

## Chapter 7

### **From exchange-rate stabilisation to inflation targeting: Turkey's quest for price stability**

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*This chapter discusses the experience of Turkey with inflation targeting (IT). The author explains how the monetary policy regime was changed in response to the collapse of the exchange-rate peg in 2001 and how inflation targeting was adopted. She discusses how the preconditions for formal IT were fulfilled, and how these achievements helped to lower inflation at single digits. The move to formal IT in 2006, as well as the institutional changes it entailed, is also discussed in the chapter, as well as the successes and challenges the monetary authorities were confronted with within this new policy regime. The chapter concludes with an assessment of the lessons to be drawn from Turkey's experience with IT.*

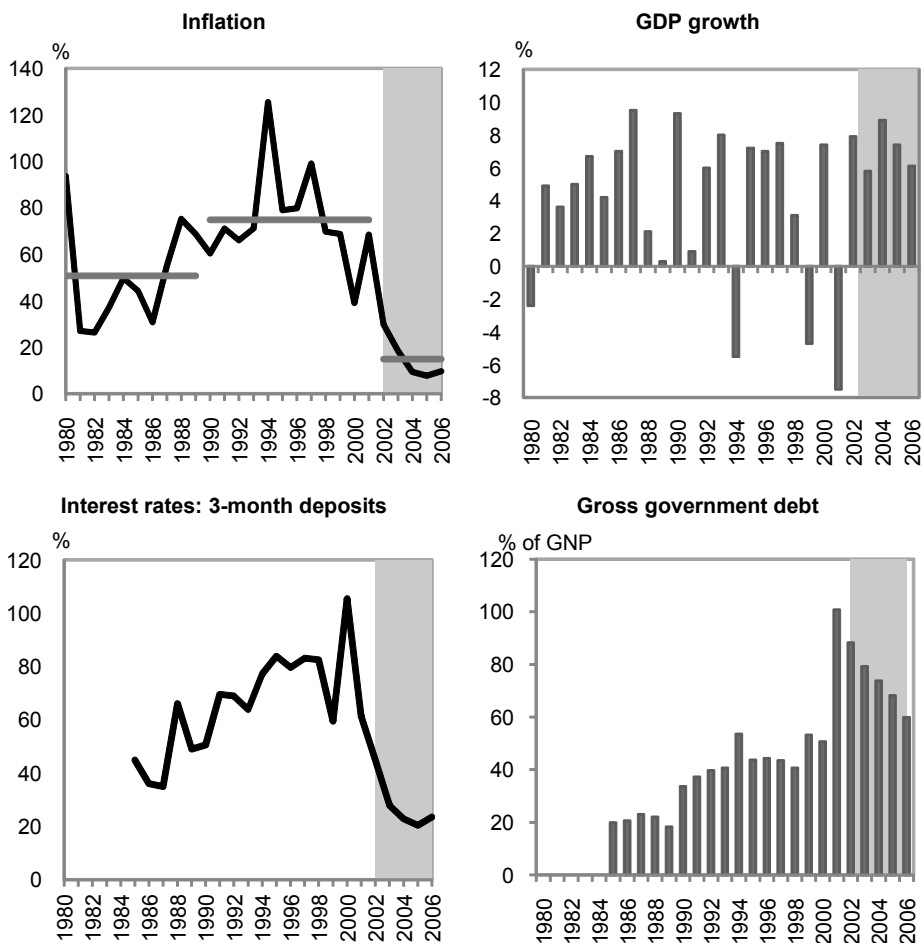
\* The views expressed in this chapter are the author's own and do not necessarily reflect those of the Central Bank of Turkey. I would like to thank Mark Griffiths and Yusuf Soner Baskaya for their invaluable comments. The usual disclaimer applies.

## Introduction

For almost two decades, Turkey suffered from chronically high inflation, persistent fiscal imbalances, financial volatility and wide swings in economic activity. Large budget deficits during the 1990s resulted in a rapid increase in government indebtedness and sharp rises in real interest rates (Figure 7.1), which hurt private investment and led to an unsustainable debt dynamics. The economy also seemed stuck in an inflationary trap: persistently high inflation, together with a series of failed attempts at stabilisation, kept expected inflation high, which in turn was priced into high nominal interest rates. This meant that, even if the authorities somehow succeeded in disinflation, the result would be a large increase in real interest rates *ex post*. This would increase the already high ratio of government debt to GNP, raising concerns that the debt would have to be monetised and inflated away, thereby undermining the stabilisation attempts. Despite this difficult starting point, the years since 2001 have witnessed a rapid improvement in Turkey's economic performance. Growth has been strong and far more stable than in the past. Although the exchange rate has remained volatile, a trend of steady depreciation has been reversed, and the government debt ratio has fallen below 60% of GNP.

This chapter examines one aspect of this transformation: the gradual adoption of inflation targeting (IT), and how this policy move has helped to lower inflation. The chapter explains, *first*, how the monetary policy setting was changed in response to the collapse of the fixed exchange-rate regime during the February 2001 crisis, and IT adopted. *Second*, it discusses how the preconditions for formal IT were put in place, and how these achievements helped to lower inflation to single digits. *Third*, it describes the move to formal IT in 2006, and the institutional changes it entailed, as well as the successes and difficulties monetary policy faced within this new policy regime through 2007. The chapter concludes with an assessment of the lessons to be drawn from Turkey's experience with IT and highlights some of the challenges ahead.

Figure 7.1. Turkey: Key macroeconomic indicators, 1980-2006



Source: TURKSTAT, Turkish Treasury and Central Bank of Turkey.

### The 2001 crisis and the adoption of implicit IT

The government formed after the 1999 elections put in place a new economic programme aimed at reducing inflation and enhancing the economy's growth prospects. Although the programme included a tight fiscal stance and new structural reforms, its centrepiece was an exchange-rate crawling peg to reduce inflation. In a sense, this was a quasi-currency board, since the programme included strict limits on the central bank's creation of net domestic assets: the money supply was endogenous and driven by the balance of

payments and changes in net foreign assets.<sup>1</sup> During 2000 the programme seemed to be succeeding in achieving its goals: the primary budget surplus increased to 3% of GDP, and both inflation and interest rates fell (which helped debt sustainability) as the exchange-rate anchor gained credibility.

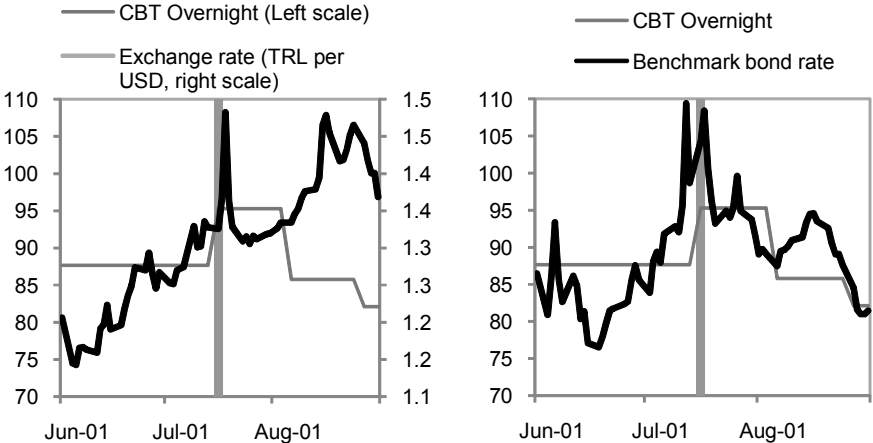
However, these achievements were short-lived. The programme was abandoned in February 2001, resulting in a severe economic crisis. During 2000, although inflation fell, it did so by less than the rate at which the exchange rate had been set to depreciate according to the crawling peg, resulting in a real appreciation of the lira. Together with the increase in domestic demand (resulting from the drop in real interest rates), this real appreciation caused the current account deficit to widen, raising questions about the sustainability of the crawling peg. But the proximate cause of the programme's failure lay in the financial system. A number of banks speculated on the success of the programme by borrowing short or in foreign currency and investing the proceeds in higher-yield longer-term lira-denominated government bonds, taking large open positions. When short-term interest rates had to be increased to defend the peg, the liquidity (and solvency) of these banks came into question. Faced with this tension, eventually the peg had to be abandoned.<sup>2</sup>

The resulting crisis forced Turkey to implement another "new" economic programme. This new programme shared many features of the previous one: improving the fiscal position, pursuing disinflation and implementing structural reforms in support of rapid, sustainable economic growth. However, the collapse of the exchange rate (and the increase in inflation that would follow), the weakness of the financial system and the increase in government debt (due to the impact of the exchange-rate depreciation on foreign currency-denominated debt, the recognition of losses in the financial system and the period of high nominal interest rates needed to defend the peg) meant that the initial conditions for this "new" programme were even less favourable. To increase the chances of success, macroeconomic policies needed to be strengthened significantly.

Monetary policy had to be re-oriented, but no option seemed attractive. Following the 2001 crisis and the collapse of the lira, the exchange rate could no longer be used as a credible anchor. Money supply targeting faced the traditional shortcomings of instability in the demand for money and in the relationship between the growth of money supply and inflation. In addition, similarly to transition economies, potential price shocks, such as corrections in administered prices and tax reform, as well as the likely growth of the financial sector and new forms of financial intermediation, would exacerbate these problems (Jonas and Mishkin, 2003).

IT was the only remaining option, but the preconditions for its successful implementation were far from being fulfilled (CBT, 2002). This is due to a number of reasons. *First*, the inflation rate was very high, at 52% in May 2001, approaching 70% at the end of the year. In this case, the announcement of an inflation target would hardly be credible: no other country had introduced IT at such high inflation rates. *Second*, backward wage- and price-indexation was widespread and the pass-through from exchange-rate changes to prices was high. With higher inflation from an exchange-rate depreciation already in the pipeline, this was hardly an auspicious time to launch IT. *Third*, concerns over fiscal dominance, related to both the size of the government debt and the rollover problems caused by its short maturity, created doubts about the feasibility of using short-term interest rates to control inflation (Kara, 2006). Consistently, when the Central Bank of Turkey (CBT) increased its overnight rate in July 2001, the market reaction was extremely unfavourable: interest rates across all maturities increased and the lira depreciated (Figure 7.2). *Fourth*, financial-sector dominance, due to weaknesses in the banking system, also raised concerns that short-term interest rates would be constrained from being able to target inflation (Fraga *et al.*, 2003, discuss this issue in Brazil).

Figure 7.2. Turkey: Market response to the overnight rate hikes of 16 July 2001



Source: Central Bank of Turkey.

Against this background, the CBT implemented a two-pronged strategy for monetary policy, which it called “implicit IT”. *First*, as an interim step for the remainder of 2001 and 2002, the CBT set targets for the growth of base money (CBT, 2002); for 2002 the target was 40%, roughly in line with the projected

increase in nominal GDP (35% inflation plus 5% real GDP growth). While there was the potential for errors in forecasting money demand, at high inflation rates these errors might be relatively small compared to the high money growth rate being targeted. Money demand instability might be more of a problem at low inflation rates. Despite their imperfections, the base money targets also satisfied the International Monetary Fund (IMF)-supported programme's need for a clear nominal anchor to reduce inflation. However, there was an understanding that the monetary targets could be revised if money demand proved to be volatile, as in the case where disinflation was successful and caused reverse currency substitution.

*Second*, in 2002 the CBT simultaneously started to implement “implicit IT”, where it would set short-term interest rates based on expected inflation. The first such inflation target, at 35% by end 2002, was set jointly with the government.<sup>3</sup> This target would complement that for base money in the event of potential problems in forecasting money demand or the relationship between base money and inflation, therefore acting as an additional anchor. In line with this new approach and the aim to eventually move to formal IT, the CBT committed itself to improving the transparency of monetary policy by making its evaluations of inflation prospects available to the public. It also started to release the results of its new survey of inflation expectations, both as a useful source of information and as a check on its own forecasts of inflation.

### **Putting the preconditions for formal inflation targeting in place**

This hybrid regime of base-money targets and implicit IT turned out to work surprisingly well. By the end of 2002 inflation had fallen to less than 30%, its lowest level since 1986 and well below the 35% target. However, this dual-anchor approach was really only intended as a temporary measure. The CBT's ultimate goal had always been to move to formal IT. The subsequent years were spent putting the preconditions for formal IT in place.

### ***Central bank independence and a clear mandate for price stability***

While a few countries have been able to manage without it, operational independence of the central bank, together with increased transparency concerning its policies and accountability for failure to achieve its goals, are preconditions for successful IT. Accordingly, immediately after the crisis, in May 2001 the Central Bank Law was amended to give the CBT full operational independence to pursue its primary mandate of achieving and maintaining price stability. The Law's main provisions (available at the CBT's website) are:

- Price stability was set as the CBT's primary goal, replacing its earlier mandate to manage monetary and credit policies to accommodate economic development.
- The CBT is required to report formally and regularly to the government on progress made in the pursuit of its inflation target. The governor is required to submit a report to the Council of Ministers on the operations of the bank and its monetary policy in April and October each year. The CBT is required to provide information on its operations to parliament's Planning and Budget Commission twice a year and to prepare regular reports on monetary policy and its implementation, as well as to disclose this information to the public. The frequency of these reports, their scope and procedures for disclosure are set by the CBT. The CBT is required to submit information to the government in writing and to inform the public of the reasons for missing any targets and the corrective measures it would take in this case (Central Bank Law, Article 42). The aim of these measures is to improve the central bank's transparency and accountability.
- Fixed terms were set not only for the governor and board members (as in the previous legislation), but also for the deputy governors to strengthen independence.
- A Monetary Policy Committee was created to advise the central bank on the design and implementation of monetary policy.
- Following a transition period that would expire in November 2001, the CBT was prohibited from lending directly to the Treasury (including purchases of government securities in the primary market). Given the government's difficult debt situation and its history of reliance on monetary financing, this goal would be challenging but essential to give the CBT monetary control.

### ***Overcoming fiscal dominance***

High government debt ratios can undermine the central bank's ability to use its main policy instrument, the short-term interest rate, to control inflation. According to the standard transmission mechanism, higher interest rates make domestic currency-denominated government debt more attractive, resulting in a stronger currency and lower inflation. This comes on top of the standard transmission mechanism in the banking sector through credit growth and domestic demand (although these are less potent in emerging-market

economies). However, in countries with high debt or debt that is of short-maturity, higher interest rates can also increase the probability of default. This makes domestic government debt less attractive, leading potentially to a real exchange-rate depreciation and higher inflation. Even for an independent central bank, high government debt, especially if linked to the short-term interest rate, constrains its ability to tighten monetary policy because of its impact on government solvency.<sup>4</sup>

Following the 2001 crisis, the level and growth of public debt became Turkey's main source of macroeconomic vulnerability. Gross government debt rose to around 100% of GNP. The debt's short maturity implied high rollover rates and increased vulnerability to interest-rate shocks, and its large foreign-currency share resulted in greater exposure to exchange-rate shocks. These factors raised concern in domestic and international markets about debt sustainability and government solvency. Therefore, the adjustment programme focused on overcoming these debt problems. *First*, to address short-run liquidity needs, the government relied on extensive emergency financing from international institutions. *Second*, to achieve medium-term debt sustainability, the government increased its primary surplus target, first to 5.5% of GDP in 2001 and then to 6.5% of GDP from 2002. These ambitious targets were intended to signal a decisive break from the past (IMF, 2001).

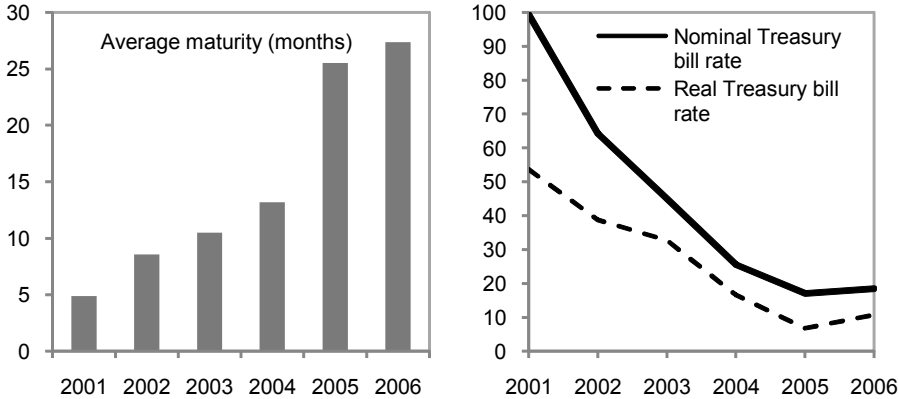
The adjustment efforts ultimately proved successful in achieving debt sustainability and allaying concerns about fiscal dominance. After a period of strict commitment to the programme's monetary and fiscal targets, together with new structural reforms, the macroeconomic environment improved substantially. The combination of high primary surpluses, lower borrowing costs, currency appreciation and high growth reduced the gross public debt ratio to below 70% of GNP by the end of 2005.

In the end, the reduction in inflation also improved the government's fiscal position. Inflation expectations fell, which allowed Treasury bill rates to fall from 194% in March 2001 to 14% by end-2005. Lower inflation reduced inflation uncertainty. Together with the expectation of falling interest rates, this achievement allowed the government to extend the debt maturity and reduce rollover risk, so that the debt stock's average maturity increased from about five months to more than two years. Moreover, the composition of domestic debt (cash and non-cash) changed in favour of fixed-term lira-denominated government bonds, while the share of foreign exchange-linked (either denominated or indexed) securities decreased from 36 to 17% of the debt stock. Despite the tight fiscal policy, the economy recovered strongly from the 2001 recession, with growth averaging more than 7% per year since 2002. The usual negative trade-off between inflation and growth disappeared, as lower inflation



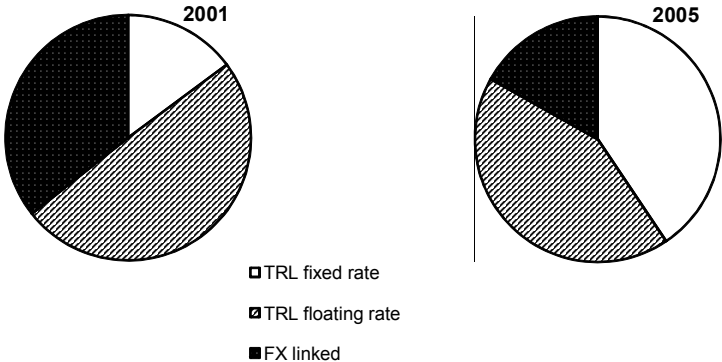
reduced economic uncertainty, lowered nominal interest rates and allowed financial intermediation (and credit) to expand (Figures 7.3 and 7.4).

Figure 7.3. Turkey: Treasury bill maturities and interest rates, 2001-06



Source: Turkish Treasury and Central Bank of Turkey.

Figure 7.4. Turkey: Composition of government debt, 2001 and 2005

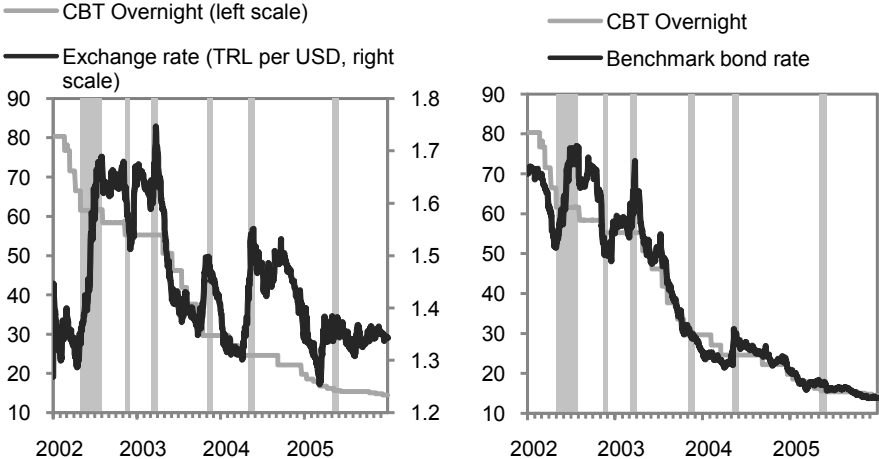


Source: Turkish Treasury.

Despite this trend towards a strong improvement in financial-market performance, there were many fluctuations along the way. However, these were all short-lived. It was understood that it would take time for the initial vulnerabilities to be addressed. Although macroeconomic policies were sound, and despite a strict commitment to economic reform, it would also take time to

persuade market participants, given Turkey’s previous history of imprudent policies. As a result, financial markets remained vulnerable to shifts in sentiment and to international and domestic shocks (Çulha *et al.*, 2005; and Ersel and Özatay, 2006). The need to be conservative in the presence of such uncertainties and the difficulty of raising domestic interest rates in response to shocks were reflected in the generally cautious stance of monetary policy in the transition period before formal IT was adopted. The policy interest rate lagged movements in the secondary-market interest rate most of the time (Figure 7.5).

Figure 7.5. Turkey: Exchange and interest rates, 2002-05



1. Major political events are identified by the shaded areas: May-July 2002 (Prime Minister Ecevit in hospital), November 2002 (pre-electoral uncertainty), March 2003 (Iraq war), November 2003 (Istanbul bombings), May 2004 (political uncertainty over educational reform) and May 2005 (France’s EU referendum).

Source: Central Bank of Turkey.

***Inflation as the sole nominal anchor***

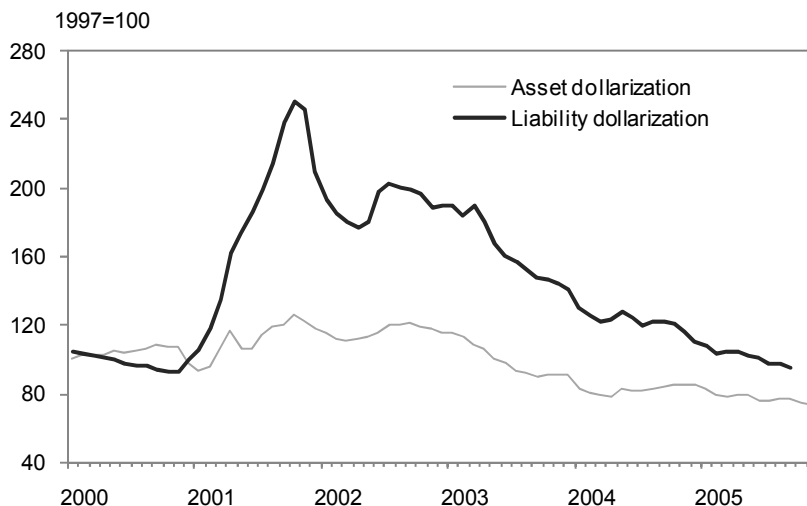
A high pass-through from exchange-rate changes to prices has made it difficult for monetary policy to avoid exchange-rate considerations. Prolonged economic uncertainty due to high, volatile inflation, together with frequent economic crises following failed stabilisation programmes, had led to widespread indexation in the economy, particularly to the exchange rate. Depreciation-inflation spirals became common. Exchange-rate changes were transmitted quickly to prices irrespective of whether shocks were permanent or

temporary. Automatic indexation became widespread among all components of the CPI, even for non-tradables (Başçı *et al.*, 2007).

However, the transition to formal IT and the shift to a floating exchange rate reduced the exchange-rate pass-through in terms of both speed and magnitude. Kara *et al.* (2007) compare the pass-through in the tradable and non-tradable sectors and how they have changed over time. They find evidence of a high pass-through even to non-tradable inflation and interpret this finding as a sign of comprehensive indexation during the pre-floating period. Following the move to a floating exchange rate, they find evidence of less pervasive indexation, with a more pronounced reduction in the pass-through to non-tradable inflation in comparison with inflation in tradables. In another study, Kara and Ögünç (2005) find that, before the float, most of the pass-through was completed within four to five months, a duration that increased to approximately one year in the floating period. The magnitude of the pass-through also fell from 60% in the period of a quasi-fixed exchange rate to 30% in the floating period.

Reflecting the legacy of high, persistent inflation, together with the impact of the 2001 devaluation, Turkey has been a highly dollarised economy (Reinhart *et al.*, 2003). However, implementation of prudent macroeconomic policies and the resulting stable macroeconomic environment during the transition to IT led to a decrease in dollarisation (Yılmaz, 2006). From 2001 to end-2005, the ratio of foreign-currency deposits to total deposits decreased from 55 to 34%, while the share of foreign-currency loans in total loans of the banking sector fell from almost 50 to less than 20%. The share of foreign currency-denominated and indexed bonds in domestic government debt fell from 36 to 17%. In a related study, Akıncı *et al.* (2005) construct composite asset and liability dollarisation indices, which also indicate a sharp reduction in dollarisation (Figure 7.6).

Figure 7.6. Turkey: Asset and liability dollarisation, 2000-05



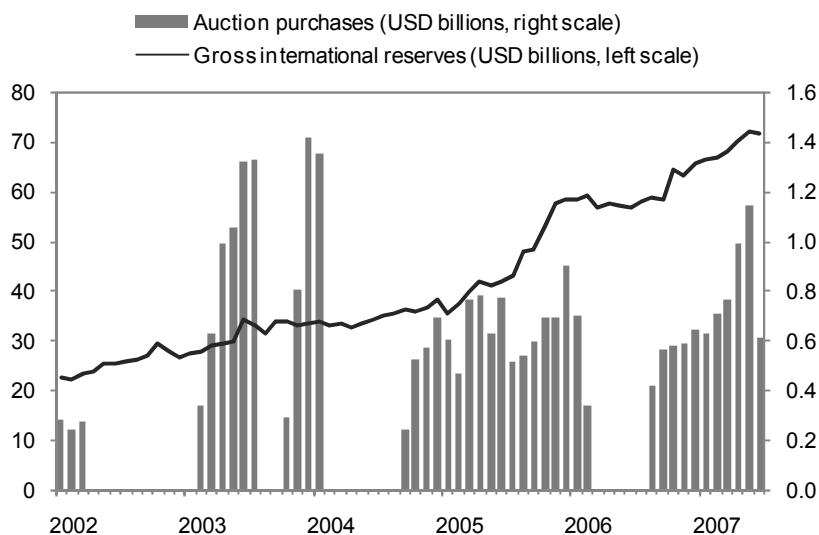
Source: Akinci *et al.* (2005).

This progress in improving the credibility of the lira, finally making it a reliable store of value, and in reducing the exchange-rate pass-through helped to free the CBT from exchange-rate considerations when setting interest rates. However, while the CBT was committed to the float, it could not refrain completely from intervening in the foreign-exchange market. In fact, according to the design of the adjustment programme, it had to intervene. During the crisis, the CBT was supposed to on-lend the funds received from the IMF and the World Bank to the Treasury, which would then make payments in lira (for example, to help roll over domestic government debt), easing the Treasury's financing needs. To sterilise the resulting increase in the money supply, the CBT then had to sell foreign exchange in the spot market (CBT, 2002a). Conversely, once the crisis subsided and the programme started to work, capital inflows returned and currency substitution started to reverse, creating excess supply of foreign exchange. The CBT then needed to use these inflows to rebuild its gross international reserves to repay international creditors, to reduce its reliance on remittances and, by showing that short-term foreign debt payments coming due could be made, to improve investor confidence. But, again, the CBT could only acquire foreign exchange through spot-market interventions. Finally, while committed to a floating exchange rate, from the outset the CBT stood ready to buy and sell foreign exchange to prevent excess volatility in the foreign-exchange market (CBT, 2002a; and CBT, 2006c).

The policy question at the time was how to make these two different types of intervention consistent with the floating exchange-rate regime. As for the interventions required by the adjustment programme, the CBT pre-announced foreign-exchange auctions: foreign-exchange sales in 2001 and purchases from 2002 onwards. Pre-announcing these operations in auctions removed any discretionary element. As regards the second type of intervention, to smooth exchange-rate volatility, at first there was quite limited room for such operations, but as the programme succeeded, they became more prominent. However, the important point is that such interventions were meant to be carried out for purely smoothing purposes and, unlike the first type of pre-announced interventions, they were not to be made continuously in one direction. In this way, the CBT was able to reconcile interventions with a floating exchange rate.

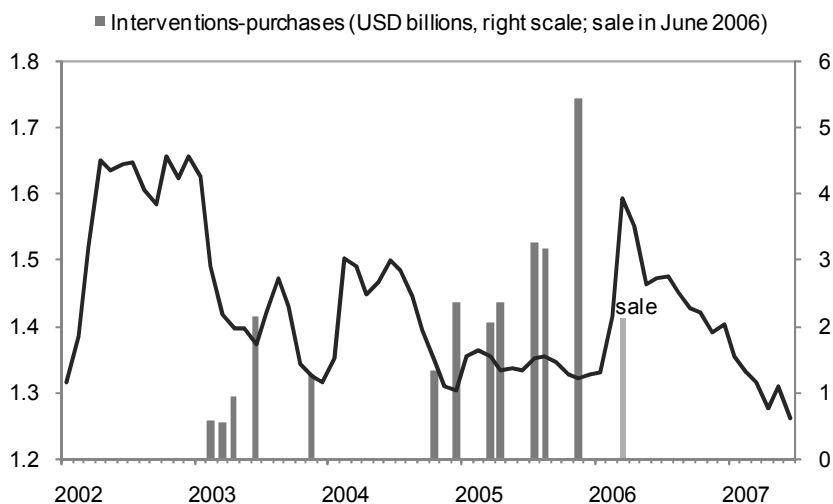
This strategy allowed the CBT to accumulate substantial foreign-exchange reserves. From 1 April 2002 onwards the CBT conducted a series of pre-announced daily foreign-exchange purchase auctions, interrupted only in times of unfavourable market conditions (CBT, 2002b). Discretionary interventions have been much less frequent and mostly through purchases of foreign exchange: smoothing operations in response to excess volatility caused by the improving economic outlook, as well as the favourable global liquidity conditions. All in all, from 2002 to end-2005 the CBT purchased around USD 40 billion in foreign exchange, with discretionary interventions accounting for almost one-half of these purchases. CBT's gross international reserves more than doubled from USD 20 billion in early 2002 to USD 48 billion by December 2005 (with further increases to more than USD 70 billion by 2007) (Figures 7.7 and 7.8).

Figure 7.7. Turkey: International reserve holdings, 2002-07



Source: Central Bank of Turkey.

Figure 7.8. Turkey: Foreign-exchange interventions, 2002-07



Source: Central Bank of Turkey.

## *Overcoming financial dominance*

The existence of weak and over-leveraged financial systems in emerging-market economies constrains the conduct of monetary policy. Fears that monetary tightening may cause a financial crisis make it difficult for monetary policy to be conducted with the sole objective of attaining the inflation target. Fraga *et al.* (2003) call this phenomenon “financial dominance”.

A strengthening of the banking system and the establishment of more effective institutions to regulate and supervise it has been a key element of the reforms introduced since 2001; achieving this objective is therefore also one of the main preconditions for successful IT. Before the 2000-01 financial crisis, the Turkish banking system had channelled resources to finance a rising public-sector debt at high real interest rates. The corporate sector had a similar incentive to buy government bonds, rather than investing in productive assets. In addition, public banks faced the challenge of dealing with huge subsidised loans to state enterprises, the so-called “duty losses”.

Against this background of a fragile financial system, the exchange rate-based stabilisation programme exacerbated the underlying problems of large open positions and maturity mismatches. Structural weaknesses, especially in the public banks, accompanied by a steady erosion of solvency in private banks, led to a growing number of takeovers by the Savings Deposit Insurance Fund (SDIF).<sup>5</sup> Increasing funding needs to cover accumulated large losses forced these banks into large-scale overnight funding, which made them particularly susceptible to liquidity and interest-rate shocks. After the period of high interest rates and exchange-rate devaluations, a financial crisis erupted, leading to severe capital losses in the banking and corporate sectors, bankruptcies and the accumulation of substantial non-performing loans. The resulting weaknesses in the financial system constrained the CBT’s ability to use monetary policy to meet the inflation target, as an increase in interest rates could worsen these problems.

In response to the crisis, the stabilisation programme aimed at eliminating those weaknesses by: *i*) restructuring the state banks to restore financial-market stability, *ii*) solving the problems of the banks taken over by the SDIF to prevent them from contaminating the rest of the financial sector and to limit fiscal pressures, and *iii*) providing a healthy regulatory and supervisory environment for private banks surviving the crisis. To this end, the Treasury issued floating-rate notes to the public and SDIF banks to cover their duty losses and recapitalisation needs. These securities were sold directly to the CBT or through repurchase agreements, and the proceeds were used to finance overnight borrowing requirements. Furthermore, the Treasury issued foreign

exchange-linked bonds to close private banks' open positions (BRSA, 2001a and 2001b; OECD, 2002). Finally, as a temporary measure, a blanket deposit guarantee was introduced to maintain public confidence in the banking system.

The bank restructuring programme soon produced impressive results. The banking system was recapitalised, duty losses of the public banks were eliminated and new duty losses were prevented. For the private banking sector, measures were put in place to ensure that they met capital adequacy requirements and to prevent repeated recourse by weak banks to public money for recapitalisation. The independent banking regulator, the Banking Regulatory and Supervisory Agency (BRSA), which had only become operational just before the crisis, was given enhanced powers.<sup>6</sup> A tightening of regulations and a modernisation of accounting rules enhanced the BRSA's policy effectiveness (OECD, 2002). The establishment of the BRSA, and a perception by banks and the public that its operations were carried out with technical competence, independence, fairness, transparency and authority, were essential for restoring confidence in the financial system.

### ***Creating the IT infrastructure***

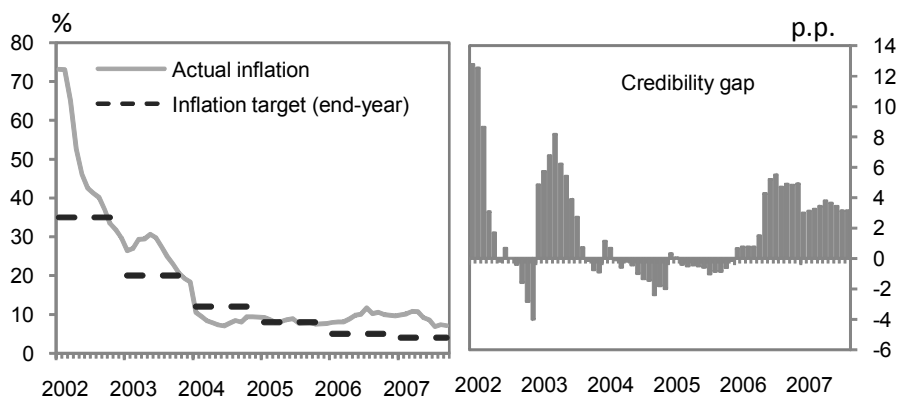
The CBT used the transition period to formal IT to refine its analysis of inflation and to improve its communications. It developed a core quarterly macroeconomic model as a part of its Forecasting and Policy Analysis System (FPAS). The aim was not just to have technical tools with which to make forecasts, but also to introduce institutional changes to improve decision-making. These included: *i*) setting up a broad economic database, *ii*) making regular briefings to decision-makers on conjunctural assessments, *iii*) producing regular reports, such as the restructured Monetary Policy Report (a precursor to the Inflation Report), and *iv*) providing improved inflation forecasts. The core model, being the main part of FPAS, provided a common language in which CBT staff and management could discuss the economic situation and the appropriate monetary policy responses. In addition, the CBT established its own expectations survey and published new leading indicators.

### **The launch of formal IT**

These preparations strengthened the CBT's credibility and helped to lower inflation expectations in line with the inflation target. The CBT's "credibility gap", defined as the difference between the public's expectations of end-of-year inflation and the target rate, narrowed markedly. In fact, from 2002 to 2004 inflation ended the year *below* the official target, which again helped build the central bank's reputation for fighting inflation (Figure 7.9).



Figure 7.9. Turkey: Inflation and the CBT's credibility gap, 2002-07



Source: TURKSTAT and Central Bank of Turkey.

While this track record suggests that formal IT was ready to be introduced already in 2005, outside factors suggested postponing implementation for one more year. *First*, in 2005 the Turkish Statistics Agency launched a revised consumer price index (with base year 2003) with both a different compilation method and basket coverage. The new index behaved quite differently from the previous one, and time was needed to incorporate this new information into the analysis of inflation and to set a revised path for the inflation target. *Second*, uncertainties over the success of the January 2005 currency reform (when six zeros were dropped from the domestic currency) and its impact on money demand also recommended caution.

Despite this postponement, the CBT announced that 2005 would be the final preparatory year and that formal IT would be introduced at the start of 2006. During 2005 additional steps were taken to move the day-to-day implementation of monetary policy closer to the IT framework (CBT, 2004). The main measures taken at the time were as follows: *i*) the Monetary Policy Committee (MPC) began to meet at pre-announced dates and times, *ii*) interest rate decisions began to be published at 9 a.m. the following business day, and *iii*) commentaries highlighting the factors affecting decisions over short-term money-market interest rates began to be published within two business days of the MPC meeting. These announcements also provided signals about the future course of interest-rate decisions, making monetary policy more predictable. However, there was still scope for improving transparency. The CBT still did not publish any medium-term path for inflation, which would have been useful to assess the central bank's performance in reducing inflation. Nor did it

provide full information on the timing of the policy change or rationale of its interest rate decisions, such as by publishing an Inflation Report or the minutes of MPC meetings.

In line with its commitment, in January 2006 the CBT implemented formal IT with the following main elements (CBT, 2005):

- **Inflation target and the target horizon.** The inflation target was set as a “point” target for the end-year inflation rate. This was an accurate measure of the cost of living, monitored broadly and easy to communicate. In line with the introduction in 2006 of a three-year budget framework, and to be consistent with the macroeconomic framework underlying the Pre-Accession Economic Programme, the target path was defined over a three-year horizon. The end-year target was set at 5% for 2006, falling to 4% in 2007 and 2008.
- **Deviation from the target and accountability.** The CBT also announced a path for inflation consistent with the end-year target. A tolerance band of  $\pm 2$  percentage points was also introduced to help measure the CBT’s performance. At the end of each quarter, if actual inflation was forecasted to fall outside the bands, the CBT would be required to write an open letter to the government (which would be made public) explaining the reasons for breaching the target, together with the policy measures it would take to ensure that inflation would return to the target in the medium term. However, the CBT emphasised that its goal was the point target: the tolerance band was only used to assess performance and to improve communication of monetary policy.
- **Conditions for revising the targets.** The CBT highlighted its commitment to the pre-announced inflation target. Although temporary shocks might call for revisions in inflation forecasts, these would not require a change in the inflation target. For instance, in the event of a one-off adjustment in indirect taxes, the inflation outlook would most likely deviate from the target in the short run; therefore, the CBT would not meet the early performance criteria on the target path. However, the impact of the adjustment would die out in the one-year-ahead inflation forecasts. As a result, a change in the medium-term target would not be required. Instead, the short-term forecasts would be adjusted accordingly, and the CBT would inform the government as well as the public by publishing open letters disclosing the reasons for the short-term target breaches. In this case, the points of reference for economic agents would be the inflation

forecasts for the short term and the inflation target for the medium term. Abrupt changes leading to permanent deviations from the target path might require revisions, if the medium-term targets were deemed to be no longer valid. But, in such cases, the new target would be set in conjunction with the government, as required by law.

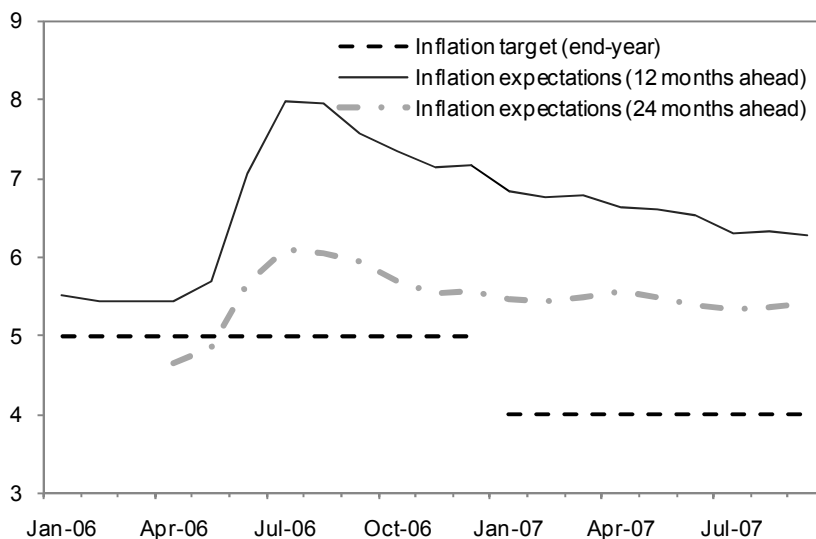
- **The IT regime and IMF conditionality.** Consistent with the shift to IT, the targets in the IMF programme were revised. The performance criterion for base money and the indicative target for net domestic assets were replaced by “inflation consultation criteria”. Accordingly, if inflation were to remain below or above the target-consistent path by one or more percentage points (inner-band), there would be negotiations with IMF staff during each quarterly review. The CBT would inform the public of the reasons for the deviation through its regular reports. If inflation were to fall outside the target-consistent path by two or more percentage points (outer-band), this would be considered a violation of programme conditionality, and the CBT would be required to announce measures to be taken in line with the principles of the programme. In other words, as required by the CBT Law (Article 42), the CBT would submit a written document to the government, which would be presented to the IMF as a part of programme conditionality. Finally, given the programme’s focus on safeguarding the balance of payments, the target for net international reserves was retained.
- **Inflation Report and forecasts.** A new quarterly Inflation Report became the main tool for communicating monetary policy decisions to the public. Compared to its predecessor (the Monetary Policy Report), the Inflation Report’s main distinguishing feature was the inclusion of the CBT’s inflation forecasts and explanations of any revisions to those forecasts. The Report would also contain signals of likely future policies, making monetary policy more predictable and thereby enhancing transparency and accountability. The Report would also feature a section on the discussion of possible risks to the outlook and their impact on the inflation forecast.
- **Decision-making process.** The MPC took responsibility for setting interest rates. Although the MPC had met monthly since 2001, it only had an advisory role. Under formal IT, however, MPC members would vote on interest rate decisions. A number of administrative reforms were introduced too. Meeting dates were pre-announced and shifted to the middle of the month. The meeting itself would be held in

two sessions: the first session included briefings by CBT staff and the Treasury; MPC members would vote in the second closed session. The decision and its rationale would be announced in a press release to be issued in the evening following the meeting and posted on the CBT's website.

### Formal IT (2006-07)

Formal IT had a difficult start. Already in the first quarter of 2006 the decline in inflation came to a halt. The immediate cause was a combination of supply shocks: rising oil prices, higher prices of tobacco and unprocessed food, and an increase in gold prices. But from May 2006 market sentiment started to worsen, with global liquidity conditions tightening, triggering capital outflows in many emerging markets. Turkey's EMBI spread increased by around 150 basis points. Fluctuations in financial markets led non-residents to sell government securities and demand foreign currency, as a result of which the lira depreciated against the US dollar by more than 20%. The widening current-account deficit, as well as domestic uncertainties (some also mentioned the delayed appointment of a new CBT governor) may also have been a factor. Inflation expectations worsened and the credibility gap widened (Figure 7.10).

Figure 7.10. Turkey: Inflation expectations, 2006-07



Source: Central Bank of Turkey.

Together with these supply shocks, a depreciation of the domestic currency led to a deterioration in inflation expectations. These developments indicated that the impact might be more than just a relative price adjustment. In response, the CBT acted decisively by holding an extraordinary MPC meeting on 7 June in which it raised the policy rate by 175 basis points. The decision was well received and helped to calm markets. In its regular 20 June meeting, the MPC concluded that there had been no new information and decided to leave the rate unchanged. However, in the following days markets turned more unstable and inflation expectations deteriorated sharply. In response, the MPC held another extraordinary meeting on 25 June. Although the MPC believed that the market instability did not reflect fundamentals, it did have the potential for further worsening expectations and thus threaten the medium-term inflation targets. The MPC therefore increased interest rates by another 225 basis points: a combined 400 basis-point increase during June.

The CBT tightened further by withdrawing excess liquidity through a combination of one- and two-week deposit purchase auctions and foreign-exchange sales (through both discretionary interventions and auctions). It also raised its lending rate by 600 basis points (CBT, 2006a). However, these efforts could not prevent inflation from exceeding the ceiling of the tolerance band in the second quarter, as well as in the consecutive quarters of 2006. The CBT responded by sending open letters to the government explaining the reasons for the target breaches and the policy measures that it had taken and would still take to bring inflation back down to the medium-term target. It also issued revised forecasts showing that the medium-term targets could be achieved through a cautious monetary policy stance accompanied by prudent fiscal and incomes policies in line with the inflation targets and management of expectations.

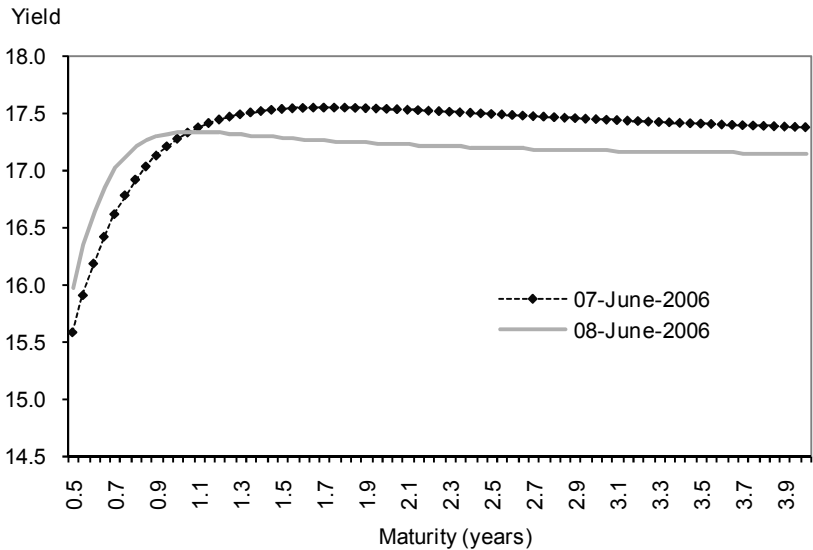
Financial conditions improved in the remainder of the year. Risks of high inflation in the industrial countries eased, allowing the United States Federal Reserve Bank to keep interest rates on hold. There were also signs of a partial “correction” in unprocessed food prices. Nevertheless, in subsequent meetings the MPC concluded that these developments were not strong enough to offset the high underlying inflation trend compared with the medium-term targets. The MPC also highlighted upside risks in food and commodity prices, as well as uncertain global liquidity conditions. Therefore, the MPC kept its policy rate on hold for the remainder of the year and retained its tightening bias in its statements.

Parallel to these developments, in its subsequent open letters to the government (CBT, 2006b and 2007a), the CBT noted that the monetary tightening since June 2006 had been successful in containing any further

deterioration in inflation and medium-term inflation expectations. By the end of September 2006, inflation had fallen to 10.6% and to single digits by end-December, although it remained above the medium-term target of 4%. The accumulated impact of the various cost-push shocks, combined with a delayed exchange-rate pass-through, kept inflation at high levels. But the non-accommodative monetary stance was expected to slow demand and to bring inflation down to its target by the end of the first quarter of 2008. However, by referring to upside risks to the baseline inflation projection, such as a weaker-than-envisaged slowdown in aggregate demand, a possible deterioration in global financial market sentiment and higher-than-expected inflation inertia, the CBT made it clear in its letters that it would conduct monetary policy with a tightening bias in the period ahead.

The policy response in June was the first increase in the policy rate in almost five years. Back in 2001, when fiscal dominance concerns prevailed, a similar response had backfired: the exchange rate depreciated, and secondary-market rates increased by almost 600 basis points. But, with the preconditions for IT now in place, markets reacted positively to these actions, which signalled the seriousness of the CBT’s disinflation effort and its strong commitment to its medium-term targets. The long-end of the yield curve shifted down, the worsening of inflation expectations stopped, and the exchange rate appreciated in line with more standard monetary transmission mechanisms (Figure 7.11).

Figure 7.11. Turkey: Yield curve developments (7-8 June 2006)

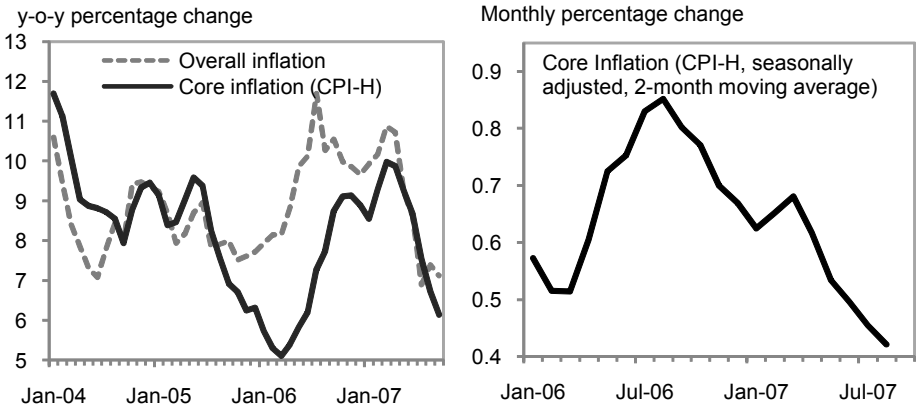


Source: Akinci *et al.* (2006).

Despite the overshooting of the end-2006 target, the medium-term inflation targets were not revised. Although other countries, such as Brazil in 2003, had revised their inflation targets in the face of similar external shocks, the CBT believed that increasing the end-2007 target might have adverse effects on inflation expectations and adjustments in nominal wages, and might also undermine the credibility of future policy commitments. With the lagged impact of interest rates on inflation (estimated at roughly six quarters), the 2007 target also seemed attainable, especially given the tightening bias of 2006. The CBT and the government therefore reaffirmed the 4% inflation target for 2007 and extended it through 2009 (CBT, 2006c).

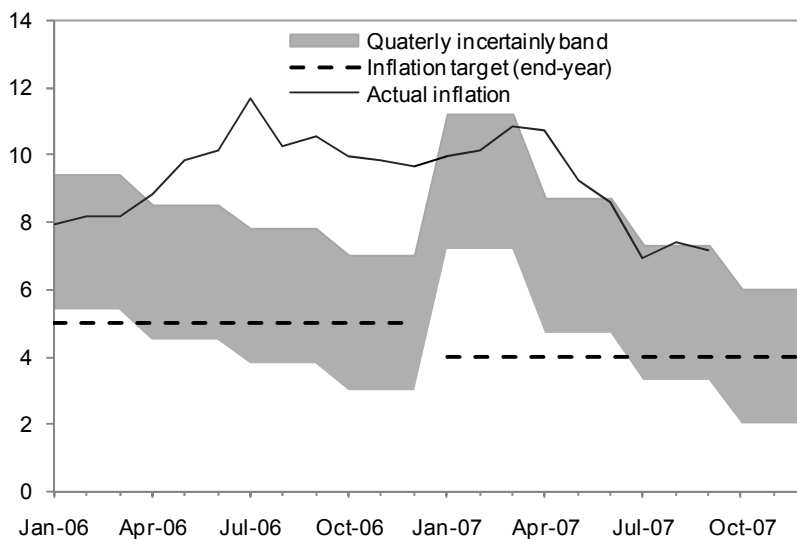
Disinflation continued in 2007. The monetary tightening that started in mid-2006 led to a slowdown in domestic demand (mostly lower spending on consumer durables), while net exports increased. Despite rising oil prices and high food prices, inflation in durable goods and services fell considerably. Core inflation also started to fall. Headline inflation fell to 8.6% by the end of the second quarter and to 7.1% by the end of the third quarter, just within the uncertainty bands (Figures 7.12 and 7.13).

Figure 7.12. Turkey: Headline and core inflation, 2004-07



Source: TURKSTAT and Central Bank of Turkey.

Figure 7.13. Turkey: Inflation performance under IT, 2006-07



Source: TURKSTAT and Central Bank of Turkey.

Despite these favourable developments, through the first half of 2007 the MPC decided to maintain its cautious policy stance, keeping the policy rate unchanged. Its decision was guided by possible upside risks: *i*) the gap between inflation expectations and the inflation targets, *ii*) increases in oil and other commodity prices, and *iii*) stickiness in services-price inflation (CBT, 2007b). However, in its July and August meetings the MPC noted more favourable developments in services-price inflation and mentioned the possibility of a measured easing starting in the last quarter of the year. However, the timing and extent of any policy easing would remain data-dependent, reflecting any new information regarding external demand, public expenditures and other determinants of the medium-term inflation outlook (CBT, 2007c and 2007d).

The CBT finally cut the policy rate in September 2007, somewhat earlier than markets had anticipated, by 25 basis points to 17.25%. It based this decision on the continuous decline in inflation (owing to the earlier strong monetary tightening) and faster-than-expected services-price disinflation. It also noted that the tightening of international credit conditions might result in a slowdown in world demand, which would also reduce future inflation. While domestic demand was expected to recover moderately in the second half of the year, the MPC also expected that this recovery would be constrained by the planned containment of public expenditures needed to meet the 2007 budget



target. While the rate cut decision was taken to signal the start of a policy easing, the MPC also noted that further cuts would be cautious and measured. Major risks to the medium-term inflation outlook included volatile unprocessed food prices, continued oil price increases and stickiness in inflation expectations. Therefore, any further easing would again be data-dependent, reflecting new information related to global liquidity conditions, external demand, public expenditures and other determinants of the medium-term inflation outlook (CBT, 2007e; Yılmaz, 2007).

## **Conclusion and challenges ahead**

Since the 2000-01 crisis the Turkish economy has experienced a remarkable transformation. This is due mainly to a strict commitment to the stabilisation programme based on tight fiscal and monetary policies, accompanied by a comprehensive structural reform agenda. Inflation has fallen to its lowest levels in the last three decades, nominal and real interest rates have declined sharply, and the economy has grown rapidly. The public debt ratio has declined significantly, easing concerns over debt sustainability. This transformation has also witnessed the gradual adoption of fully-fledged IT. Although the initial economic conditions were difficult, as the prospects for the economy improved the preconditions for IT were put in place, readying the CBT to act under the new regime. By 2006, concerns over fiscal and financial dominance had largely eased and exchange-rate considerations had lessened; the CBT was institutionally well-prepared and technically well-equipped for IT.

At first sight, the early years of formal IT might not be considered auspicious, because the previous disinflation trend had been reversed. The inflation target was missed in 2006 and is likely to be missed again in 2007. However, during this difficult period the CBT's decisive actions signalled its strict commitment to its medium-term inflation targets. Prospects for disinflation therefore improved, as evidenced by an improvement in actual and expected inflation trends. The CBT has also communicated its policy actions clearly, using many platforms, which has enhanced transparency, accountability and predictability of monetary policy.

Turkey's experience with IT is short but quite intense. Therefore, it provides several lessons for future inflation-targeters, especially those in emerging-market economies. Freedom from the constraints imposed by fiscal and financial dominance is a key for successful IT, as shown by the contrasting experiences of 2001 and 2006. Whether decisive monetary policy action succeeds or fails in achieving price stability depends very much on this freedom. Moreover, policy implementation under IT should be considered as a continuous process, which policymakers will need to strengthen over time. In

this spirit, enhancing communication with the public will bolster the framework for monetary policy.

## Notes

1. The programme also included a pre-announced exit strategy from the peg. Starting from 1 July 2001, the exchange-rate bands were to widen at a rate of 15 percentage points per annum, measured from floor to ceiling. The total width of the band would thus reach 7.5% by end-December 2001, 15% by end-June 2002 and 22.5% by end-December 2002 (Erçel, 1999). This process would eventually be accompanied by the introduction of IT. It is not clear whether knowledge of this pre-announced exit strategy may have weakened the credibility of the crawling peg, when it later came under pressure.
2. See Akyüz and Boratav (2001), Alper (2001) and Özatay and Sak (2002) for detailed accounts of the 2000-01 financial crisis.
3. The targets were first announced in late 2001 in Turkey's Eighth Five-Year Development Plan (2001-05) and in the 2002 Annual Programme.
4. See Blanchard (2004) and Favero and Giavazzi (2004) for the case of Brazil. For Turkey, see Aktaş *et al.* (2005), who estimate default risks for the period 1999-2003, and Özatay (2005) for a model showing the importance of fiscal discipline (and market expectations that it would be maintained) for attaining a good equilibrium.
5. Thirteen banks were taken over between 1997-2001 and ten in 2000-01.
6. The BRSA regulates and supervises the private banking sector. It was set up in June 1999 with the enactment of Banking Law No. 4 389 and started its operations in September 2000, when it became the sole authorised agency for banking-sector regulation and supervision.

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## List of acronyms

<b>ADF</b>	Augmented Dickey-Fuller Test
<b>AR</b>	Autoregressive Model
<b>BCB</b>	Central Bank of Brazil ( <i>Banco Central do Brasil</i> )
<b>BER</b>	Bureau for Economic Research
<b>BI</b>	Bank Indonesia
<b>BIS</b>	Bank for International Settlements
<b>BRSA</b>	Banking Regulatory and Supervisory Agency
<b>CBC</b>	Central Bank of Chile
<b>CBT</b>	Central Bank of Turkey
<b>CDT</b>	Colombian Interest Rate ( <i>Certificado de Depósito a Término</i> )
<b>CETES</b>	Mexican Interest Rate ( <i>Certificados de la Tesorería de la Federación</i> )
<b>CMN</b>	Brazilian National Monetary Council ( <i>Conselho Monetário Nacional</i> )
<b>CNB</b>	Czech National Bank
<b>COPOM</b>	Brazilian Monetary Policy Committee ( <i>Comitê de Política Monetária</i> )
<b>CPI</b>	Consumer Price Index
<b>CPIX</b>	Consumer Price Index (excluding mortgage interest costs)
<b>DSGE</b>	Dynamic Stochastic General Equilibrium
<b>EMBI</b>	Emerging Market Bond Index
<b>FAVAR</b>	Factor-Augmented Vector Autoregressive Model
<b>FDI</b>	Foreign Direct Investment
<b>FIML</b>	Full Information Maximum Likelihood
<b>FPAS</b>	Forecasting and Policy Analysis System
<b>FTO</b>	Fine-Tuning Operations
<b>GDP</b>	Gross Domestic Product
<b>GNP</b>	Gross National Product
<b>IGP-DI</b>	Brazilian General Price Index ( <i>Índice Geral de Preços - Disponibilidade Interna</i> )

<b>IMACEC</b>	Chilean Monthly Economic Activity Index ( <i>Indicador Mensual de Actividad Económica</i> )
<b>IMF</b>	International Monetary Fund
<b>IMT</b>	Inflation Management Team
<b>INPC</b>	Mexican Consumer Price Index ( <i>Índice Nacional de Precios al Consumidor</i> )
<b>IPC</b>	Chilean and Colombian Consumer Price Indices ( <i>Índice de Precios al Consumidor</i> )
<b>IPCA</b>	Brazilian Consumer Price Index ( <i>Índice Nacional de Preços ao Consumidor</i> )
<b>IRF</b>	Impulse Response Functions
<b>IT</b>	Inflation Targeting
<b>M-GARCH</b>	Multivariate Generalised Autoregressive Conditional Heteroskedasticity Model
<b>MPC</b>	Monetary Policy Committee
<b>MPR</b>	Monetary Policy Report
<b>OMO</b>	Open-Market Operations
<b>PP</b>	Phillips-Perron Test
<b>QPM</b>	Quarterly Projection Model
<b>SADC</b>	Southern African Development Community
<b>SARB</b>	South African Reserve Bank
<b>SBI</b>	Bank Indonesia Certificates ( <i>Sertifikat Bank Indonesia</i> )
<b>SDIF</b>	Savings Deposit Insurance Fund
<b>SEE</b>	Survey of Economic Expectations
<b>SELIC</b>	Brazilian Policy Interest Rate
<b>SIC</b>	Schwarz Information Criterion
<b>TJLP</b>	Brazilian Long-Term Interest Rate ( <i>Taxa de Juros de Longo Prazo</i> )
<b>TPM</b>	Chilean Policy Interest Rate ( <i>Tasa de Política Monetaria</i> )
<b>TR</b>	Brazilian Reference Interest Rate ( <i>Taxa Referencial de Juros</i> )
<b>UF</b>	Chilean <i>Unidad de Fomento</i>
<b>VAR</b>	Vector Autoregressive Model
<b>VMA</b>	Vector Moving Average



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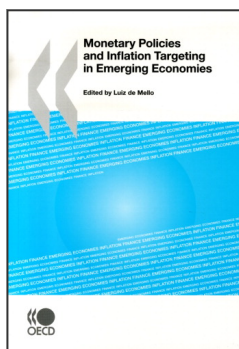
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