

# High public debt, multiple equilibria and inflation targeting in Turkey

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## I. Introduction

Even programmes that are based on sound macroeconomic fundamentals in economies with an inherited high public debt stock are prone to risks stemming from macroeconomic misbehaviour in the past. 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 rates and sharp depreciation, from a good equilibrium with low inflation, low real rates and a stable currency. The possibility of multiple equilibria limits the efficiency of inflation targeting in such economies. In this note, we discuss these issues for the Turkish economy in the light of the recent experience under the IMF based programme, which has been implemented since May 2001.

## II. High public debt and multiple equilibria in theory

Periods following recent currency crises have generally witnessed a sharp increase in public debt.<sup>2</sup> Models built on the Barro and Gordon (1983) framework show that if public debt is financed by government bonds, time inconsistency of optimal policy can generate multiple equilibria. In such models, a shift in market sentiment can push an economy to a bad equilibrium even if there is no deterioration in fundamentals. This occurs because the costs of honouring public debt or maintaining a fixed exchange rate regime depend on private agents' expectations about future policy. Calvo (1988) presents a model in which the possibility of debt repudiation is the root cause of multiple equilibria. Sachs et al (1996) show that certain levels of debt can give rise to multiple equilibria, while others do not. What is worrying from the perspective of central banks and governments in the emerging market economies is that anything, even sunspots, can be the reason behind a change in private agents' expectations.

## III. Some stylised facts for the Turkish economy in the May 2001-November 2003 period

The evolution of macro fundamentals, interest rates and the exchange rate in Turkey in the post-crisis period raises interesting questions. In mid-May 2001, three months after the crisis broke out, Turkey started to implement a new stabilisation programme. The banking sector was collapsing, calling for immediate action by the government. The rescue programme increased the public debt-to-GDP ratio sharply. Other main pillars of the May 2001 programme were macroeconomic discipline and an ambitious agenda for structural reforms.

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<sup>2</sup> The jump in public debt mainly stems from the costs of resolving financial sector crises. For the most recent crises these costs are estimated at 34% of GDP for Korea, 20% for Mexico (Hoggarth and Saporta (2001, p 162)) and 33% of GNP for Turkey (World Bank (2003, p 21)).

The programme was supported by large IMF and World Bank credits. From late 2001, the programme started to show results. Inflation expectations began to follow a downward trend, the rate of inflation declined almost continuously and the public debt-to-GDP ratio was significantly reduced. The Turkish economy started to recover and the growth rate registered in 2002 was the second highest in major emerging market economies after China. Growth was sustained in 2003. The Treasury's borrowing rate declined to 28% in November 2003 from 194% in March 2001 and 95% in July 2001 (Table 1).

Table 1  
**Turkey: selected macroeconomic indicators**

In percentages

	Growth rate <sup>1</sup>	Expected inflation <sup>2</sup>	Expected inflation <sup>3</sup>	Wholesale inflation	Consumer inflation	Public debt stock/GDP	Interest rate <sup>4</sup>
2001.03	-1.0	55.0	na	35.1	37.5	72.1	193.7
2001.06	-9.8	63.3	na	61.8	56.1	98.2	88.4
2001.09	-7.5	69.8	64.8	74.7	61.8	105.1	87.6
2001.12	-10.3	72.7	69.8	88.6	68.5	99.7	74.1
2002.03	2.1	52.6	43.6	77.5	65.1	91.1	68.4
2002.06	8.9	45.4	35.2	46.8	42.6	95.0	72.2
2002.09	7.9	42.0	34.3	40.9	37.0	92.2	62.2
2002.12	11.4	35.0	31.0	30.8	29.7	87.4	49.8
2003.03	8.1	35.5	27.3	35.2	29.4	87.6	59.9
2003.06	3.9	29.3	25.4	29.6	29.8	81.7	46.0
2003.09	5.5	24.4	20.5	19.1	23.0	76.3	32.2

Sources: Central Bank of the Republic of Turkey; SIS; Treasury.

Note: <sup>1</sup> Annual percentage change. <sup>2</sup> Business survey of the central bank, expected year-end wholesale price inflation. <sup>3</sup> Expectations survey of the central bank, expected year-end consumer price inflation. <sup>4</sup> Average compound interest rates realised in Treasury auctions, weighted by net sales.

However, there were significant, though temporary, deviations from this positive trend. From May to October 2001, the interest rate followed an upward trend. This trend reversed from October 2001 to May 2002. At the beginning of May 2002, another reversal occurred. This deterioration stopped in the last quarter of 2002, but resumed again with the outbreak of the war in Iraq in May 2003. The time path for the exchange rate was similar (Figures 1 and 2). What was the main reason behind these temporary but sometimes relatively long deviations from the main trend?

The key to understanding these contrasting phenomena is the high domestic debt-to-GDP ratio and concerns over its sustainability. Although the stabilisation programme and the accompanying structural reforms imposed monetary and fiscal discipline, reducing the debt-to-GDP ratio to manageable levels required considerable time. In the meantime, a highly indebted economy is vulnerable to changes in market sentiment, in particular to concerns about debt sustainability. In other words, the high level of debt increases the possibility of multiple equilibria. Given macroeconomic fundamentals, the type of equilibrium the economy finds itself in or approaching mainly is determined by expectations. Negative expectations can lead the economy to a bad equilibrium, while positive expectations are likely to lead it to a good equilibrium.

Figure 1  
Turkey: interest rates

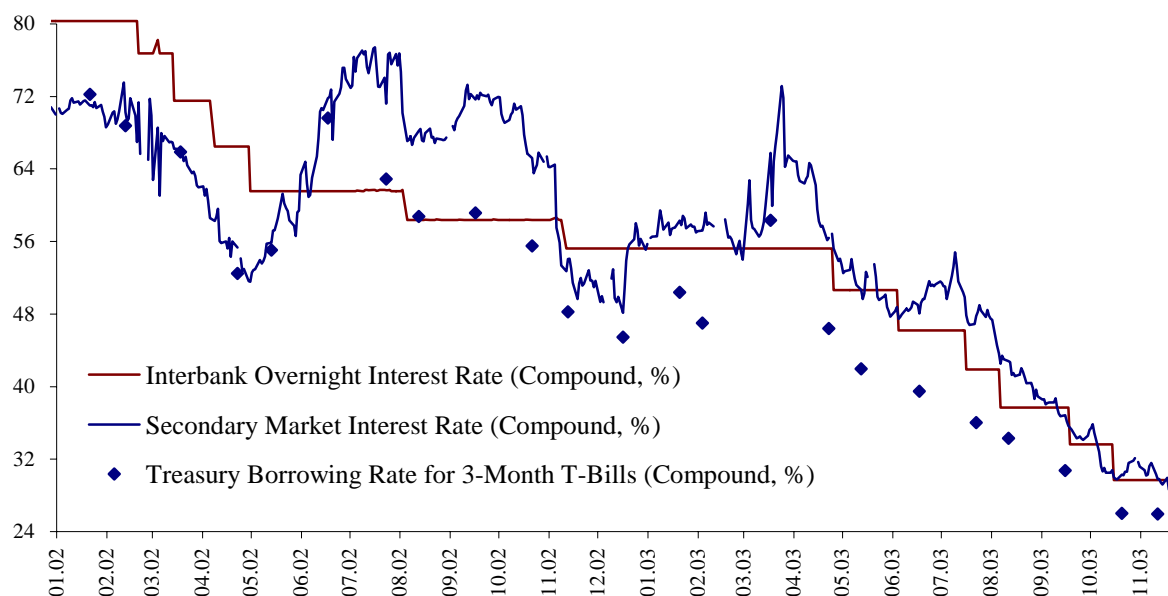
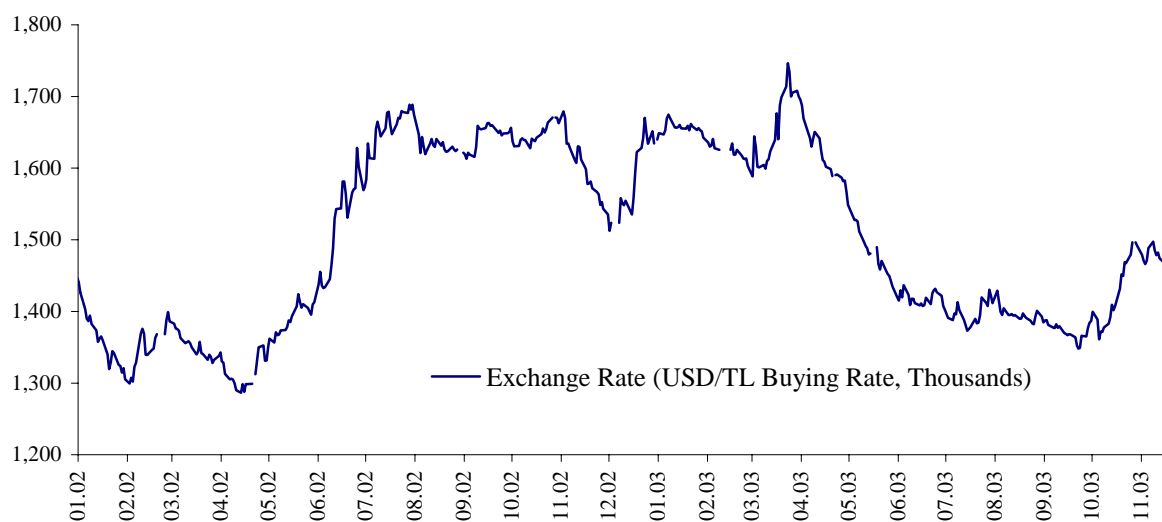


Figure 2  
Turkey: exchange rate



But what causes the expectations to change? The keywords here are sustainability of public debt. The evolution of the debt-to-GDP ratio is a function of the real growth rate, the real interest rate and the ratio of the primary budget surplus to GDP. Policymakers cannot control the real growth rate and the real interest rate. Leaving monetary policy aside, a government can only control its budget and affect the real interest rate through the debt sustainability channel. A tight fiscal policy will increase confidence about sustainability of the debt and hence curb the country risk premium, provided that fiscal policy is regarded as credible by the private sector. What happens to the real growth rate is more complicated. However, there is an extensive body of literature on expansionary fiscal contractions in

highly indebted countries.<sup>3</sup> That is, there is a high probability that fiscal discipline would reduce real interest rates and increase growth, which is obviously good news for debt sustainability.

Hence, any development that increases concerns about the viability of fiscal discipline has the potential to move the economy to a bad equilibrium. One candidate is domestic politics. Note that the IMF backed programmes have a “checklist”, ie a detailed timetable of policy actions not only with regard to fiscal and monetary policies, but also in reforming the economy. A public debate about this checklist among members of the cabinet may trigger a political shock and increase concerns about debt sustainability. External shocks such as 11 September or the war in Iraq can trigger similar effects. Another candidate is international developments that lead to reversals of capital flows to emerging market economies.

#### **IV. Multiple equilibria and inflation targeting**

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 substantial, that is, the rate of depreciation of the domestic currency causes inflation to rise significantly. In such an economy, negative developments that raise concerns about debt sustainability would not only increase interest rates but also weaken the domestic currency. The reasoning is similar: investors in new government bonds would ask for higher rates to compensate for increases in default risk associated with rising inflation and the weakening currency. At the same time, the demand for assets denominated in foreign currencies would increase and reinforce the weakening of the domestic currency. Therefore, a central bank that raises its policy rate in response to a potential rise in inflation induced by the weakening of the currency faces two related problems. First, a rise in its overnight rate could signal to the markets that things are not going in the right direction. This could in turn increase the perceived default risk and, hence, the market rate while weakening the exchange rate. Second, an increase in the policy rate and the effect of the higher market rate and weaker exchange rate would increase the burden of public debt service and jeopardise debt sustainability. The domestic currency would depreciate in these circumstances, which is inflationary on the assumption that the pass-through effect is significant. In other words, increasing the short-term interest rate to cope with inflationary pressures would backfire.

A counterargument could be put forward here. A central bank that does its job by raising interest rates would be credible and such a credible policy decision would more than offset the negative effects on inflation described above. Analysing which argument is correct is beyond the scope of the present note. However, the fact that raising interest rates under such circumstances is likely to backfire cannot be rejected easily. Given this possibility, it follows that the effectiveness of inflation targeting in highly indebted economies is asymmetric: cutting the policy rate does not pose debt sustainability problems, whereas raising it does.<sup>4</sup>

The Central Bank of Turkey (CBT) has been implementing “implicit inflation targeting” under a floating exchange rate regime since the beginning of 2002. In other words, since January 2002 it has been changing its policy rate based solely on the inflation outlook. The CBT has also been explaining the rationale behind its decisions through public releases. Hence, the core of fully fledged inflation targeting has been in place. The timing of the rate changes and the meetings of the Monetary Policy Committee have not been known by the markets, and that is why we call it “implicit”. In the absence of domestic or foreign shocks and in view of strong macroeconomic fundamentals and a positive inflationary outlook, the CBT has cut its overnight rate 13 times since January 2002 (Figure 1). However, it has remained silent at times of shocks that had the potential to push the economy temporarily off course.

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<sup>3</sup> See for example Giavazzi and Pagano (1990), Perotti (1999) and Barry and Devereux (2003).

<sup>4</sup> In a recent paper, Blanchard (2003) discusses similar problems for inflation targeting in Brazil and proposes a formal model that explains the positive correlation between interest rates and the rate of depreciation of the domestic currency.

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