination of fiscal and monetary policy is essential for the success of monetary policy. Without a disciplined fiscal policy framework, there is never a 'right time' neither for starting to implement inflation targeting, nor for any other monetary regime. Hence, the correct timing is strongly determined by the degree of fiscal dominance.

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Figure 1a: Secondary Market Interest Rate, the Overnight Rate, and EMBI+ (January 2, 2002 – September 21, 2006)

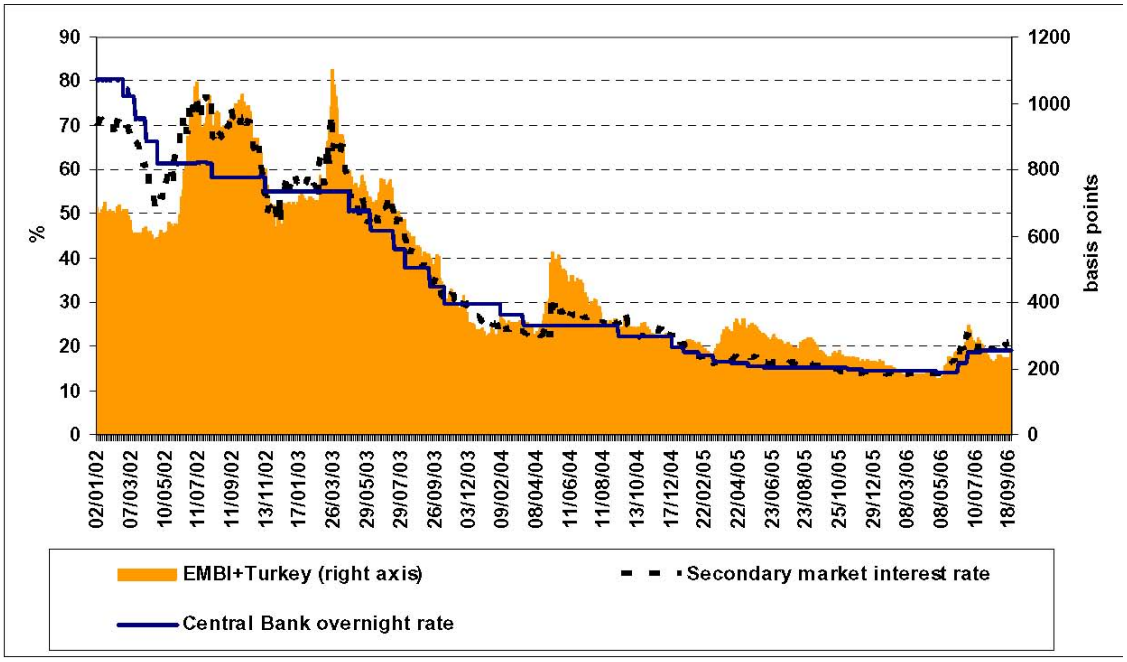

Figure 1b: Exchange Rate (new Turkish Lira against an equal weighted basket of Euro and Dollar, January 2, 2002 – September 21, 2006)

Table 1: Main economic indicators (% of GNP, except interest, inflation and growth rates (%); 1995-2000)

	1995	1996	1997	1998	1999	2000
Public sector borrowing requirement (PSBR)	5.0	8.6	7.7	9.4	15.6	12.5
Duty losses of state banks	2.2	4.2	5.2	7.5	13.3	12.0
Primary surplus	2.1	1.3	0.0	2.1	-1.9	3.8
Public debt[a]	37.6	40.3	40.5	41.3	51.8	53.4
Domestic	14.6	18.5	20.2	21.7	29.3	29.0
Foreign	23.0	21.8	20.3	19.6	22.5	24.4
Short-term public debt	8.0	10.2	8.1	10.9	4.1	2.1
Treasury auction borrowing rate, average	124.2	132.2	107.4	115.5	104.6	38.2
Consumer inflation, average	89.0	80.2	85.7	84.6	64.9	54.9
Consumer inflation, end-year	76.0	79.8	99.1	69.7	68.8	39.0
GNP growth rate	8.0	7.1	8.3	3.9	-6.1	6.3
Current account balance	-1.4	-1.3	-1.4	1.0	-0.7	-4.9
Net capital inflows	2.7	3.0	3.7	-0.4	2.5	4.7
Short-term	2.2	1.5	0.0	0.7	0.4	2.0
Direct investment	0.5	0.3	0.3	0.3	0.1	0.1
Portfolio investment	0.1	0.3	0.9	-3.4	1.8	0.5
Other long-term	-0.1	0.9	2.5	1.9	0.2	2.1
Central bank reserves (billion US dollars)	12.4	16.3	18.4	19.7	23.2	22.2
Real exchange rate[b]	96.9	100.0	110.5	107.8	108.7	118.2

a: Debt stock figures are for the end of the year. Foreign debt is converted to domestic currency by making use of the average annual exchange rate. Foreign debt stock for 2001 is for the third quarter.
b: Year-end values, 1995 average = 100. An increase denotes real appreciation.
Source: Treasury and the Central Bank

Table 2: Ratios, commercial banking sector, (%)[a]

	1995	1996	1997	1998	1999	2000.3	2000.6	2000.9	2000
Non-performing loans / Total loans	2.8	2.2	2.4	7.2	10.7	9.8	9.7	9.3	11.6
Permanent assets / Total assets	7.6	7.3	6.7	8.0	9.4	9.4	11.1	13.4	14.8
FX assets / FX liabilities[b]	90.6	93.6	89.6	84.9	79.4	74.3	73.0	71.6	75.9
FX liabilities - FX assets (billion $)									
Excluding off-the-balance sheet	3.0	2.5	5.0	8.4	13.2	17.2	19.2	20.9	17.4
Including off-the-balance sheet	0.6	1.2	1.9	2.9	2.9	5.7	5.6	5.8	5.5
Liquid FX assets / FX liabilities	44.8	44.6	41.0	39.5	40.0	36.6	35.2	34.4	35.9
Liquid assets / Total sources[c]	46.7	44.0	41.1	39.9	42.6	42.4	41.0	38.3	37.9
Assets / Liabilities (with 3 months or shorter maturities)	n.a.	n.a.	45.8	45.7	46.3	40.8	41.8	43.9	39.9
Share of deposits with 6 months or greater maturity in total deposits	26.1	26.6	24.7	22.9	28.2	19.8	18.7	19.3	15.1
Repos / (Liabilities + repos)[d]	5.1	8.1	12.8	10.4	9.6	12.0	11.4	10.9	11.3

a: End of period figures.
b: 'FX' denotes "foreign currency denominated".
c: Total sources = deposits + non-deposit funds.
d: Repos had been recorded off-the-balance sheet since 2002.
Source: Central Bank and the Banks Association of Turkey.

Table 3. Selected Macroeconomic Indicators: 2001.03 - 2006.06 (%)

	Growth rate[a]	Expected inflation[b]	Consumer inflation[a]	Interest rate[c]	Public debt stock/GDP[d]	Current account deficit/GDP[d]	Budget deficit/GDP[d]	Unemployment Rate
2001.03	-1.0	n.a.	37.5	193.7	72.1	4.2	7.0	8.5
2001.06	-9.8	n.a.	56.1	88.4	98.2	1.9	9.2	6.7
2001.09	-7.5	64.8	61.8	87.6	105.1	0.1	13.4	7.8
2001.12	-10.3	69.8	68.5	74.1	99.7	-2.4	16.0	10.4
2002.03	2.3	43.6	65.1	68.4	91.1	-2.2	20.3	11.5
2002.06	8.9	35.2	42.6	72.2	95.0	-0.7	17.3	9.3
2002.09	8.0	34.3	37.0	62.2	92.2	-0.1	13.9	9.6
2002.12	11.7	31.0	29.7	49.8	87.4	0.8	14.1	11.0
2003.03	8.1	27.3	29.4	59.9	87.6	2.1	12.6	12.3
2003.06	3.9	25.4	29.8	46.0	81.7	2.9	14.4	10.0
2003.09	5.5	20.5	23.0	32.2	76.3	2.5	12.8	9.4
2003.12	6.1	19.1	18.4	27.9	78.6	3.3	11.1	10.3
2004.03	11.8	11.8	11.8	24.4	76.8	3.9	9.7	12.4
2004.06	14.4	11.5	8.9	27.5	78.2	4.4	7.6	9.3
2004.09	5.3	10.5	9.0	25.4	77.1	4.9	7.6	9.5
2004.12	6.3	10.0	9.3	23.1	73.5	5.2	7.0	10.0
2005.03	6.6	7.6	8,7	17,0	73.5	5,3	6.2	11.7
2005.06	5.5	7.5	9.0	15,6	70.6	5.8	4.7	9.2
2005.09	7.7	7.1	8.0	14,8	69.5	6.1	3.8	9.4
2005.12	9.5	7.9	7.7	14,2	68.0	6.4	2.1	10.6
2006.03	6.5	5.8	8.2	13.9	66.9	6.9	1.8	11.9
2006.06	7.5	9.8	10.1	18.1	67.4	7.3	0.6	8.8

Source: Central Bank, Turkish Statistics Institute, Treasury, State Planning Organization.

[a] Percentage change with respect to the same period of the previous year

[b] Expectations Survey of the Central Bank, expected year-end consumer price inflation.

[c] Average compounded interest rate realized in Treasury auctions, weighted by net sales.

[d] Quarterly ratios are calculated by using the sum of the current and last three quarters of GDP.

Table 4: Number of Banks in Turkey

	2000	2001	2002	2003	2004	2005
Deposit Banks	49	46	40	36	35	34
i) State Owned Banks	3	3	3	3	3	3
ii) Private Banks	28	22	20	18	18	17
iii) Foreign Banks	18	15	15	13	13	13
iv) SDIF Controlled Banks	11	6	2	2	1	1
Development and Investment Banks	15	15	14	14	13	13

Source. Banks Association of Turkey

Table 5: Banking Sector Developments in Turkey (2001-2005)

(%)	CREDIT/GNP	DEPOSIT/GNP	BANK ASSETS/GNP
2001	32,5	68,1	122,7
2002	20,5	67,0	77,3
2003	19,6	64,4	70,0
2004	24,1	64,4	71,4
2005	31,5	63,9	81,6

Table 6:. Contemporaneous Correlation Coefficients between Percent Changes in Eurobond Spreads, the Exchange Rate, and the Benchmark Secondary Market Interest Rates

May 16, 2001 - September 21, 2006	% Change in Spread	% Change in Interest Rate	% Change Exchange Ra
% Change in Spread	1.00	0.40	0.44
% Change in Interest Rate	0.40	1.00	0.51
% Change Exchange Rate	0.44	0.51	1.00
May 16, 2001 - January 2, 2005	% Change in Spread	% Change in Interest Rate	% Change Exchange Ra
% Change in Spread	1.00	0.42	0.44
% Change in Interest Rate	0.42	1.00	0.51
% Change Exchange Rate	0.44	0.51	1.00
May 16, 2001 - December 31, 2004	% Change in Spread	% Change in Interest Rate	% Change Exchange Ra
% Change in Spread	1.00	0.43	0.44
% Change in Interest Rate	0.43	1.00	0.51
% Change Exchange Rate	0.44	0.51	1.00
May 16, 2001 - December 31, 2003	% Change in Spread	% Change in Interest Rate	% Change Exchange Ra
% Change in Spread	1.00	0.49	0.45
% Change in Interest Rate	0.49	1.00	0.51
% Change Exchange Rate	0.46	0.51	1.00
May 16, 2001 - December 31, 2002	% Change in Spread	% Change in Interest Rate	% Change Exchange Ra
% Change in Spread	1.00	0.44	0.43
% Change in Interest Rate	0.44	1.00	0.48
% Change Exchange Rate	0.43	0.48	1.00

Table 7: Profitability of the Banking Sector

(%)	2001	2002	2003	2004	2005
Net Interest Income/Total Assets	11,2	6,0	4,5	5,8	4,6
Profit/Total Assets	-5,7	1,1	2,2	2,1	1,4
Profit/Equity	-58,4	9,2	15,8	14,0	10,6

Source: The Banks Association of Turkey

Table 8: Balance Sheet Effects of May-June 2006 Developments

(%)	JUNE 2006	DECEMBER 2005	JUNE 2005
Equity/Risk Weighted Capital	18,6	24,2	25,6
(Equity-Permanent Assets)/Total Assets	6,5	8,2	7,4
Net On Balance Sheet Position/Equity	-17,9	-5,1	-3,7

Source. The Banks Association of Turkey