Policies to Improve Turkey's Resilience to Financial Market Shocks

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**POLICIES TO IMPROVE TURKEY'S RESILIENCE
TO FINANCIAL MARKET SHOCKS**

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ABSTRACT/RÉSUMÉ

Policies to improve Turkey's resilience to financial market shocks

Since the crisis of 2001, an impressive package of fiscal consolidation and institutional reform has created a strong foundation for economic growth. As a result, GDP growth has been strong and stable, inflation has fallen, and the public debt burden has been significantly reduced. Yet the current account deficit is large, exchange rate movements have been volatile, and the recent increase in inflation and rising levels of private sector external debt draw attention to Turkey's vulnerabilities and to the need for additional policies to contain risks. This paper summarises the vulnerabilities of the Turkish economy and the steps that can be taken to improve macroeconomic resilience to shocks.

This Working Paper relates to the 2006 Economic Survey of Turkey (www.oecd.org/eco/surveys/turkey).

JEL Classification: E52, E60, F40, H60

Keywords: Turkey, shocks, resilience, debt sustainability, monetary policy, fiscal policy.

Les politiques pour renforcer la résilience de la Turquie aux chocs émanant des marchés financiers

Depuis la crise de 2001, un remarquable programme d'assainissement économique et de réforme institutionnelle a créé de robustes fondations pour la croissance économique. En conséquence, l'expansion du PIB a été forte et stable, l'inflation a décru et le fardeau de la dette publique a été nettement allégé. Cependant, le déficit de la balance courante est élevé, les fluctuations du taux de change sont irrégulières et l'accélération récente de l'inflation comme la montée de l'endettement attirent l'attention sur les points vulnérables de la Turquie et sur la nécessité de prendre de nouvelles initiatives pour contenir les risques. Ce document recense les points vulnérables de l'économie turque et présente les mesures susceptibles d'améliorer la résilience macroéconomique aux chocs.

Ce Document de travail se rapporte à l'Étude économique de la Turquie 2006 (www.oecd.org/eco/etudes/turquie)

Classification JEL : E52, E60, F40, H60

Mots clés : Turquie, chocs, résilience, durabilité de dette, politique monétaire, politique fiscale.

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POLICIES TO IMPROVE TURKEY'S RESILIENCE TO FINANCIAL MARKET SHOCKS

Anne-Marie Brook[1]

**Despite good macroeconomic outturns, recent turmoil has highlighted Turkey's vulnerabilities**

1.   As illustrated in Figure 1, Turkey has made good progress in stabilising the key macroeconomic indicators in recent years, notwithstanding the recent upward blip in inflation. In particular, Turkey has achieved significant primary fiscal surpluses every year, including outcomes close to the target of 6.5% of GDP in the past three years. Moreover, since 2001 the total fiscal deficit has fallen from 30% of GDP to around 1%, net public debt has fallen from around 90% of GNP to around 50%, inflation has fallen from over 50% to around 10%, and interest rates have fallen from triple digits to below 20%.

2.   These positive outcomes are due mainly to the combination of impressive fiscal consolidation efforts and sound disinflationary policies. At the same time, Turkey's positive macroeconomic performance is also due in part to the benign external environment, characterised by unusually low global interest rates, strong world growth and high risk appetites for emerging market assets. Until May this year, when global risk premiums reversed trend, this environment had provided Turkey with a valuable window of opportunity to stabilise the real economy and significantly improve the stability of the banking sector and the quality of monetary and fiscal institutions. Indeed Turkey's experience is not unique; the falls in Turkey's risk premia have been matched by those in other emerging markets (Figure 2, panel A).

3.   Turkey was not the only emerging market economy to have been hit by the reduced risk appetite of the international financial markets in the first half of 2006. However, it has been more affected than the others, as illustrated by the fact that Turkey's risk spread widened by much more than the EMBI index (Figures 2, panel B). There are a number of reasons for this. First, even prior to the change in international investor sentiment, many analysts were already pointing to Turkey's large and growing current account deficit, which was widely seen as being unsustainable. At the same time, there was evidence that strong capital inflows had been fuelling a credit boom. Second, the change in international investor sentiment coincided with concerns about the independence of key institutions and was followed soon after by an inflation surprise, prompting some deterioration in central bank credibility and a reassessment of expected inflation. Finally, some emerging political tensions within Turkey together with concerns about progress with structural reform may also have amplified market uncertainty. The challenges posed by these developments, and the possible tools that can be used to address them, are the focus of this paper. In particular this paper considers the extent to which the Turkish economy still remains vulnerable to both external and internal shocks, and identifies some key reform priorities oriented towards improving Turkey's resilience to shocks.

Figure 1. Positive macroeconomic fundamentals
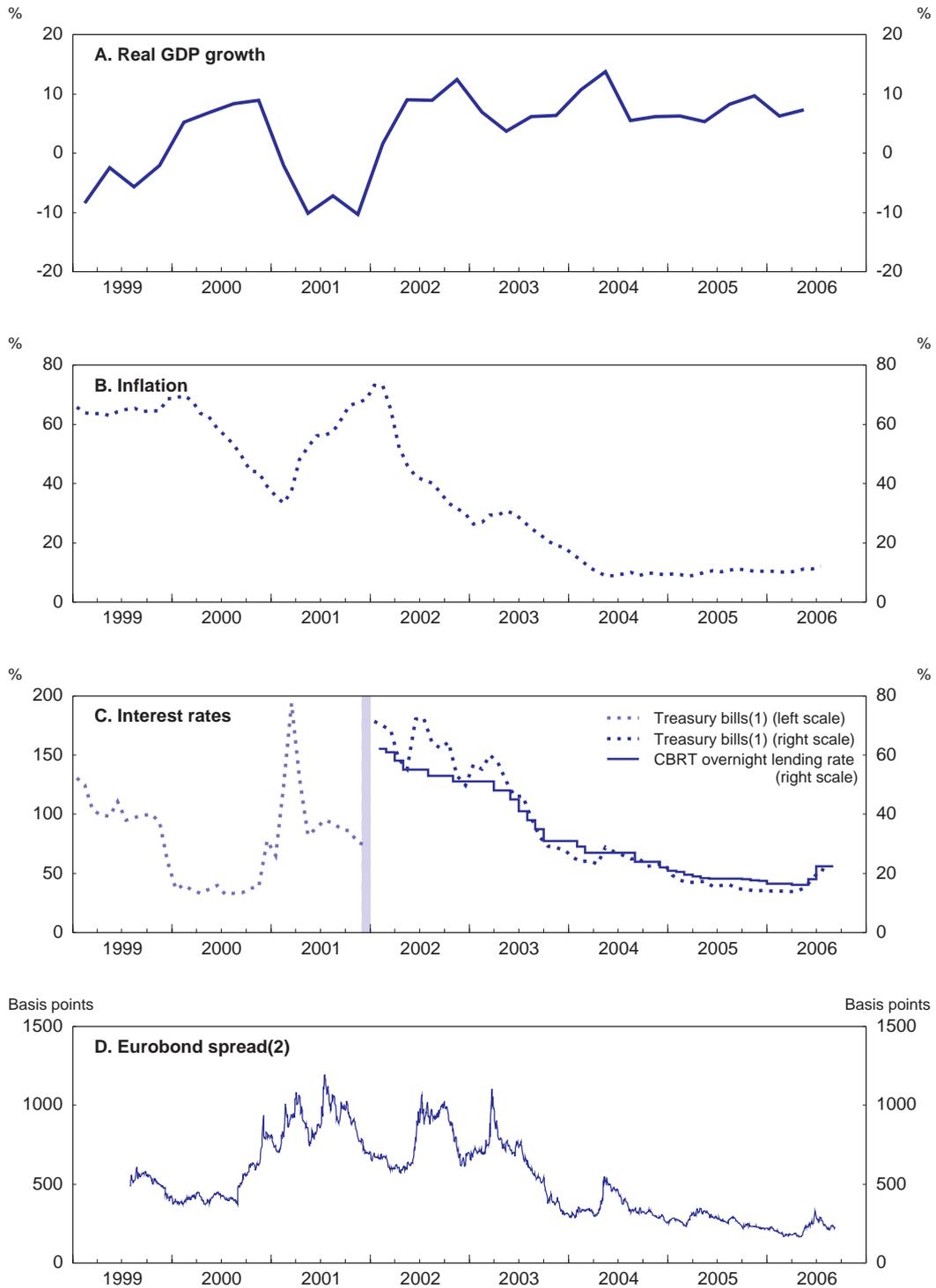
1. Primary market treasury bill interest rate (compound) (weighted by net sales).
2. Turkey's secondary market bond spread over US Treasuries.
Source: JP Morgan, Central Bank of Turkey and OECD.

Figure 2. Risk spreads in Turkey and other emerging market economies
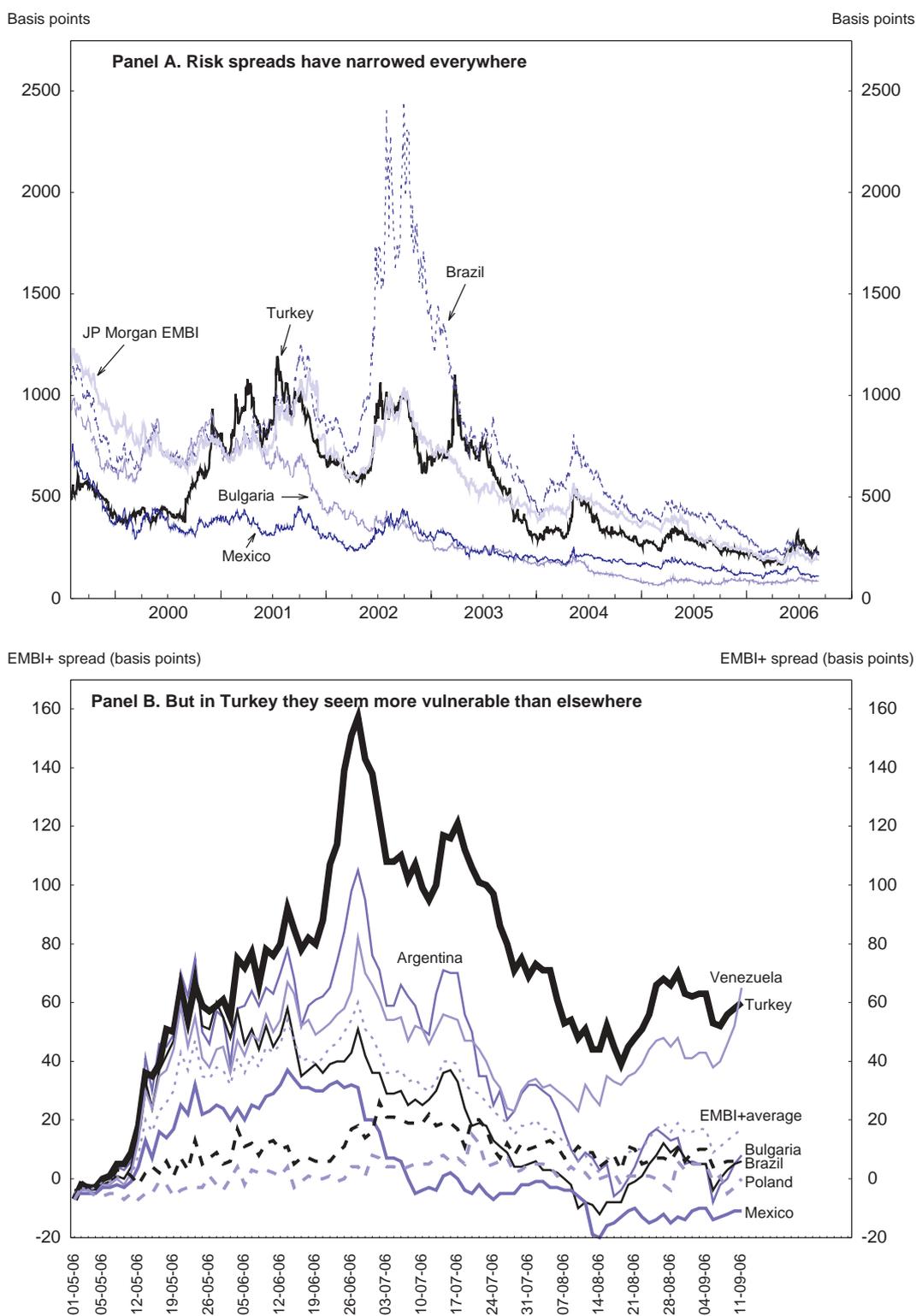
Source: Morgan Stanley.

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Improved macroeconomic resilience to international shocks is essential

4.   The factors determining the vulnerability of emerging market economies have been the subject of a considerable body of economic research in recent years.[2] One key conclusion to emerge from this literature is that the vulnerability "thresholds" for various economic indicators can vary considerably between advanced and emerging market economies. For example, a gross public debt ratio below 60% of GDP is generally considered sustainable for advanced economies (for example, according to the European Union's Maastricht criteria). However, an IMF (2003) study found that over half of all public debt defaults occurred in countries with public debt ratios below 60%. In this context it is worth noting that the Turkish Treasury's gross debt level was 68% of GDP at the end of 2005 and according to some scenarios (discussed in Box 2) may not continue its recent downward trend. Similarly, Reinhart *et al* (2003) have argued that "safe" *external* debt-to-GNP thresholds can be as low as 15–20% for debt intolerant countries, compared with significantly higher thresholds for countries with a positive credit history and long-term stable inflation.

5.   The policy implications of the "threshold" literature are two-fold. At the very least, it is clear that Turkey still has considerable progress to make towards strengthening the most obvious areas of weakness, in order to reduce the vulnerabilities of the economy to shocks. These priorities are discussed below. In addition, the vulnerability literature discussed above, together with the historic opportunity that the EU negotiations present, suggest that Turkey should aim even higher. The possibility of considerably closer integration with Europe presents Turkey, unlike most emerging market economies, with a unique opportunity to fundamentally modernise its institutions and its economic system. If Turkey is willing to do this, then it should gradually progress, in the minds of the financial markets, towards the club of more advanced economies, for whom much less rigorous vulnerability thresholds are applied. In turn, this would significantly reduce Turkey's risk premia, creating a virtuous circle that would considerably facilitate the achievement of Turkey's key macroeconomic goals.

6.   While such a complete transformation of the economy will take some time, there are important steps that could be taken now, to signal Turkey's commitment to further reform. For example, the IMF has undoubtedly played a very important role in recent years in restoring confidence, stabilising expectations, and providing fiscal discipline. An active policy to promote substitutes for this IMF role could be expected to significantly ease the transition to a post-IMF world (Box 1).

7.   As background to the following discussion, Table 1 summarises some of the key debt-related indicators that can be used to gauge Turkey's vulnerability to various shocks. While both public and total external debt ratios have recently been trending downwards, these trends could reverse (as discussed in Box 2). Meanwhile, debt servicing continues to command a very high proportion of government revenue and the average maturity of domestic debt instruments remains short. Other potential indicators of vulnerability, not included in the table, include: the widening current account deficit; exchange rate volatility; very strong credit growth; and currency mismatches.[3]

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2.   For example see Goldstein (2005), Reinhart *et al.* (2003), and IMF (2003).

3.   In addition, Reinhart *et al.* (2003) report that Turkey has defaulted on external debt six times over the past 175 years - most recently in 1978. Of course, many advanced economies also have a history of defaulting on external debt (*e.g.* Spain defaulted 13 times between 1500 and 1900, France defaulted 8 times between 1550 and 1800, and Germany defaulted 5 times in the 1800s), indicating that the markets do eventually forget – even if it takes a while.

Box 1. Life after the IMF

The economic programme negotiated between the IMF and the Turkish authorities has undoubtedly played an important role in keeping Turkey on the straight and narrow path of reform. The direct and tangible benefit of IMF loans has probably made the goal of achieving primary fiscal surpluses of 6.5% of GDP easier to sell to the public, and within the government itself. Many macro-institutional and structural reforms, including the recent social security reform, have been key platforms of the IMF agreement and would, arguably, have been more difficult to pass without the backing and insistence of the IMF. Although fiscal notification to the EU represents progress, transparency continues to suffer from the absence of consolidated general government fiscal accounts prepared according to National Accounting Standards. In this context, the IMF has played an important role in ensuring investor confidence by monitoring/auditing the Turkish fiscal accounts.[1] Paradoxically, however, the confidence provided by IMF fiscal monitoring may have actually reduced pressure for the more general improvement of fiscal transparency, and the publication of consolidated general accounts.

The current (and last) IMF agreement is now due to end in May 2008. The fact that some goals have slipped even with IMF surveillance (*e.g.* the timing of social security reform) raises concerns that more serious reform fatigue could set in once they are gone. To guard against any confidence losses, and to further build investor confidence in the good intentions of the government, renewed reform efforts will be required. The highest priority should be to significantly improve fiscal transparency by publishing consolidated general government accounts according to national accounting standards and by introducing a high quality and fully transparent medium-term budget planning framework.

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1. See Box 3.3 in OECD (2004) for a description of the IMF methodology of fiscal monitoring.

Table 1. Key indicators of economic vulnerability

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Public Debt												
Gross Treasury debt/GNP	53.7	42.9	44.3	43.3	40.6	53.1	50.6	100.8	88.2	79.3	73.8	68.2
YTL Denominated Domestic Debt/Gross Treasury Debt					49.8	52.4	52.6	44.2	41.9	53.7	58.5	62.4
Floating Rate YTL Debt/Gross Treasury Debt					32.8	38.2	32.1	10.0	15.5	24.3	30.0	30.6
Fixed Rate YTL Debt/Gross Treasury Debt					17.0	14.2	20.4	34.3	26.4	29.4	28.5	31.8
FX Denominated or Indexed Debt/Gross Treasury Debt					50.2	47.6	47.4	55.8	58.1	46.3	41.5	37.6
FX Denominated or Indexed Domestic Debt/Gross Treasury Debt					3.6	2.7	4.7	24.4	19.9	15.1	12.5	11.4
Fixed Rate External Debt/Gross Treasury Debt					37.4	36.1	33.6	24.4	22.5	18.8	17.3	16.6
Floating Rate External Debt/Gross Treasury Debt					9.2	8.8	9.2	7.0	15.7	12.5	11.8	9.6
Net public sector debt/GNP							57.1	90.4	78.4	70.3	63.4	55.3
Net public sector debt/central government revenue							212.4	308.9	282.2	250.2	245.5	199.6
Net public sector debt/general government revenue[2]									194.7	171.4	151.5	127.6
Treasury debt servicing/GNP	7.7	7.3	10.0	7.7	11.5	13.7	16.3	23.3	18.9	16.4	13.2	9.4
Treasury debt servicing/central gov. revenue	40.0	41.3	55.4	39.6	52.0	56.5	60.6	79.3	67.9	58.5	51.0	33.9
Average maturity of domestic debt instruments (in months)					13.4	16.3	15.5	38.5	32.1	25.1	20.6	23.5
External Debt												
Public Sector External Debt/GNP	31.5	24.5	21.9	20.2	19.2	23.0	24.3	31.6	35.2	29.0	24.6	18.9
Treasury's external debt/GNP	25.1	19.9	17.6	16.4	15.7	18.7	19.7	26.6	31.4	26.5	22.9	17.9
CBRT external debt / GNP	7.4	7.2	6.7	6.1	6.3	5.9	7.0	16.7	12.2	10.2	7.1	4.3
Private sector external debt/GNP	13.0	13.0	14.6	17.4	21.1	26.8	27.9	29.6	24.6	21.4	22.4	24.1
Total external debt/GNP	49.6	43.1	43.2	43.8	46.6	55.7	59.3	77.9	72.0	60.6	54.2	47.3
Short-term external debt/GNP	8.5	9.1	9.3	9.2	10.1	12.4	14.2	11.3	9.1	9.6	10.9	10.6
External debt / Exports of goods & services	224.8	200.3	175.9	164.0	178.8	228.1	236.2	229.1	240.4	209.7	180.3	166.0
External debt / Reserves	922.4	591.4	487.9	457.3	488.1	444.9	534.5	604.8	485.6	431.4	450.6	337.7
Macroeconomic Indicators												
Central Bank Reserves/GDP	5.4	7.4	9.0	9.8	9.8	12.7	11.2	12.8	14.7	13.8	12.0	14.0
nominal t-bill rate			135.5	127.2	122.5	109.5	38.0	96.2	63.8	45.0	25.7	16.9
Ex-post real rate (GNP deflator)			32.3	25.4	26.9	34.5	-8.5	26.3	13.4	18.4	14.8	6.4
EMBI+ spread in basis points						514.9	487.3	889.5	762.5	629.5	354.2	270.6

1.   For TL denominated debt instruments only.
2.   General government revenue for 2005 is a government estimate.
Source: Turkish Treasury, SPO, TURKSTAT, CBRT, JP Morgan.

The current account deficit is large and the exchange rate volatile

8.   Turkey has a long history of running current account deficits, with surpluses having been achieved only in crisis years, when exceptionally high real interest rates prompted a spike in national savings and a fall in investment rates (Figure 3, panel A). In terms of the composition of the current account, the key trends have been high deficits in merchandise trade, and net factor income, only partly offset by surpluses in the balance of trade in services (thanks to tourism) and net transfers (Figure 3, panel B).

Figure 3. Current account trends
As per cent of GDP
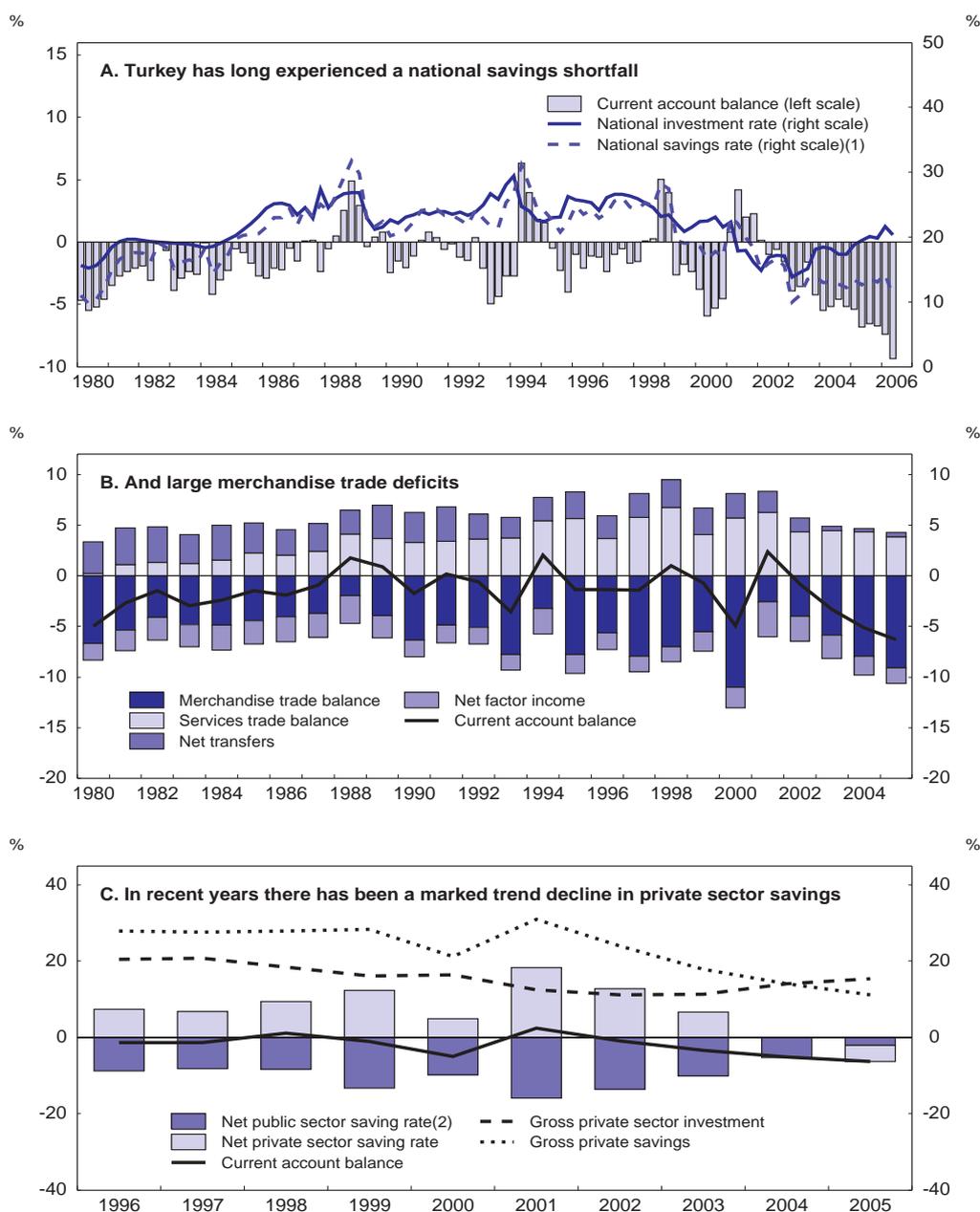
1.   Gross national savings is calculated as the sum of gross national investment and the current account balance.
2.   Net public sector saving is defined as the general government borrowing requirement as measured by the State Planning Office (SPO). Net private sector saving is calculated as the residual between the current account balance and net public savings.
Source: OECD.

9.   In recent years, the current account deficit has reached record levels, coming in at 7.5% of GDP in the second quarter of 2006. While much of the widening in the current account balance can be attributed to the increased price of energy imports, the deterioration has still prompted many economists to voice concerns about unsustainability and possible exchange rate overvaluation.[4] Other more optimistic economists have sought to provide reassurance, by arguing that high current account deficits are normal among catching up economies, and that deficits driven by high private sector investment are relatively benign, because they will eventually deliver a significant increase in exports. However, the significant lira depreciation in the first half of 2006 suggests that there may have been some degree of overvaluation.

10.   There are two main reasons why Turkey might not be able to sustain current account deficits of this magnitude for long periods of time. First, while it is true that gross private sector investment rates have picked up (Figure 3, panel C), they still remain relatively low by the standards of other fast-growing OECD economies. Second, the financing of the current account may be sensitive to the fact that equity portfolio flows are still subject to reversal, as are residents' lira-denominated deposits. Although the recent trend has been one towards de-dollarisation,[5] the highly developed sense of currency convertibility among Turkish residents makes significant domestic capital outflows possible (including re-dollarisation) in the event of any trigger that prompted expectations of significant lira depreciation. Indeed, there has recently been some small decrease in the proportion of bank deposits denominated in lira, although there is little evidence of a more significant domestic capital outflow in response to recent lira weakness.

11.   More recently, net FDI flows picked up to 2.4% of GDP in 2005, following just 0.6% in 2004. But these flows have been directed predominantly towards the services sector (such as investment in banks) rather than consisting of greenfield manufacturing sector investments that would significantly raise Turkey's export capacity. Moreover, even after the recent pick-up, net FDI flows to Turkey remain low relative to flows to Turkey's key competitors, such as China and other catching up OECD countries (Figure 4). OECD (2006) argues that a significant increase in greenfield FDI is unlikely without an acceleration of the structural reform agenda.

12.   The question of current account sustainability is also intrinsically linked to questions about the stability of capital flows and real exchange rate sustainability. Recent financial and exchange rate volatility – driven partly by a global reassessment of emerging market risk appetites and partly by some Turkey-specific political factors - has highlighted the fact that capital flows to Turkey are vulnerable. Indeed, Turkey is far more vulnerable to such changes in sentiment than are more advanced economies. One explanation for this was proposed by Reinhart & Rogoff (2004), who argued that financial markets may sometimes under-estimate the risk of default in emerging markets, resulting in an excess of capital flows from rich to poor countries, such that they create unsustainable balances and exacerbate the risk of crisis. They called this the "paradox" of rich to poor capital flows. In turn, such a paradox leaves emerging market policy makers facing an important dilemma: the inability to slow exchange rate appreciation in an environment of open capital markets and inflation targets.[6]

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4.   In 2005 the impact of the higher net import energy bill is estimated to have increased the level of the current account deficit by around 1.5% of GDP relative to its 2004 level.

5.   The terms *dollar* and *dollarisation* are used as a proxy for "foreign-currency-denominated" assets and liabilities (most, but not all of which are denominated in US dollars). The extent of de-dollarisation by Turkish residents is reflected in strong growth in TRY bank deposits. For example, the share of bank deposits that are denominated in YTL increased from 45% in 2001 to 58% in 2004 and to 66% by the end of 2005. However, the de-dollarisation trend was probably driven not only by macroeconomic stabilisation but also by high TL deposit rates and expectations of further exchange rate appreciation.

6.   While some countries (such as Chile) have used administrative measures to limit the volume of portfolio capital inflows (such as a minimum reserve requirement on financial investment by non-residents and/or a

Figure 4. Net FDI flows by sector and in comparison with other countries
As per cent of GDP

A. Net FDI of equity capital in Turkey by sector

Manufacturing
Services
Other

B. Total net FDI flows : international comparison

TUR   SVK   HUN   POL   CZE   China
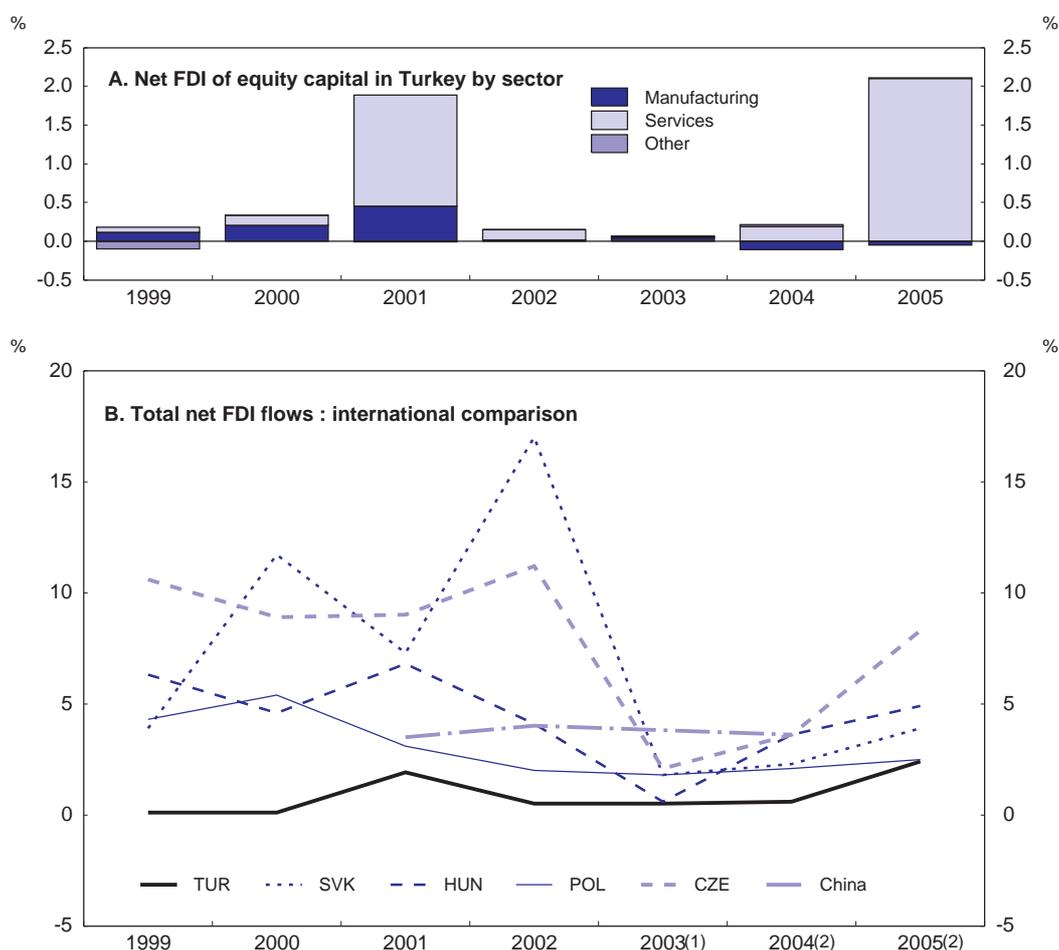
1. Preliminary.
2. Estimate.
Source: Central Bank of Turkey and OECD International direct investment database.

13.   To the extent that the lira was too strong, the recent depreciation (illustrated in Figure 5, panel A) is welcome - although it does create some problems for inflation (discussed later). But it is not yet clear how much of the depreciation is permanent, or how much impact it will have on the current account balance. As Gönenç *et al*. (2006) makes clear, the loss of competitiveness of the most labour-intensive segments of the business sector, such as textiles and clothing, is due only in part to the appreciating exchange rate, but also to the increased openness of European trade to much lower-cost competitors such as China. For these sectors, the real exchange rate may still be overvalued. But, other more modern *capital-intensive* sectors, such as automobile manufacturing, have been successful in maintaining competitiveness

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tax on investments under one year) it is less clear that such measures could work in Turkey, given the increasing sophistication of financial markets.

Figure 5. Developments in the nominal exchange rate

Units of foreign
currency per YTL

Index 2000=100

A. Nominal bilateral and effective exchange rate

—— Vis-a-vis US dollar (left scale)
—— Vis-a-vis Euro (left scale)
- - - Nominal effective exchange rate (right scale)

1980-2005=100

1980-2005=100

B. Real effective exchange rate measures

—— Relative CPI
······· Relative PPI
- - - Relative ULC
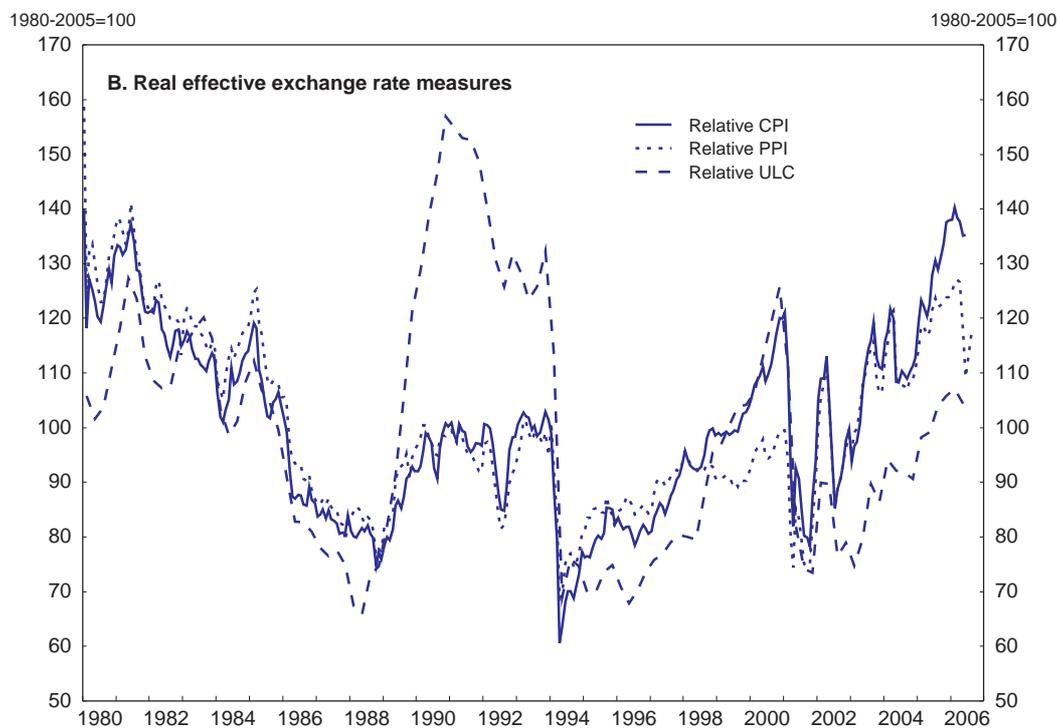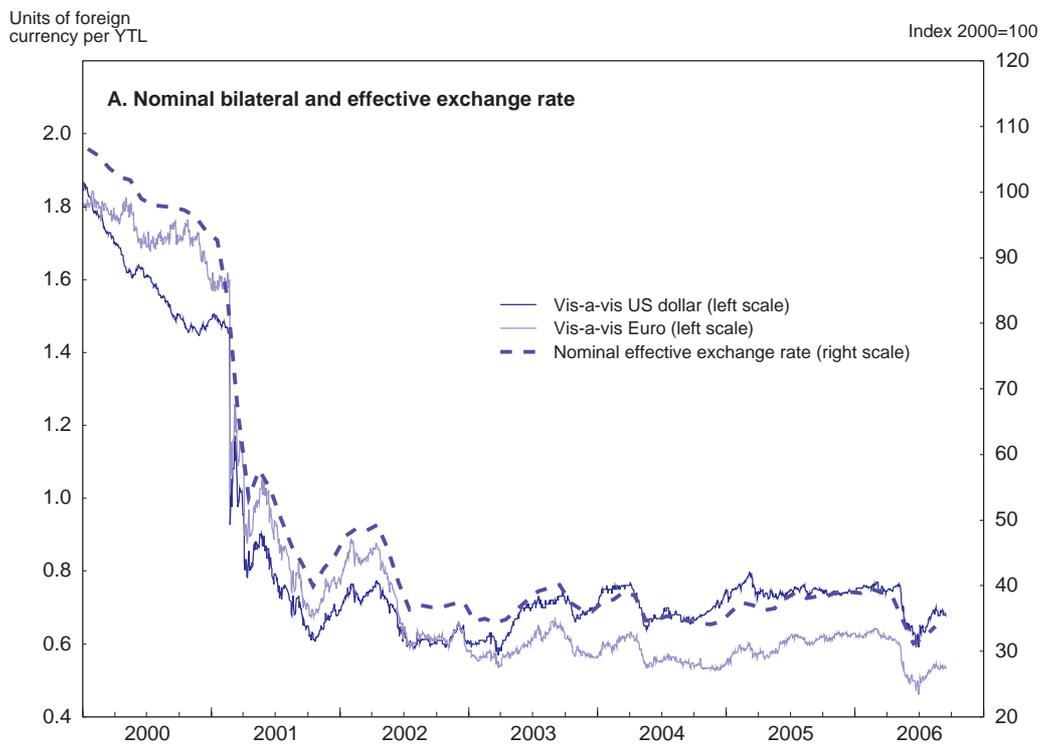
1. All indices of the real effective exchange rate have been rebased to average 100 over the full time period.
Source: OECD.

through high productivity growth and restrained wage inflation. The key to improving export performance, therefore, lies not so much in *nominal* exchange rate trends, but in improving business sector conditions so as to facilitate faster productivity growth in the traditional sectors (which remain the dominant part of the economy) as well as a more rapid reallocation of resources towards the modern sectors. Indeed, when the real exchange rate is calculated using relative unit labour costs, it is clear that the loss of competitiveness over the 2001–2005 period was much smaller than that calculated using relative CPI or PPI inflation (figure 5, panel B). According to the relative unit labour cost measure, the nominal appreciation between 2002 and 2005 was not sufficient to fully offset the downward real wage adjustment that took place at the time of the 2001 crisis.

14.   Even after the recent re-pricing of risk, a more severe shock is still possible - one where a partial drying up of capital inflows is accompanied by domestic capital outflows (re-dollarisation). In the event of such a shock, a sudden reduction in the current account deficit would be required, and this would most likely be achieved through a further large depreciation of the real exchange rate, possibly accompanied by a painful contraction in domestic absorption.[7] Such "sudden stops" (and re-dollarisation) are more likely in emerging markets, which are more susceptible than advanced economies to changes in risk appetites. In turn, large and sudden exchange rate depreciation can cause financial distress for banks and non-financial firms with currency mismatches on their balance sheets, resulting in a sharp fall in output, major declines in asset prices, and a surge in bankruptcies.[8] Box 2 and the Annex illustrate the extent to which such shocks could reverse the recent trend in Turkey's key debt ratios.

Box 2. Public and external debt ratios could reverse trend

Public sector primary fiscal surpluses and exchange rate stability are the key to further reductions in net public debt ratios

The four years following the 2001 crisis saw a significant reduction in the government's net public debt burden to pre-crisis levels. Whereas the very sharp increase in net public debt in 2001 was due to the government taking over the debts of the banking system, the subsequent unwinding can be attributed to strong GDP growth, together with very commendable fiscal and macroeconomic discipline: primary fiscal surpluses have been around 6% for several years in a row, and most nominal interest rates are below 20% for the first time in more than 20 years, contributing to the reduction of the government's debt servicing burden from 23% of GNP in 2001 to 9% in 2005.

Whether or not the downward trend in the net public debt stock will continue depends on a number of factors. A good case scenario - one where the government achieves a 6.5% primary fiscal surplus each year and there are no negative external shocks - could see the net public debt stock drop towards 30% of GNP by the end of 2008 (good case scenario, Figure 6).[1] In this case, Turkey would reach appropriate public debt thresholds within a few years. For example, Klingen (2005) argues that a *gross* public debt ratio of 40% of GDP might be a sensible yardstick for Turkey, and this is broadly comparable to a *net* public debt ratio of around 30%. Even so, there have still been many documented cases of public debt default when the gross public debt ratio was below 40% of GDP, suggesting that it may be prudent for Turkey to aim even lower.[2]

Less positive scenarios emerge in the event of negative external shocks (see external shock scenario, Figure 6) or if the government is unable to maintain large primary surpluses (fiscal policy reversal scenario). The external shock scenario considers the case of a further significant deterioration in the global risk environment, perhaps sparked by a

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7.   While there are historical examples of current account reversals that were achieved smoothly and without precipitating a crisis, most of these occurred under the gold standard or during the Bretton-Woods years. In more recent years, disruptive current account reversals have become more common (Eichengreen & Adalet, 2005).

8.   Eichengreen and Choudhry (2005).

Figure 6. Net public debt stock under alternative scenarios
As per cent of GDP
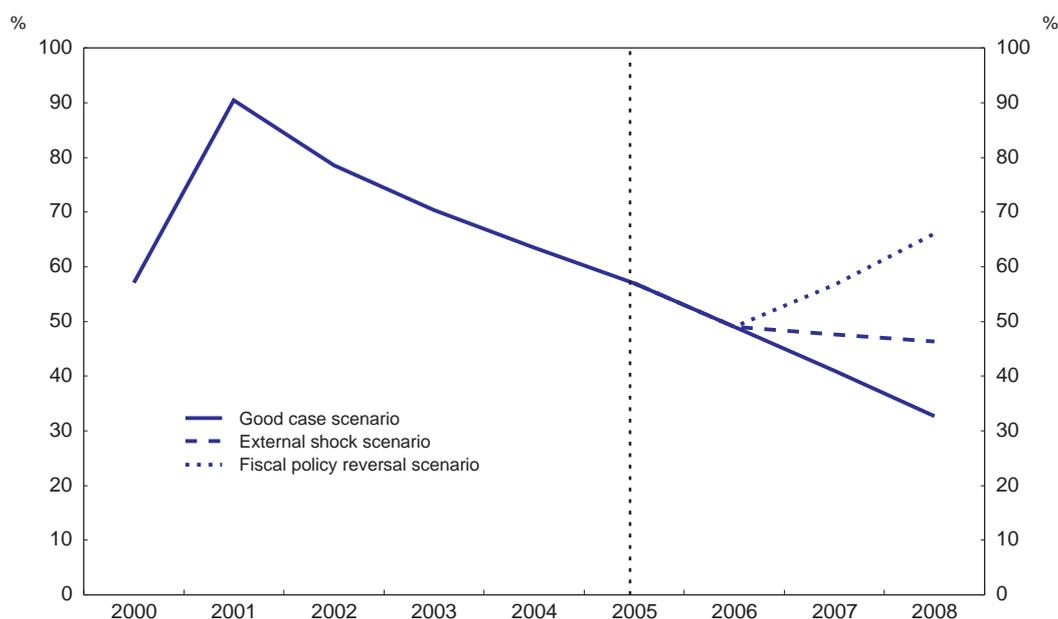

Source: Turkish Treasury and OECD.

rebalancing of the US current account deficit or by a financial crisis in another emerging market economy. In this case it is assumed that for a two year period (2007 and 2008) all real interest rates on Turkish debt would rise by 400 basis points, GDP growth would fall to 2% per annum, and the Lira would depreciate by a further 10% in each of 2007 and 2008. Under these circumstances it is assumed that cyclical pressures would cause the fiscal primary surplus to fall back slightly to 4% of GDP. Despite the fact that the government has prioritised the repayment of foreign-currency-denominated debt over recent years, limiting the vulnerability of the public debt position to sharp exchange rate movements,[3] this scenario would still see the recent decline in net public debt stall, remaining at a level a bit below 50% of GDP.

The fiscal policy reversal scenario is more serious. In this scenario it is assumed that the government's primary fiscal surplus falls to 2% of GDP as a result of a regime shift to weaker fiscal discipline. Given the importance that the financial markets place on the government's fiscal balance as symbolic of fiscal rectitude and commitment to macro-economic stabilisation, it is assumed that such a result would prompt a reassessment of the Turkish risk premium and a selling off of Turkish assets, resulting in a significant (800 basis point) increase in floating interest rates and a 400 basis point increase in fixed rates. Consistent with this, it is assumed that the economy would fall into recession with GDP contracting by 2% per annum. In this case, the public debt ratio would reverse its recent trend, rising to well over 60% of GNP by 2008.

External debt ratios are more vulnerable

In the vulnerability literature, high levels of external debt (relative to GDP and relative to debt servicing capacity) are consistently found to be closely associated with the emergence of sovereign debt distress.[4] This is partly because the government sector is often forced to take on private sector debts in times of crisis (as happened in Turkey in 2001 when the government absorbed the losses of the banking sector), and partly because high levels of private external debt can create conditions for a crisis, forcing the government into an unsustainable position. As a result, the literature on debt intolerance and serial default (*e.g.* Reinhart *et al*., 2003 and Reinhart and Rogoff, 2004) suggests that prudent external debt thresholds in emerging markets may be closer to 15 to 30% of GDP than to the higher levels that are found in many advanced OECD economies. At 47% of GDP at the end of 2005, Turkey's external debt ratio remains well above these threshold levels, even if it is at the same time significantly lower than the levels of external debt seen in the advanced economies (Figure 7).

Figure 7. Gross external debt position[1]
2005 Q4, as per cent of GDP[2]
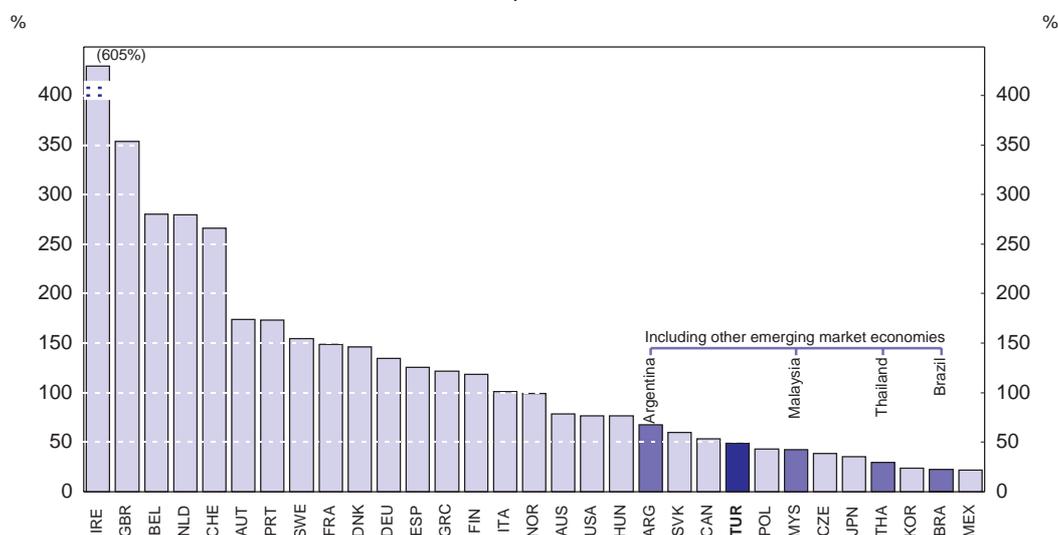
1. Missing OECD countries are those who did not participate in the collaborative effort by the World Bank and IMF to bring together external debt statistics of SDDS subscribers.
2. In 2005.
*Source*: World Bank, Quarterly External Debt Statistics, and OECD.

In this context, it is of concern that the recent downward trend in Turkey's external debt ratio is unlikely to continue (Figure 8). In the first few years after the crisis (2002 and 2003) the falls in the external debt ratio were driven largely by high growth in nominal GDP (particularly the inflation component), assisted in 2002 by a trade surplus. As inflation rates fell, and the trade balance returned to deficit, this effect dissipated. In 2005, however, the pace of external debt reduction picked up, thanks to significant nominal exchange rate appreciation, together with a marked increase in non-debt-creating capital inflows (*i.e.* FDI). While FDI inflows are projected to continue, the exchange rate has now reversed direction. Looking forward, the baseline scenario assumes that the real exchange rate will remain at its August 2006 level throughout the scenario horizon. This exchange rate weakness, together with a persistently large current account deficit, leads to a reversal in the recent decline in the external debt ratio.

The baseline scenario in Figure 8 can be characterised as a "muddling through" or "most likely" scenario, in the sense that it assumes a continuation of sound macroeconomic management, but no acceleration in the structural reform agenda, and therefore no further pick-up in FDI inflows. Importantly, the baseline scenario does not anticipate any kind of crisis.

Worse case scenarios suggest a more rapid increase in the external debt ratio. For example, the "external shock" scenario is based on the same general assumptions as the external shock discussed in the public debt sustainability exercise above. In such an environment of increased risk sentiment and loss of confidence in emerging markets it is also assumed that net FDI inflows drop to zero. Despite some mitigation from an improvement in the trade deficit, in response to the exchange rate depreciation, the consequent revaluation of current debt stocks and the higher debt servicing costs would push external debt up to around 70% of GDP.

Alternatively, a negative shock could also stem from a faltering in the structural reform agenda, perhaps in the run-up to the 2007 elections. In this case, a further loss of competitiveness in the traditional sectors, and a slowing of growth in the more capital-intensive sectors, could lead to a significant expansion in the trade and current account deficits, prompting nominal exchange rate depreciation and higher interest rates. The "no further reform" scenario in Figure 8 assumes a widening of the trade deficit to 6% of GDP, a further nominal exchange rate depreciation of 5% in each of the two next years, and an increase in interest rates of 200 basis points.

Figure 8. Gross external debt stock under alternative scenarios
As per cent of GDP
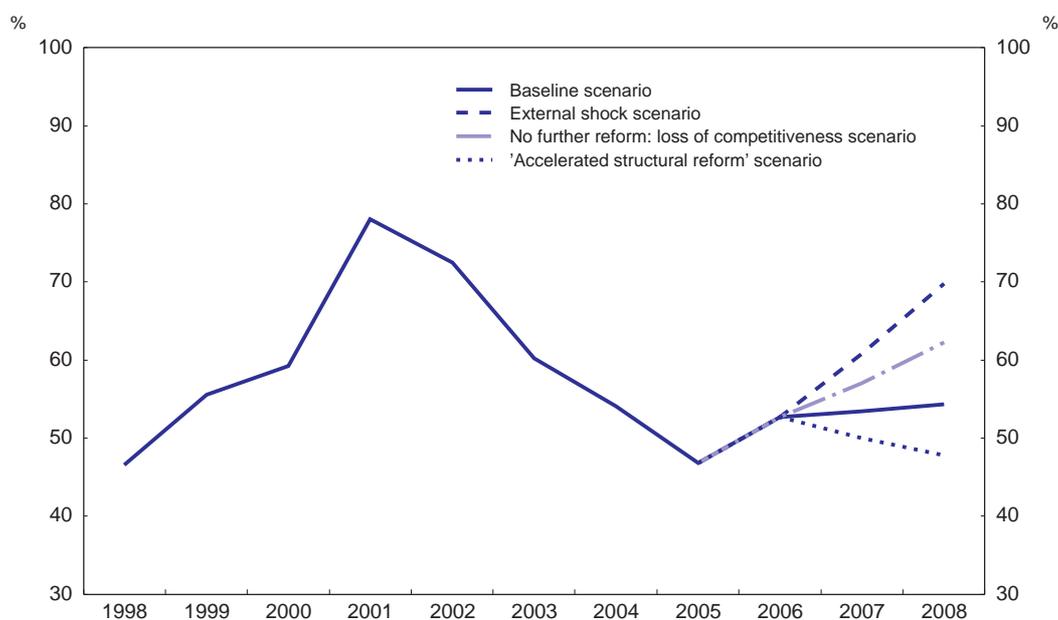
Source: TURKSTAT, Central Bank of Turkey and OECD.

More optimistically, a positive scenario could result from an acceleration of the structural reform agenda (see the Annex for more details). Not only would an acceleration in reforms be likely to reduce the level of external debt (as in the "accelerated structural reform" scenario shown in Figure 8), but it would also improve the perceptions of Turkey in the eyes of investors, and thus reduce Turkey's vulnerabilities for any given level of external debt.

1. See the Annex for details about the assumptions underpinning these scenarios.
2. In a history of sovereign defaults over the last three decades, the IMF (2003) found that gross debt was below 40% of GDP in 35% of the default cases. The fact that some advanced economies (Japan, Italy, Belgium) have lived with a debt ratio above 100% highlights the fact that a different yardstick is used for more developed economies.
3. Public debt denominated in foreign currency fell from 43% of GNP in 2001 (just over half total net public debt) to just under 26% of GNP by the end of 2005.
4. Klingen (2005) provides a review of this literature.

15.   In the context of these vulnerabilities, the remainder of this paper discusses the immediate challenges facing Turkey's macroeconomic institutions and the steps that the monetary and fiscal authorities can take to further improve the resilience of the Turkish economy to volatile capital flows and other shocks.

Monetary policy is being tested

16.   Only several months after the formal introduction of inflation targeting (see Box 3) inflation surprised on the upside, reaching as high as 11.7% in the year to July 2006, before falling back to 10.3% in August, still up significantly from the 7.7% recorded at the end of 2005. This upward blip has exceeded the upper edge of the target uncertainty band, constituting a breach of the targets under the economic

programme with the IMF. Moreover, the ongoing pass-through from the recent nominal exchange rate depreciation to higher prices of imported goods is likely to provide an ongoing source of higher inflation - at least for a while - even if the impact of higher energy prices recedes. Since the lira was floated in 2001, the pass-through from lira-denominated import prices (*i.e.* jointly capturing the effect of the exchange rate and foreign-currency-denominated import prices) to consumer prices has been estimated as being in the 0.3-0.4 range after 12 months.[9] While this is significantly weaker and slower than under the fixed exchange rate regime (estimated at 0.6 after 6 months), it remains significant, highlighting the importance of the recent exchange rate adjustment on consumer prices.

Box 3. Inflation targeting in Turkey

The introduction of explicit inflation targeting in January 2006, following several years of careful disinflation, was accompanied by a clear exposition of the inflation targeting framework:

- End-year inflation targets of 5% for 2006 (with an uncertainty band of ±2%) and 4% for 2007 and 2008 were announced. For the purposes of meeting IMF conditionality, annual inflation in 2006 must be consistent with an announced quarterly path for inflation, consistent with the end-year target.

- It was clarified that these inflation targets are to be treated as mid-points - with upward and downward deviations from target to be dealt with symmetrically - as distinct from the targets during the disinflation phase, which were treated as "upper limits".

- Although the inflation targets are expressed in terms of CPI inflation, the central bank has emphasised the importance of monitoring several different measures of core inflation to ensure that policy is not unduly influenced by temporary CPI price movements which are beyond the influence of monetary policy. To date, however, only exclusion-based measures of core inflation have been produced. To complement these, the CBRT should also consider calculating alternative measures of central tendency - such as median inflation and trimmed means.

- The central bank has adopted a relatively transparent approach to communication, by publishing inflation and output gap projections, conditional on various alternative assumptions for the short-term interest rate, oil prices, etc.[1]

- In case the inflation figures fall outside the uncertainty band, the central bank must make public a separate report explaining the reasons for the incident, and the measures to be taken. Such an event would also be considered to be a breach of the economic programme with the IMF, prompting consultation with IMF staff.

Overall, the framework for inflation targeting in Turkey is reasonably sound. Yet inexperience with a stable inflation environment, together with the fragilities of the Turkish economy, suggest that the challenges of achieving the inflation targets – particularly in the face of shocks, such as the one that has occurred recently - are much greater than in other inflation targeting countries. The challenges of this environment suggest the need for a superior level of economic analysis and communication.

Communication is particularly critical in response to the uncertainty band being breached - both in terms of justifying the breach to the government and the IMF, and in terms of convincing the public that the deviation is temporary and that inflation will be quickly returned to the desired path. In this context there is room for improvement. For example while end-year targets for 2006–2008 were published in December, a more explicit exposition may be required of the *longer-term* inflation target (beyond 2008), together with the convergence pace and time horizon for bringing the CPI back to this path.

Given the importance of the international investor community, a greater emphasis on providing prompt English-language translations of all press releases and inflation reports would also be helpful.

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1. *E.g.* see CBRT (2006a) Inflation reports I and II.

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9. Kara, H. & F. Öğünç, (2005).

Figure 9. Inflation trends
Year-on-year percentage changes

A. Non-tradeable inflation continues to persist at high levels(1)

- Headline inflation
- Services (25%)(2)
- Energy services (15%)(2)
- Tradeable goods excluding energy (60%)(2)

B. And core inflation has increased(3)

- Headline inflation
- Core E
- Core G
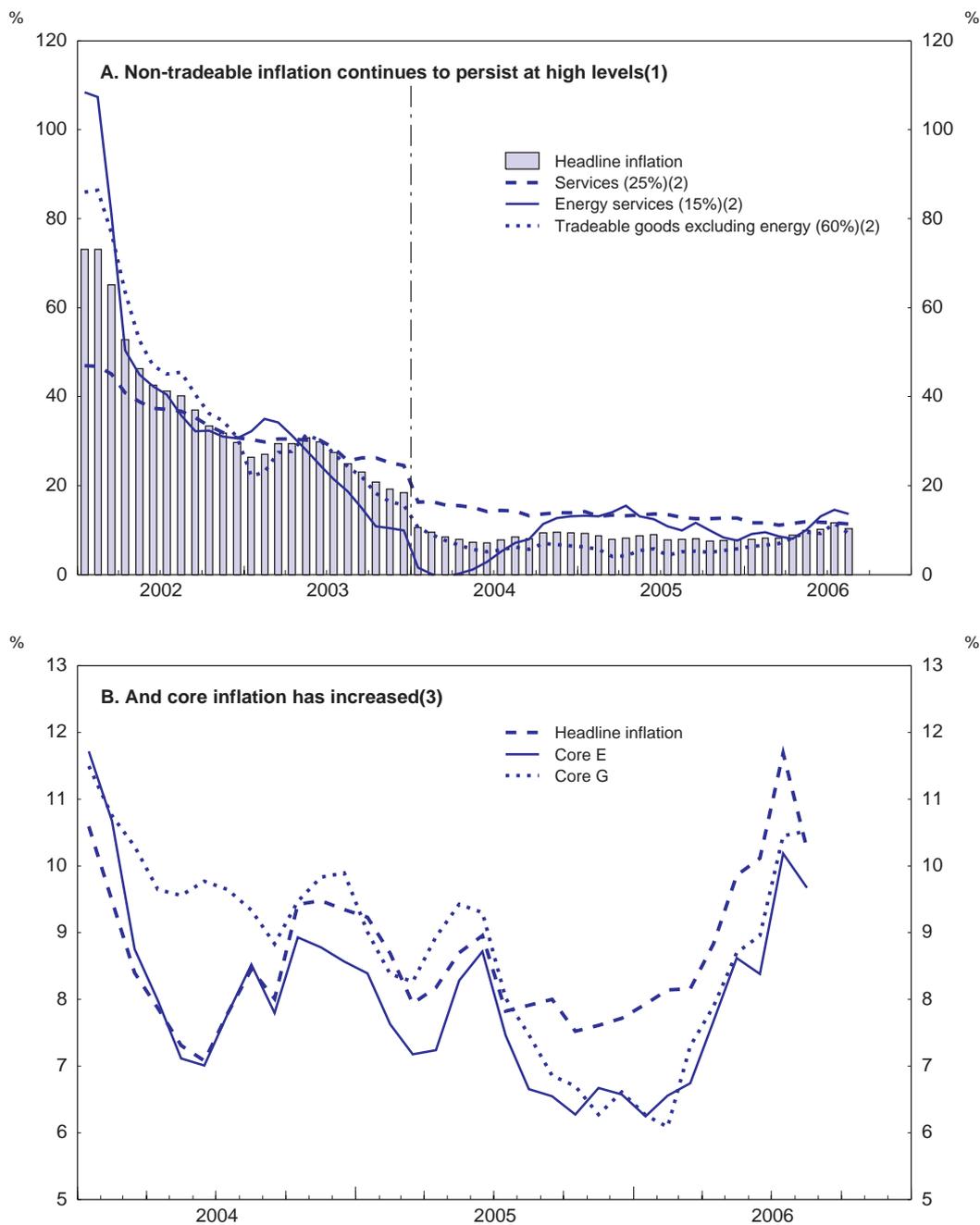
1. Starting in January 2004 a new index of CPI inflation was published, resulting in a structural break in the historical series.
2. Numbers in parentheses represent the approximate weight in the consumer price.
3. CPI excluding energy, alcoholic beverages and tobacco products for Core E and excluding also other products with administrated prices, and unprocessed food for Core G.

Source: TURKSTAT, Central Bank of Turkey and OECD.

17.   To some extent the higher inflation numbers simply represented a surprise. While the central bank did expect some temporary increase in headline inflation this year, in response to supply-side shocks which pushed the prices of energy, unprocessed food and gold upwards, both the magnitude and scope of the increases was underestimated; inflation picked up not only in energy and food items but also in clothing and some other components. Moreover, measures of core inflation also increased significantly (Figure 9).

18.   The Bank responded to these shocks by holding an emergency monetary policy committee meeting on the 7th of June, at which it was decided to raise the short-term policy rate by 175 basis points. This was followed by another 225 basis point increase on the 25th of June and a further 25 basic point increase on the 21st of July, taking the policy interest rate back up to 17.50%, a level not seen since the end of 2004. Measures to address the liquidity squeeze in the foreign exchange market were also introduced (see further discussion below). For a given projected increase in inflation, the Bank's decision about how much to raise policy rates can be seen as depending on a number of factors including: the cause and perceived permanence of the shock; the effectiveness of the interest-rate transmission channel; the expected impact on output and the financial sector; and the credibility of the Bank. In Turkey, it is unclear how effective the interest rate transmission channel is. Most economists believe that inflation expectations (*i.e.* credibility) play a more important role in the inflation generating process in Turkey than the output gap, which in any case shows little sign of significant excess demand (Figure 10), although measurement is very difficult. However, other factors suggest that the central bank was sensible to respond to the inflation surprise by significantly raising short-term policy rates: First, to the extent that the exchange rate shock stemmed from a portfolio shift, rather than fundamental factors, it makes sense to offset it with significantly higher interest rates.[10] Second, it is critical that the Bank restore its anti-inflation credibility, even if this involves behaving as a "strict", rather than "flexible" inflation targeter by putting significantly more weight on stabilising inflation, than on stabilising growth.[11] Otherwise: recent gains in credibility would be lost, and be more difficult to win back; this loss of central bank credibility would be reflected in higher rates at the longer end of the yield curve; and a wider inflation differential, relative to Turkey's trading partners, would partially offset the impact of the nominal exchange rate depreciation, implying that Turkey's external competitiveness could still deteriorate even without renewed nominal appreciation.

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10.   To the extent that the exchange rate was previously over-valued, some of the depreciation may have reflected a correction. However, to the extent that the shock was entirely due to a shift in portfolio preferences, higher interest rates may help to reverse the depreciation.

11.   Svensson (2005) defines strict inflation targeting as monetary policy that is focused only on price stability, rather than also on stabilising the real economy, as represented by the output gap or the unemployment gap. For central banks that are still undergoing a disinflation process, such as in Turkey, and whose credibility may still be questioned, the scope for flexible inflation targeting is often reduced. Nevertheless, the existence of this trade-off between inflation variability and output variability should not necessarily be attributed to the regime of inflation targeting. The IMF (2005) found no evidence that inflation targeters, including those in emerging markets, meet their inflation objectives at the expense of real output stabilisation.

Figure 10. Measures of the output gap[1]
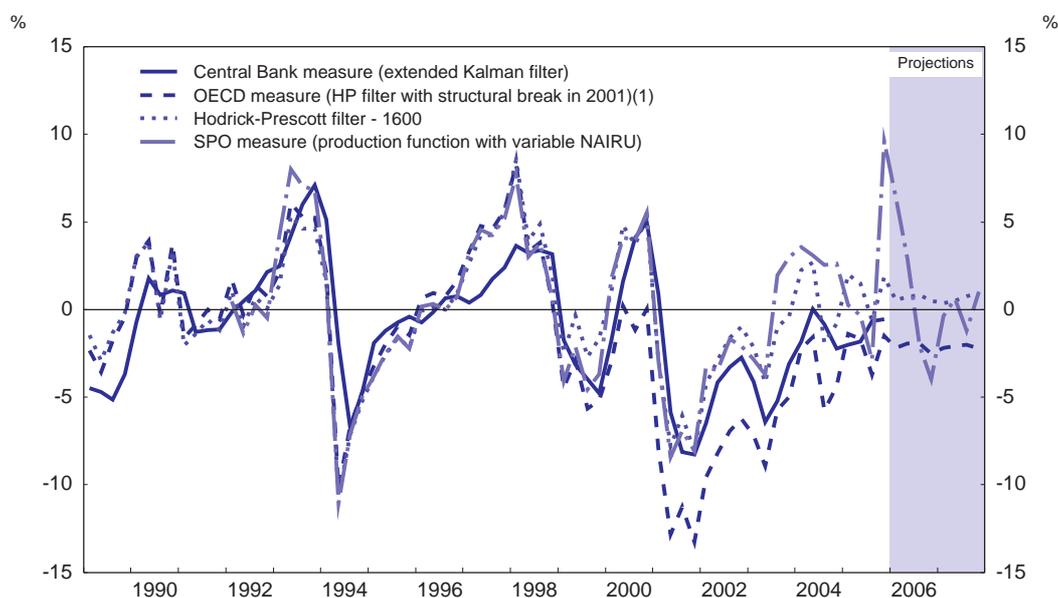
1. The OECD measure of potential output, on which the gap is based, is calculated using an HP filter with constraints on labour productivity and a structural break in 2001.
   Source: Central Bank of Turkey, State Planning Organisation and OECD.

19.   Looking ahead, the central bank has acknowledged that end-year inflation is likely to overshoot the 3 to 7% uncertainty band for December 2006, although they continue to expect a single digit inflation figure. The latest (early September) survey of public inflation expectations also reported a single digit figure for end-year inflation – although at 9.9% it was only *just* in single digit territory (Figure 11). Exchange rate uncertainty makes these projections particularly uncertain. If the exchange rate were to remain approximately 10% lower (on a nominal basis) than before the financial market turbulence, then it could be expected to contribute an additional 2 percentage points of inflation over the year to mid-2007 (given a 0.35 pass-through coefficient and a 60% weight of tradable goods in the consumer goods basket). If enough of this additional inflation passes through before the end of the 2006 year, then single-digit inflation would require lower rates of inflation elsewhere, which – given the stickiness of non-tradable goods (services) inflation, at around 12% (Figure 9, panel A) – could be difficult to achieve. While this estimate of 2% is a bit lower than the central bank's mid-summer estimate of 3.5 percentage points of pass-through throughout 2006 (CBRT, 2006b), this probably reflects different assumptions about the extent to which the exchange rate depreciation will be permanent. In any case the total impact could be even higher if high inflation expectations result in significant second round effects.

20.   It is now a significant challenge for the central bank to show that they deserve the medium-term credibility with which they had previously been bestowed, by communicating a plausible recovery plan for returning inflation to the required dis-inflationary path. To date, surveyed measures of medium-term inflation expectations suggest that the credibility of the Bank's medium term target has not yet been restored. The central bank has projected that based on an endogenous interest rate assumption, end-2007 inflation will be in the range of 3.0 to 6.5% with a probability of 70%. However, the fact that the median 24-months-ahead inflation expectation increased from 4.7% in April to 6.0% in June, July and August. suggests that the Bank's inflation target of 4% for December 2007 is not seen as attainable.

Figure 11. The Central Bank faces a credibility challenge
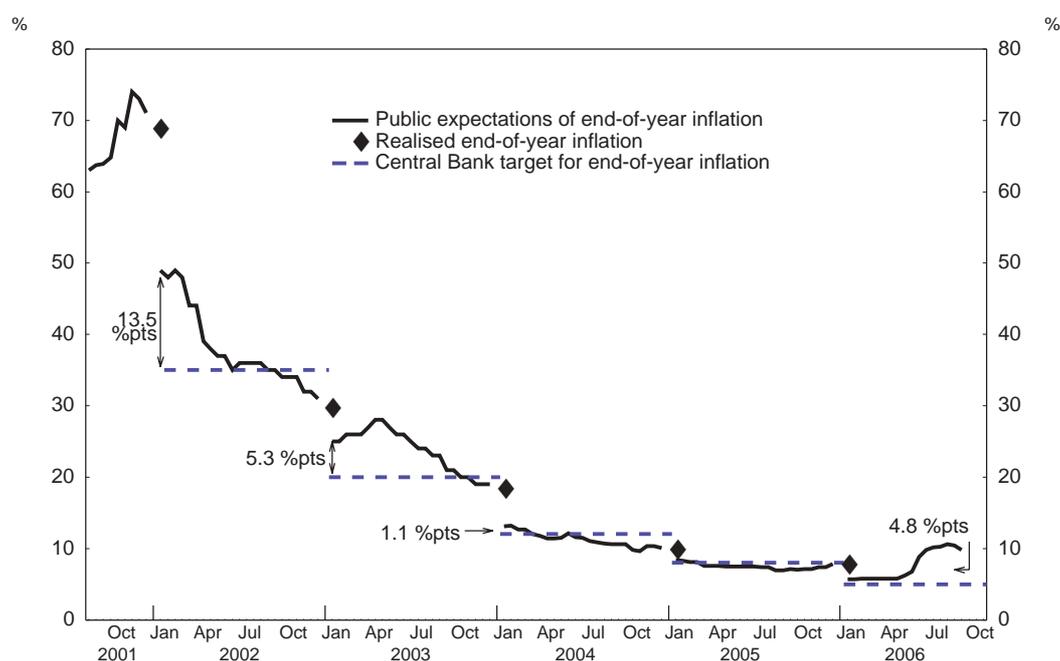
Source: Central Bank of Turkey.

21.   With the current inflation targets not expected to be met, the targets themselves are currently providing an insufficient guide to market expectations. What markets and economic agents need is a comprehensive road map for the re-establishment of disinflation. This need was partly fulfilled by the central bank's recent letter to the government and IMF in response to the target breach (CBRT, 2006b), which provided updated projections for 2006 and 2007. However, as discussed in Box 3, a clearer exposition is also needed of the Bank's *longer-term* inflation target (beyond 2008), together with the convergence path and a more detailed discussion of the risk factors that could put the new convergence path at risk; and how the Bank would respond to unforeseen events.

22.   The government has made it clear that achieving price stability is the responsibility of the entire government, not only the central bank. This emphasis reflects the important role that good fiscal policy management plays in the inflation process in Turkey; according to a recent piece of IMF research, price-setting behaviour in Turkey has historically been dominated by inflation expectations, which in turn are heavily influenced by fiscal variables.[12] So continued confidence in fiscal management will be important, including steps to ensure that public sector wages do not accommodate the inflationary shock. But government policy in other areas should also assist. Most importantly, an acceleration in the structural reform programme would improve competitiveness and help to bring about a more rapid slowing in services sector inflation. To date, this structural policy agenda has been the weakest leg of the disinflation process.

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12.   Celasun and McGettigan (IMF, 2005).

Exchange rate policy and further risks

23.   Besides policy interest rates, the other relevant tool of the central bank is the use of foreign exchange intervention and auctions to stabilise liquidity conditions in the foreign exchange market. The Bank uses two means of transactions in the foreign exchange market: prior to May 2006 this involved daily auctions to build up foreign exchange reserves (which were invested in high-rated foreign bonds); and occasional large foreign exchange interventions (Figure 12). The purpose of such foreign exchange intervention was to reduce the potential short-run exchange rate volatility in the foreign exchange market which helped to limit the impact of capital inflows on the real exchange rate. In 2005, almost half of the total USD 39 billion capital inflows were channelled into accumulation of foreign exchange reserves.[13] In May, exchange rate depreciation prompted the Bank to suspend the use of these daily auctions. Subsequently, auctions to *withdraw* excess lira liquidity in the money markets were introduced, through a lira deposit facility with one and 2-week maturity in which the interest rate is determined by the market in competitive auctions. The direction of Bank interventions in the foreign exchange market have also changed with several large sales of foreign exchange (totalling USD 1 billion) conducted in June (a data release lag of 3 months means that the recent interventions are not reflected in Figure 12). It was hoped that these actions would reduce volatility in the foreign exchange market and prevent excessive under-shooting of the exchange rate. Indeed, the exchange rate trend did turn around soon after.

Figure 12. Nominal effective exchange rate and auctions
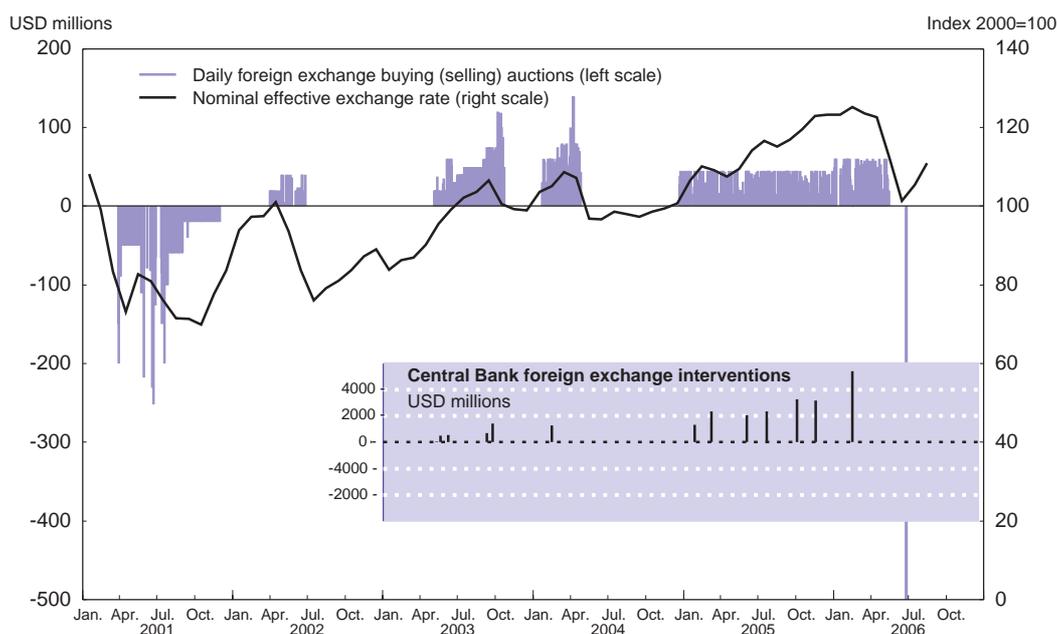
Source: Central Bank of Turkey and OECD.

24.   An important exchange rate risk in the Turkish context is a reversal of the recent de-dollarisation trend. At the end of 2005, the two thirds of total bank deposits that were denominated in lira amounted to approximately 150 billion YTL (112 billion USD), roughly equal to almost three times the size of total net capital inflows (including IMF loans) in 2005. If, in the event of a more severe shock, the extent of dollarisation were to return halfway to its 2001 peak of 55% of total deposits, the magnitude of currency

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13.   USD 17.85b were added to central bank reserves over this period.

substitution could be estimated at approximately 15 billion YTL (30% of 2005 net capital inflows).[14] Since the pass-through from exchange rate movements to CPI inflation is usually non-linear - intensifying with the rate of currency depreciation - all possible actions to prevent an excessive under-shooting of the exchange rate would be needed in such a situation.

25.   To further reduce the risk of excessive depreciation, tight fiscal policy is crucial, together with an acceleration in the structural reform agenda (including more flexible labour market regulations and improved product market regulation) to maintain investor confidence. Continued high inflation in the non-traded service sectors (see Figure 9) also suggests structural impediments to competition. Finally, improved bank regulation and supervision can also help, primarily by reducing the risk of macroeconomic destabilisation in the event of a capital flow reversals, or large exchange rate changes. Policies in each of these three areas are discussed in further detail below.

Fiscal policy institutions need to be strengthened

26.   Fiscal policy has an important influence on Turkey's vulnerability to shocks for several reasons. First, in the event of diminished risk appetite for emerging-market securities, investors may decide to apportion their pull-back according to the perceived sustainability of individual countries' fiscal and monetary policies. Second, contagion is more likely to penalise emerging economies with high debt levels or prospective fiscal deficits. Third, economies with a good fiscal reputation find it easier to stabilise growth through the use of countercyclical policies.[15] Finally, most economists agree that tight fiscal policy can be the most effective tool to counter the effects of capital inflows.[16]

27.   To date (since the 2001 crisis) Turkey has achieved some very impressive fiscal outcomes, while improving the quality of fiscal institutions and processes. This is testament to the sheer political will of the Government, motivated by recognition of the need for Turkey to achieve and maintain fiscal credibility.[17] But to ensure a longer-term commitment to strong fiscal control and public spending efficiency, fiscal institutions and processes will need to be made more robust to both economic and political cycles, and greater attention will need to be devoted to controlling current expenditures. The potential benefits to be gained from establishing more robust and transparent fiscal institutions and processes are huge. Although this process has begun, significant challenges remain (see Box 4).

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14.   At the end of 2005, 34.9% of total bank deposits (259.6 billion YTL) were denominated in foreign currency. An increase to 45% (the peak of dollarisation in 2001 was 55%) would imply an additional conversion of 10% of total bank deposits, or 15 billion YTL, to dollars (or other foreign currencies), equal to approximately 12 billion US dollars, or 30% of 2005 net capital inflows.

15.   Goldstein (2005).

16.   Some, such as Eichengreen and Choudhry (2005), even argue that fiscal consolidation may be the *only* truly effective policy.

17.   IMF research (Ramirez-Rigo, 2005) shows that Turkey's fiscal adjustment has been surprisingly long-lasting, relative to other countries' achievements, given its emphasis on revenue measures rather than expenditure cuts. He emphasises the importance of the stable political backdrop in explaining this outcome.

Box 4. Managing public finances: remaining challenges

Several new laws introduced since the 2001 crisis – including the Public Financial Management and Control Law (PFMCL) – have aimed to introduce modern budgeting procedures to Turkey, although the required secondary legislation to support the new laws will not be fully implemented until the end of 2007.[1] As with most aspects of policy, the key challenge will be in the *implementation* of these laws. This box, which draws on IMF (2006) and Sigma (2005) summarises some of the primary implementation challenges that must still be addressed:

Improving the legislative environment: In the recent past, some laws have been modified soon after they were passed. Other legislation can include exemptions to the provisions of the PFMCL. This has created some confusion about the legal framework. Therefore, to provide permanence and stability in the new fiscal framework, some steps need to be introduced for a better legal environment. Some options for ensuring the primacy of key laws are suggested by the IMF (2006)[2] although it is noted that their implementation would require the strongest political support from the government at the highest level. Resolution of this problem is very important for the international perception of the fiscal and business environment in Turkey.

Institutional coordination of public financial management: Fiscal responsibilities are currently shared between the Ministry of Finance (MOF), the State Planning Organisation (SPO) and the Treasury. Successful medium-term performance-based budget management will require improved coordination between these three players.

Performance-based budgeting: Budget documentation remains heavily focused on inputs. The introduction of performance-based budgeting will require a major cultural change among civil servants, given Turkey's history of centralised decision-making and the absence of experience with individual agency-specific goals. See IMF (2006) for specific measures to support the implementation of the new budget legislative framework.

Off-budget channels: The importance of revolving funds (RFs) has not diminished and their status has not yet been resolved. Since revolving funds evolved as a way to get around excessively restrictive budgetary regulations (such as restrictions from charging fees in the healthcare system), their resolution will require major reform in the various line ministries (especially health and education). Essentially, a decision should be made to either incorporate these revenues and expenditure flows into the general government accounts or to corporatise the relevant institutions (e.g. hospitals). Given the inconsistency of RFs with the government's goals of accountability and transparency, these reforms should be given priority.

Tax system transparency: Despite improvements, the taxation framework remains complex and subject to discretion by the Council of Ministers and the Minister of Finance. Tax exemptions should be consolidated, the discretionary power of the Council of Ministers and the Minister of Finance should be limited, and a mechanism for the issuance of binding advanced rulings on tax issues should be introduced.

Public sector training: Despite the significant cultural change that the reforms require, the training of officials, although ongoing, remains insufficient, especially for: the formulation of medium-term performance-based budgets; the roll out of the new system to local governments; the implementation of new accounting practices at local government level; and the adherence to new reporting requirements.

Public private partnerships: To ensure that PPPs do not result in unforeseen fiscal liabilities, it may be wise to set up a dedicated PPP management unit to manage the complex nature of PPP agreements, and make explicit the extent to which the risks will be borne by the public versus the private sector.

Effective devolution of responsibilities across levels of government: The dependency of municipalities on State transfers should be reduced and fiscal responsibility should be fostered by strengthening the municipalities' own revenue base. Decentralisation of local government expenditure responsibilities should be clearly linked to resources and activities and Iller Bank should be restructured in order to subject it to market forces and improve transparency in intergovernmental fiscal relations.

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1. See OECD (2004), IMF (2006) and Sigma (2005) for a more detailed description of the new regulations.
2. For example, one proposed possibility is the introduction of a procedural rule in Parliament, prohibiting consideration of any draft law that includes an amendment of the PFMCL or of a principal law in a given area. Of course processes should still exist for modifying these principle laws directly when required.

28.   A significant problem for external observers of fiscal policy is that, apart from Mexico, Turkey is the only OECD country that does not publish consolidated general government fiscal accounts according to National Accounting Standards. Essentially, external observers are left with three rather sub-optimal measures to monitor: the official Ministry of Finance (MOF) measure of the government balance; the State Planning Organisation (SPO) measure of the general government balance; and the IMF measure of the fiscal position.

29.   Of these three measures, the official MOF measure of the "central government balance" is the most timely. This is the consolidated central government balance which takes into account budget transfers to the social security institutions and budget transfers to local governments. This measure has been widely used as a proxy for *general* government net lending. However, the total spending and total revenues of general government entities are not reported, making it unclear what other liabilities could be missing and where possible remaining weaknesses lie.

30.   To fill in the gaps on total government revenues and expenditures, the State Planning Organisation (SPO) publishes a measure of the "consolidated general government balance". Unlike the MOF measure, this incorporates most general government revenues and expenditures, providing a measure of the size of the general government. However, since it is not prepared according to National Accounting Standards and procedures, it is unclear what might be missing.

31.   Finally, in response to the lack of suitable official data, the IMF has defined its own methodology for monitoring the fiscal position of the Turkish government. The IMF's monitoring system does not aim at exhaustive general government accounting but focuses on the key and fiscally most risky components of public finances.[18] As such it is not a substitute for putting in place fully fledged general government accounting - particularly since data publication lags are long and the current IMF programme in Turkey is expected to come to an end within the next two years. In the meantime, the absence of general government fiscal accounts prepared according to National Accounting Standards continues to serve as a barrier for outsiders to fully monitor Turkish fiscal policy.

32.   Figure 13 illustrates these three measures of the primary fiscal balance, together with the IMF measure of net interest payments and the total budget deficit. According to the SPO definition, the government has been running large primary surpluses every year. According to the IMF definition, the primary surplus targets were roughly met in 2001, 2003 and 2004, and missed by around 2% of GDP in 2002 and by 0.7% of GDP in 2005.

33.   The multiplicity of fiscal indicators makes the close monitoring of the fiscal position particularly difficult, as is the case for 2006 to date. Although the consolidated central government balance has significantly improved in the first half of 2006, relative to the same period in 2005, this is largely due to fiscal revenues that were more buoyant than anticipated; if expenditures had not also surpassed projections, the fiscal position would be even better.

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18.   See Box 3.3 in OECD (2004) for further details.

Figure 13. Available measures of recent fiscal outcomes in Turkey
As per cent of GDP
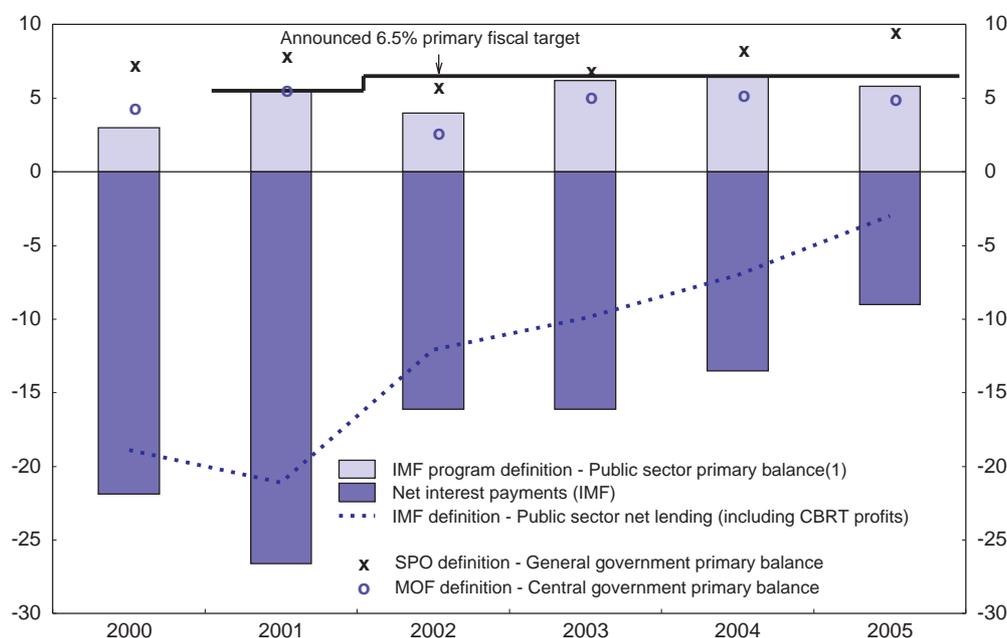
1. Data for 2005 is calculated according to a revised/*consolidated government sector* definition adopted by the IMF in January 2006.
Source: State Planning Organisation, Ministry of Finance and IMF.

34.   As discussed earlier, the strategy of targeting a high primary surplus has been critical to reducing debt, establishing confidence and supporting the central bank's disinflation objective. However, a fixed primary surplus target does not easily allow automatic stabilisers to operate. While the overall fiscal stance has been relatively tight over the past few years, the practise of targeting the *actual* primary balance means that it became less tight during the recent cyclical upswing, at a time when the widening current account deficit would have argued for more contractionary fiscal policy.[19] In order to prevent such pro-cyclical behaviour in future, the government has recently announced an intention to complement the annual primary balance target with an expenditure cap. This effectively implies that the automatic stabilisers will be permitted to work *asymmetrically*, in the sense that the primary surplus would be permitted to exceed 6.5% of GDP in conditions of economic strength, but that the government would still take measures to preserve the target if revenues disappoint. This step is to be commended in the context of the traditional Turkish susceptibility to unfavourable external assessments, which suggests that Turkey is not yet ready for a symmetric operation of automatic stabilisers. The cyclicality of fiscal policy is sometimes used as an indicator of the quality of fiscal policymaking, with some emerging economies (such as Chile) having successfully graduated from the pro-cyclical group to the more advanced countercyclical/neutral group.[20] Less pro-cyclical fiscal behaviour in Turkey would also be very helpful.

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19.   The composition of fiscal contraction is also important given evidence that the greater the contraction in fiscal expenditure at the time of capital inflows, the weaker the extent of real exchange rate appreciation. Calvo *et al.* (1996).

20.   Kaminsky, Reinhart & Vegh (2004).

35.   One of the largest fiscal risks in recent years has been in the area of *social security*, where projected deficit targets have been persistently breached. Even after the 2006 social security reform, however, large budgetary transfers to the social security system are expected to continue, at least in the short to medium term (as discussed in Brook and Whitehouse (2006)). Large deficits have also been recorded in the health leg of the social security system and there is a significant risk that health spending may be significantly under-estimated in current long-term projections (see Box 5).

Box 5. The fiscal risks of health reform

Following the 2006 approval of the social security administrative reform law, Universal Health Insurance (UHI) is due to be introduced in January 2007. Despite its name, however, health insurance will not be fully universal, since differences in coverage will continue to exist. While the scope of health services that is currently provided to workers insured under one of the social security institutions, and their beneficiaries, will continue, the state will pay UHI premiums only for the poor and children (to be paid from the resources allocated for social benefits). Those who do not pay the premiums themselves will qualify on the basis of objective minimum subsistence level criteria. A similar system exists at present, whereby a relatively large number of poor people qualify for a green card - and therefore some basic health services - on the basis of relatively subjective criteria, administered by local government officials. Since the new criteria for qualifying as poor are less subjective than under the current green card system, the number of fraudulent claims for free health coverage is expected to drop.

Other informal sector workers, who do not qualify as being poor, but who do not pay any health premiums, will not be eligible for any health services, "except in emergency situations", and even in those situations they will be expected to repay all expenses, together with interest and premium debt.

The fiscal impact of the new system is unclear, but risky. On the one hand, the single health financing system that will be introduced along with UHI is expected to result in significant efficiencies relative to the serious waste and misuse of resources under the current mixed-model health system.[1] In particular, a nationwide database for social benefits will be created using the national identity number. The government claims that making health benefits conditional on payment of premiums could be expected to increase social security registration and payments. On the other hand, many informal sector workers are likely to find that the benefits of premium payment do not outweigh the cost; especially since paying health premiums would also oblige informal sector workers to start paying pension premiums and income tax at the same time (a very large tax wedge - as documented in Gönenç *et al* (2006)). Moreover, such workers can expect health coverage anyway for their children and in the case of emergencies.

Not only are the incentives for registration still weak, but the cost/coverage of health care for former green card holders can be expected to increase significantly. The government's long-term projections for the health leg of the social security system implicitly assume that efficiency gains will significantly outweigh the potential cost of extending quality health services to a wider portion of the population and the increases in *demand* for health care that might result. In light of the poor average health status of the population and the low level of health spending per capita, the fiscal risks of significantly higher health spending would seem to be considerable.

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1.   At present the health system is funded by insurance premiums for people registered with the SSK or Bağ-Kur
      social security institutions, and government financed for civil servants, green card holders and needy citizens over
      the age of 65.

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36.   Finally, prudent debt management could also help to reduce vulnerabilities by prioritising the pay-down of public sector external debt. The public and external debt scenarios discussed in Box 2, assume that the public stock of gross external debt will be reduced only according to the IMF debt repayment schedule.[21] As a result the public share of external debt is expected to fall from close to one half

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21.   The Treasury's debt management strategy for the 2006-2008 period aims for performance-based borrowing
         at minimum cost and at a prudent level of risk based on the following principles: to borrow mainly in YTL;
         to use fixed rate TL instruments as the major source of domestic cash borrowing; to increase the average
         maturity of domestic cash borrowing taking market conditions into consideration; to keep a certain level of

in 2005 to under a third by 2008 (Figure 14). An even faster repayment of foreign-currency-denominated debt would be more prudent, in the interests of reducing Turkey's public sector exposure to the exchange rate, even at the cost of higher debt service payments.[22]

Figure 14. Composition of foreign assets in Turkey
Baseline scenario, as per cent of GDP
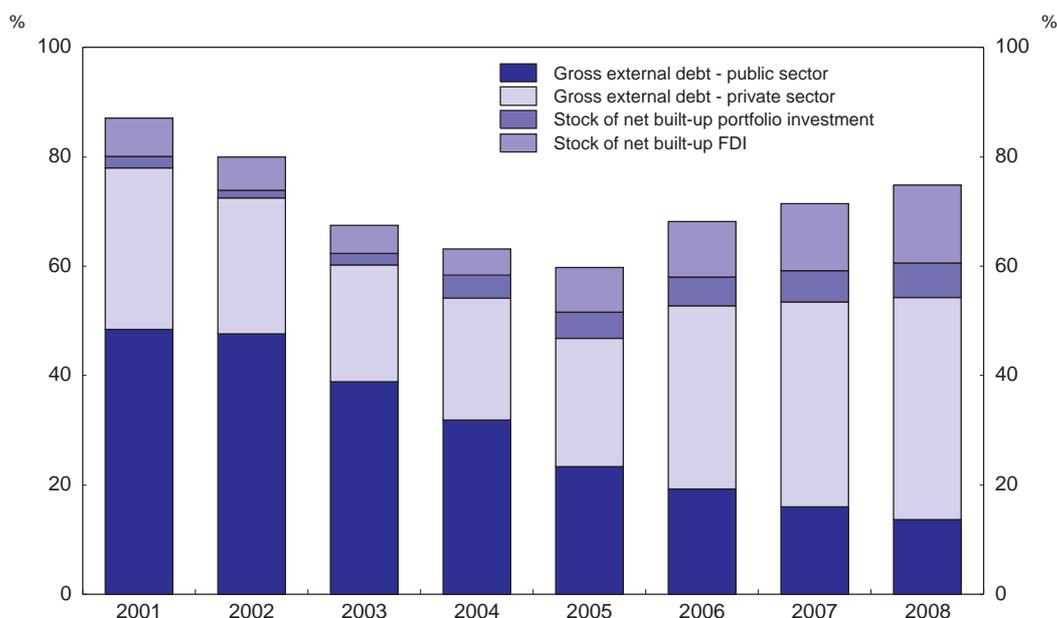
Source: Central Bank of Turkey and OECD.

Structural policy can also play an important role

37.   An accelerated pace of structural reform would reduce Turkey's macroeconomic vulnerabilities in three ways. First, higher GDP growth would directly serve to reduce the external debt ratio. Second a faster pace of structural reform would significantly improve the Turkish business environment and attract a higher level of FDI investment. Such higher non-debt-creating capital inflows would lower the need for additional external debt flows to fund the current account deficit. Despite their recent pick-up, non debt-creating capital inflows to Turkey (*i.e.* FDI) still remain quite low in comparison with other emerging market economies (Figure 4) and to date have been mainly directed to the services sector, rather than manufacturing, and are unlikely to pick up significantly further without these reforms. Finally, a better business environment would improve the sustainability of the current exchange rate level by permitting

cash reserves so as to reduce the liquidity risk associated with cash and debt management; not to exceed the roll–over ratio associated with foreign exchange denominated domestic debt over 80%. Also, as a part of the domestic borrowing strategy the Treasury has announced that it will not issue foreign exchange indexed bonds in domestic market in 2006. Thus the share of both floating rate and foreign currency denominated debt in total public debt is expected to decrease over 2006-2008.

22.   *E.g.* Williamson (2005) argues that emerging markets should limit, and perhaps ultimately eliminate, foreign currency borrowing by their governments. He proposes that emerging market governments should instead issue inflation-indexed, plain-vanilla bonds on their local markets and growth-linked bonds on the international market (such that the country would pay a higher yield when growth was strong and less when times were difficult).

faster productivity growth and competitiveness gains in the external sector - as described, for example, in the "accelerated structural reform" scenario illustrated in Figure 8.

38.   The required structural reforms are discussed in detail in Gönenç *et al* (2006). Essentially, Turkey must considerably reduce the very high burden of regulations that businesses must comply with, in order to permit more flexible business practices, to increase formalisation of firms currently operating with one foot in the informal sector, and to bring technology adoption and economies of scale within their reach. Without such reforms, the deterioration in the trade balance is likely to continue, increasing the chance of a large exchange rate depreciation, and a considerable rise in Turkey's external debt ratio.

Prudential banking supervision should be further improved, to strengthen financial sector resilience

39.   Turkey's banking system is significantly more at risk of negative fall-out from recent events than are banks in other OECD countries. Not only is Turkey in the process of adjusting to a downswing in credit growth, following a very considerable boom, but the extent of currency mismatches in the private sector also suggests that the corporate sector may suffer significant costs in response to exchange rate depreciation. These could have potential repercussions on the banking system. Finally, despite significant progress, the quality of financial supervision can be stepped up further. Each of these concerns is discussed in more detail below.

Excessive credit growth

40.   Following a significant fall in credit availability in the aftermath of the 2000/01 banking crisis, the level of real credit to the private sector rebounded strongly, reaching record highs. In fact, real credit increased by enough relative to its long-term trend that, according to the IMF (2004), it qualified as a "credit boom" (Figure 15).[23] This definition of a boom captures only extreme credit expansions (the worst 5%), which can have quite severe potential consequences. In particular, the IMF study found that there was almost a 70% probability that a credit boom would coincide with either a consumption or investment boom; that about 75% of the credit booms were associated with a subsequent banking crisis; and that 85% of the booms were associated with subsequent currency crises.[24] While much of this expansion in private sector credit reflected the release of pent-up demand for credit that was stifled under excessively high real interest rates, and public sector crowding out of private sector borrowing from banks, there were concerns about the ability of the banking system to cope with such a fast pick-up. A significant proportion of the increased private sector credit was directed into the housing market, but some of it also financed a pick up in real consumption growth, which has outstripped real wage growth (Figure 16).

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23.   Following the IMF (2004), a credit expansion in a given country is identified as a boom if it exceeds the standard deviation of that country's credit fluctuations around trend by a factor of 1.75. Using annual data the IMF calculates the HP filter using a lambda of 100. In Figure 2.15, which uses monthly data, a lambda of 2073600 was used, following the HP-filter frequency adjustment technique of Ravn and Uhlig (2001). This technique converts the lambda of 100 for monthly data to a yearly lambda using the following formula: $100*12^4 = 100*20736$.

24.   These conclusions followed from analysis of rapid credit growth in 28 emerging market economies during the period from 1970 to 2002.

Figure 15. A credit boom in Turkey

Index 1964=100   Index 1964=100

Real credit to the private sector(1)
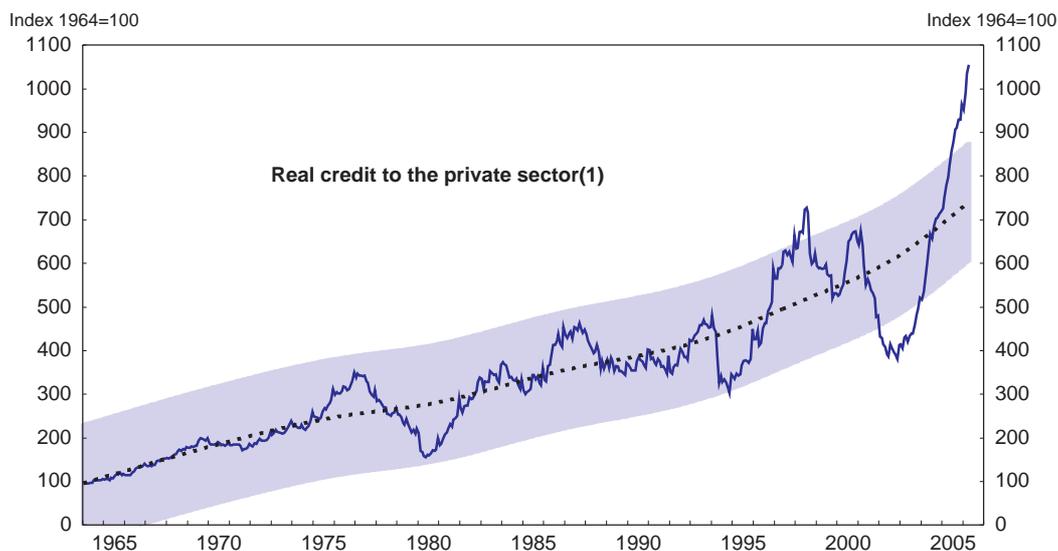
1   Real credit is calculated as the sum of claims on the private sector by deposit money banks (IFS line 22d) and claims on the private sector by other financial entities (IFS line 42d), deflated by the CPI. Note : HP filter trend, plus band equal to +/- 1.75 times the standard deviation of historical fluctuation, around trend.
Source: IFS, TURKSTAT and OECD calculations.

Figure 16. Consumption growth outstripping wage growth
Year-on-year percentage change

Consumption growth
Wage growth
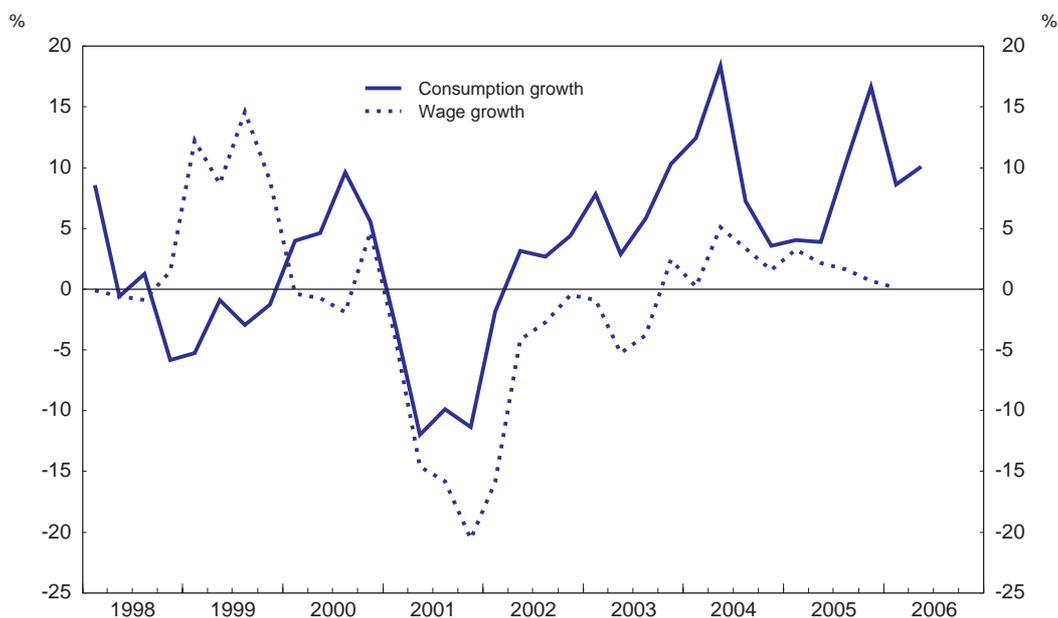
Source: TURKSTAT.

41.   More recently, this unsustainable boom has ended. Whereas banks had previously been lending at negative margins based on an assumption that interest rates would continue to fall, banks are now introducing more normal interest rate margins and adjusting to lower credit growth. The impact on corporate balance sheets remains to be seen. However, the combination of a sharp slow-down in demand together with significantly higher interest rates and a weak exchange rate could, at the least, be expected to result in a significant repositioning of balance sheets and a cut-back in borrowing. A worse case scenario would result in a significant increase in debt defaults, with implications for bank health.

Currency mismatches

42.   The prevalence of *asset and liability dollarisation* in Turkey means that currency mismatches are higher than in most economies, aggravating the possible impacts of exchange rate depreciation. The extent of *asset dollarisation* has fallen in Turkey since the 2001 crisis, but it remains high[25], as does the extent of *liability dollarisation*. To date, Turkey has hoped to encourage de-dollarisation through ensuring sound and credible monetary and fiscal policies. While these are indeed necessary conditions for de-dollarisation, they may not be sufficient. Recent research has shown that financially dollarised economies are burdened with considerable costs - a more unstable demand for money, a greater propensity to suffer banking crises after a depreciation of the local currency, and slower and more volatile output growth - without significant gains in terms of domestic financial depth.[26] Intuitively, the magnitude of depreciation would tend to be exacerbated by the likelihood that residents would rapidly increase their dollarisation of assets as soon as *expectations* of a significant depreciation developed.

43.   While the extent of asset dollarisation is relatively well documented in Turkey,[27] less information is available on the magnitude and incidence of liability dollarisation. This is unfortunate, since it is the holders of foreign currency liabilities who suffer in the event of exchange rate depreciation. The available evidence suggests, however, that most foreign-currency assets (bank deposits) are held by households whereas most liabilities are held by businesses. For exporting firms, foreign exchange liabilities are unlikely to present a significant risk, since their foreign currency earnings provide a natural hedge. However, evidence from firms' balance sheets suggests that one of the three sectors with the highest levels of foreign exchange liabilities, relative to GDP, is the Electricity, Gas and Water (EGW) sector, which would seem to be limited in its foreign exchange earnings potential (Figure 17).[28] The other two sectors with significant foreign exchange liabilities are the manufacturing sector and the Construction sector, both of which can be considered partially hedged through their export receipts, which could be expected to rise in response to exchange rate depreciation.[29]

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25.   *E.g.* see Yilmaz (2005) who uses Reinhart *et al*'s (2003) framework to show that Turkey's degree of dollarisation is high by international standards.

26.   Levy-Yeyati (2006).

27.   The central bank's asset dollarisation index shows the share of the non-banking sector's total portfolio which is denominated in foreign currency. According to this index, the degree of dollarisation fell from 40% at the end of 2001 to 26% as of October 2005. See Box 4.1 "De-dollarization Process and Turkey" in the CBRT monetary Policy Report 2005-III (http://www.tcmb.gov.tr/research/monpolreports.htm).

28.   Since the EGW sector is largely an importer of energy, these foreign exchange liabilities may largely represent supplier credits. In this case the vulnerability of this sector to exchange rate depreciation may largely depend on whether or not the credits are essentially forward agreements (in which case the vulnerability would be limited) or subject to exchange rate changes.

29.   Approximately 15% of GDP in the construction sector in 2004 came from construction sector "exports of services". While the proportion of manufacturing sector earnings that are in foreign currency may be larger (around 29% in 2004), the extent to which manufacturers' net foreign exchange earnings would increase in the event of exchange rate depreciation would also depend on the import-intensity of their inputs.

Figure 17. Foreign exchange exposure varies across sectors
Foreign exchange credit by sector, as per cent of sectoral GDP
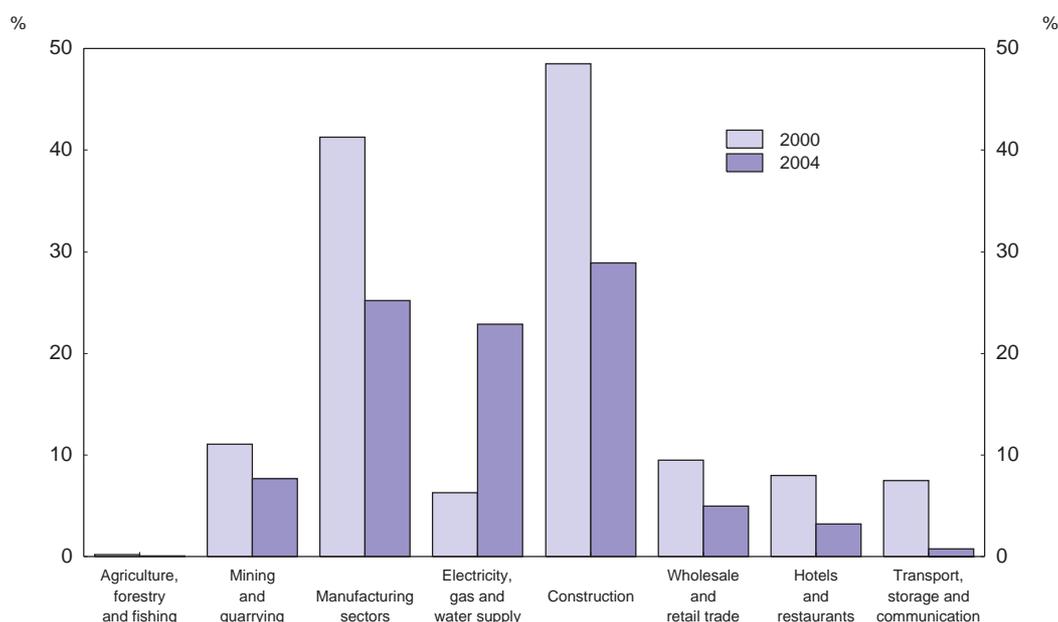
Source: Central Bank of Turkey.

Improved prudential banking regulation is therefore important

44.   The quality of prudential banking regulation and supervision has dramatically improved since the banking crisis of 2001. However, some required reforms in the areas of financial sector reform and banking supervision are yet to be implemented, particularly in the fields of corporate governance, human resources and organisational incentives, as recommended by the Imar Commission (Box 6). By continuing to maintain and build on the financial sector reforms introduced over the past five years, further improvements in the performance and governance of the Banking Regulation and Supervision Agency (BRSA) can further strengthen the banking system, contributing to improved macroeconomic resilience and investor confidence. Although the banking system is certainly much stronger today than during the crisis, significant room for improvement remains.

45.   In addition, the risks associated with currency mismatches suggest that there is a case to be made for the introduction of more active de-dollarisation policies to discourage private-sector borrowers and lenders from issuing and holding assets denominated in foreign currency. For example, consideration could be given to more far-reaching policies, such as those proposed by Levy-Yeyati (2006) as follows:

- A further modification of the standard prudential best practices such that higher credit risk is assigned to FX-indexed loans to non-FX earners.[30]

- The introduction of a larger deposit insurance contribution on dollar deposits, or a liquid asset requirement proportional to the dollar share of the bank's liabilities. The goal of this policy should be to ensure that financial safety nets do not discriminate in favour of highly dollarised banks that are more exposed to balance sheet effects of large exchange rate shifts.

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30.   At present standard prudential practices only address currency imbalances at the bank level and through limits on open currency positions, rather than by acknowledging the positive correlation between exchange rate risk and credit risk in financially dollarised economies.

Box 6. The agenda for strengthening prudential banking supervision according to the Imar Commission

Following the banking crisis of 2001, private banks were successfully recapitalised and returned to profitability with sufficient financial resources to contribute to economic growth. Wide-ranging reforms to the financial sector and the banking system were also introduced. However, these reforms did not prevent the 2003 failure of Imar Bank, which stemmed from accounting fraud which had not been identified by the Banking Regulation and Supervision Agency (BRSA). The cost to the Turkish government of compensating Imar Bank depositors has been estimated at around 2.5% of GDP.[1] In response, the government formed an independent commission (consisting of two reputable international bank supervisors) to draw lessons from this incident. The resulting report, published in August 2004, concluded that the likelihood of such bank failures in the future could be reduced by modernisation of the system of corporate governance in banks and external audit processes and by strengthening the BRSA's incentives to undertake its work effectively.[2] Most of the suggested reforms have subsequently been implemented, particularly those that related to the legal framework.[3] However, further improvements are required, particularly in the areas of financial and human resources and the organisation of the supervision and governance structure of the relevant institutions.

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1. Josefsson and Marston (IMF, 2005) have estimated that the total cost to the government of restructuring the banking system since the crisis amounted to about USD 47 billion (32% of GDP), of which USD 6 billion was the cost of compensating depositors in Imar Bank and an estimated USD 2 billion for the recapitalisation of Pamukbank.
2. Fort & Hayward (2004).
3. The Imar Commission report prompted legislative changes to the Banking Law which were introduced in November 2005.

46.   Such policies designed to improve the prudential regulation of the banking system, should also be complemented by policies to actively promote the availability of hedging and derivative instruments, to better enable corporations to manage their foreign exchange exposures.

Conclusions

47.   Despite, and perhaps partly *because of*, good macroeconomic management after the crisis of 2001, Turkey attracted considerable capital inflows, most of which were seeking high yields, and this put upward pressure on the exchange rate and contributed to a significant widening in the current account deficit. More recently the global risk appetite for Turkish assets weakened and the exchange rate depreciated. This should largely be seen as a good thing, in the sense that it reduced the risk of a larger adjustment later. However, together with the recent upward blip in inflation, this implies a significant loss of central bank credibility, and this will be difficult to restore. Even after the recent volatility, there still remains a significant risk that a *further* deterioration in the global economic environment, or a loss of domestic confidence could prompt even more abrupt changes in the exchange rate, inflation, and the financial sector, leading to severe macroeconomic instability. For given public and external debt ratios, these risks are significantly greater for Turkey than for most other OECD economies.

48.   Box 7 summarises a number of steps that the government can take to minimise the risk of the situation worsening further. Significant policy efforts should be devoted both to reducing the risk of shocks, and to strengthening the resilience of the economy to cope with such shocks should they occur.

Box 7. Summary of recommendations to improve resilience to shocks

Fiscal policy

- Strengthen the transparency and credibility of fiscal institutions by:

    - Announcing an intention to publish consolidated general government accounts according to national accounting standards, together with a timetable for getting there. At a minimum, the goal should be to begin publishing these accounts before the end of the government's current agreement with the IMF.

    - Addressing concerns about the permanence and stability of the new fiscal framework.

    - Improving the coordination of fiscal responsibilities within the government.

    - Continuing to press ahead with performance-oriented budgeting, including the active promotion of cultural change within the public sector.

- Continue to improve the functioning of the automatic stabilisers by extending the new expenditure targets to the 3-year budget framework and to other branches of the general government.

- Prioritise the re-payment of foreign-currency-denominated public debt, even at the cost of higher lira-denominated debt-service payments.

- Ensure that the draft mortgage law does not make interest rate payments tax deductible, or otherwise prompt excessive lending.

Monetary policy

- Make public a comprehensive road map for the re-establishment of disinflation. The risks entailed in achieving this medium-term objective, and the Bank's likely response to such risks should be clearly articulated, and all communications should be made promptly available in English as well as Turkish.

- The central bank should also begin calculating and publishing alternative measures of core inflation, such as a median measure and a trimmed mean.

Other policies that impact on inflation

- Use considerably greater restraint in adjusting the minimum wage and introduce regional differentiation in this wage (as discussed in Gönenç *et al* (2006)).

- Use greater restraint in public sector wage adjustments, and encourage the containment of wage and price increases in the private sector. In particular, ensure that public sector wages do not accommodate the recent inflationary shock.

- Promote a considerable relaxation in employment protection legislation to improve the efficient functioning of the labour market.

- Promote far-reaching structural reform to improve productivity growth and business competitiveness, and to improve wage and price flexibility (both of which will help to reduce services inflation).

Bank regulation and prudential supervision

- Ensure that the corporate governance of the BRSA is further improved, as recommended by the Imar banking commission, in order to ensure strong incentives to monitor the financial sector well. Consider strengthening the prudential supervision of the banks in a way that further reduces the risks to the financial system.

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ANNEX

Debt Sustainability scenarios: methodology and assumptions

The stochastic debt sustainability scenarios discussed in the text stem from a simple accounting framework and the recognition that the relevant economic variables such as growth, real interest rates, and the exchange rate are subject to uncertainty. In order to ensure some margin for comfort in the event of unforeseen circumstances, the authorities should set policy so as to ensure that debt levels remain sustainable even in the face of adverse shocks.

This Annex describes the identities that were used for as a base for developing the stress-testing framework discussed in Box 2 of this paper, and the assumptions behind the baseline scenarios.

A.1 Public debt dynamics

In nominal terms, the stock of public debt at time t can be explained by the following identity:

$$B_t = (1 + r_t) B_{t-1} + D_t \quad - S_t - Pr_t \tag{1}$$

Where:
B: public debt (bonds)
r: weighted average nominal interest rate on government bonds
D: primary fiscal deficit
S: Seigniorage (monetary financing of the fiscal deficit)
Pr: privatisation receipts
All stock variables are expressed as end-of-period values, while flow variables and interest rates are period averages.
By expressing the key variables as a percentage of GNP (small letters), by differentiating between public debt denominated in local versus foreign currency, and by introducing nominal exchange rate appreciation/depreciation so as to account for the revaluation of last period's foreign-currency denominated debt the following equation is obtained:

$$b_t = [(1 + r^{fl}_t) \, \gamma \, b_{t-1} + (1 + r^{fl}*_t)(1 - e_t) \, \gamma^* \, b^*_{t-1} + (1 + r^F_t)(1 - \gamma) \, b_{t-1} + (1 + r^F*_t)(1 - e_t)(1 - \gamma^*) \, b^*_{t-1}] /$$
$$(1 + g_t) + d_t - s_t - pr_t \tag{2}$$

Where:
r^{fl}, $r^{fl}*$: domestic and foreign nominal interest rates on floating rate debt.
r^F, r^F*: domestic and foreign nominal interest rates on fixed rate debt.
g: nominal GNP growth rate
γ, γ^*: shares of floating debt in total lira-denominated and foreign-currency-denominated debt respectively
e_t: per cent nominal exchange rate appreciation over period t. The nominal exchange rate is expressed as units of foreign currency per unit of domestic currency (*i.e.* an increase in E corresponds to a nominal appreciation).
Equation 2 is the one that is used to produce the public debt scenarios in Figure 6 of this paper. The key economic assumptions behind the baseline scenario is summarised in the following table.

Table A1.1. Baseline assumptions for public debt scenarios

	2005 (estimates)	2006	2007	2008
Real GDP growth (%)	7.4	5.5	5.5	5.5
Real effective exchange rate appreciation (%)	20.5	-10.0	0.0	0.0
Primary fiscal balance (% of GNP)	6.0	6.5	6.5	6.5
Privatisation receipts (% GNP)	0.4	1.7	1.5	1.5
Nominal floating interest rate on lira-denominated public debt (%)	17.0	17.0	16.0	14.5
Nominal fixed interest rate on lira-denominated public debt (%)	16.3	16.3	15.0	13.5
Nominal floating interest rate on for-currency-denom public debt (%)	8.0	8.0	7.7	7.4
Nominal fixed interest rate on foreign-currency-denom public debt (%)	4.5	4.5	4.2	3.9

For the other two public debt scenarios the assumptions for 2007 and 2008 are changed as follows:

External shock scenario: All interest rates 400 bps higher (this is around the magnitude of the increase in Turkish spreads in 2001, compared with 2000); GNP growth falls to 2% per annum; the primary fiscal surplus falls to 4% of GNP; the nominal exchange rate depreciates by 10% in each of 2007 and 2008.

Fiscal policy reversal scenario: In this scenario it is assumed that the primary fiscal surplus falls to 2% of GNP and this is entirely due to a weakening of fiscal discipline, rather than due to cyclical factors. Floating interest rates are assumed to be 800 bps higher (in previous crises domestic borrowing rates have more than doubled. This assumption implies a smaller increase than that); Fixed rates are assumed to be 400 bps higher (about half the impact of floating rates, consistent with the longer maturity structure); GNP contracts by 2% per annum;

A.2   External debt dynamics[31]

In nominal terms, an equation defining the stock of external debt (*i.e.* debt owed to foreigners) at time t can be derived from the following balance of payments identity:

$$TD_t + (r1^*{}_t K^{FDI}{}_t + r2^*{}_t K^{Port}{}_t + r3^*{}_t FD^G{}_t + r3'^*{}_t FD^P{}_t) - Tr_t =$$
$$FDI_t + Port^{Debt}{}_t + Port^{Equ}{}_t + (L^G{}_t + L^P{}_t) - \Delta Res_t \qquad (3)$$

Where:

TD: trade deficit

$K^{FDI/Port}$: Net stock built-up from FDI / Portfolio investment flows

$FD^{G/P}$: Net foreign-currency-denominated debt of the government / private sector

$r1^*$ and $r2^*$: nominal interest rates (dividend payments) paid on the stocks of FDI and of portfolio investment

$r3^*$ and $r3'^*$: nominal interest rates paid on foreign debt by the government and the private sector

Tr: transfers

$Port^{Debt/Equ}$: portfolio flows, debt and equity

$L^{G/P}$: new loans (borrowing) subscribed by the government and the private sector

ΔRes: change in the shock of foreign reserves (an increase in the stock of reserves would reduce the external funds available for current account financing needs).

As in the case of public debt, all stock variables are expressed as end-of-period values, while flow variables and interest rates are period averages.

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31.   The focus of this analysis is on gross, rather than net external debt, in recognition of the fact that while some private sector participants have external *assets*, these are not normally the same agents who hold the external *liabilities*, so that dollar- and euro-assets would normally provide little hedge to debtors in the face of a significant exchange rate depreciation.

This identify can also be expressed in terms of new debt flows that contribute to external indebtedness (L^G + L^P + $Port^{Debt}$):

$$L^G_t + L^P_t + Port^{Debt}_t =$$
$$(TD_t + r^*_t Liabilities_t - Tr_t) - (FDI_t + Port^{Equ}_t) + \Delta Res_t \qquad (4)$$

In other words, all capital outflows resulting from the trade deficit and net investment income payments, that are not offset by capital inflows stemming from net transfers, capacity-building investments and sales of domestic assets (FDI and equity portfolio inflows), has to be financed via increased external indebtedness of the government sector (L^G) or the private sector (through external borrowing by commercial banks (L^P) and/or portfolio debt flows ($Port^{Debt}$)), and/or by the use of reserves by the central bank.

In practice, however, since the central bank is not permitted to use foreign exchange reserves to reduce the level of MOF or private sector external indebtedness, this term is dropped from the equation. With all variables expressed in lira terms, the stock of gross foreign debt (FD) expressed as a percentage of GNP (fd) at time t is given by the following equation:

$$fd_t = [(1 - e_t) fd_{t-1} + r1^*_t k^{FDI}_{t-1} + r2^*_t k^{Port}_{t-1} + r3^*_t fd^G_{t-1} + r3'^*_t fd^P_{t-1}] / (1 + g_t) + td_t - tr_t - (fdi_t + port^{Equ}_t) \qquad (5)$$

where :

fd: gross external debt expressed in domestic currency as a percentage of GNP

$k^{FDI/Port}$: net stock built-up from FDI / portfolio investment flows in terms of GNP

$fd^{G/P}$: net external debt of the government / private sector in terms of GNP

r1*, r2*: nominal interest rates (dividend payment) paid on the stocks of FDI and of portfolio investment

r3*, r3'*: nominal interest rates paid on foreign debt by the government and the private sector

td: trade deficit, as percentage of GNP

tr: transfers, as percentage of GNP

fdi: net FDI flows, as percentage of GNP

$port^{Equ}$: net equity portfolio flows, as percentage of GNP

Equation 5 is then used to produce the external indebtedness scenarios illustrated in Figure 8 of this paper. The key economic assumptions behind the baseline scenario are summarised in Table A1.2:

In addition it is assumed that the public sector continues to pay down its stock of external debt only according to the IMF net repayment schedule (USD 3.4b in 2006; USD 2.9b in 2007 and USD 1.8b in 2008). The stock of non-IMF public external debt is thus assumed to remain unchanged.

Table A1.2. Baseline assumptions for external debt scenarios

	2005 (estimates)	2006	2007	2008
Real GDP growth (%)	7.4	5.5	5.5	5.5
Real effective exchange rate appreciation (%)	20.5	-10.0	0.0	0.0
Net FDI flows (% of GNP)	3.5	2.0	2.0	2.0
Net portfolio equity capital flows (% of GNP)	0.5	0.5	0.5	0.5
Trade deficit (% of GNP)	5.2	5.0	4.0	4.0
Weighted dividend payments on net FDI (%)	3.3	3.0	3.0	3.0
Weighted dividend payments on net portfolio equity capital[1] (%)	5.0	5.0	5.0	5.0
Weighted nominal interest rate on foreign-denom public debt (%)	6.3	6.3	6.0	5.7
Weighted nominal interest rate on foreign-denom private debt (%)	9.3	9.3	9.0	8.7

1. Estimated cash returns only, not including capital gains.

For the other two scenarios the assumptions for 2007 and 2008 are modified as follows:

External shock scenario: All interest rates 400 bps higher; GNP growth falls to 2% per annum; FDI flows fall to zero; the nominal exchange rate depreciates by 10% in 2007 and by a further 10% in 2008; in response to the exchange rate depreciation, the trade deficit improves to 3% of GNP in 2007 and to 2% of GNP in 2008. This shock is the same as the external shock in the public debt sustainability exercise, with the addition of the assumptions that FDI flows drop to zero and the trade deficit improves.

Loss of competitiveness scenario: The trade deficit increases to 6% of GNP; nominal interest rates increase by 200 basis points; the nominal exchange rate depreciates by 5% in each of 2007 and 2008.

Structural reform scenario: FDI flows pick up to 4.0% of GNP per annum; GDP growth increases to 6.5% p.a; the real exchange rate appreciates by 3% per annum, in line with improved productivity growth and business sector competitiveness.

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