CURRENCY AND FINANCIAL CRISES IN TURKEY 2000-2001: BAD FUNDAMENTALS OR BAD LUCK?

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1. INTRODUCTION

The 1990s posed serious challenges for policy makers in a large number of countries in the setting of foreign exchange policy. A number of emerging market countries including Mexico, Brazil, Turkey, Argentina and a group of Asian countries fell out of their currency pegs and had to float their currencies. Such shifts in exchange rate regimes were, by no means, painless. In most cases, the collapse of the fixed exchange rate regimes were initiated by immense market pressure. The emerging market-specific nature of banking and financial systems has played a crucial role in turning these currency collapses into full-blown financial crises. The regularity of such experiences together with their very serious consequences makes it all too clear that the sources of these events must be well understood. This paper, therefore, attempts to shed some light on this issue by providing insights from the financial and currency crises experienced by Turkey at the beginning of the new millennium.

At the end of 1999 Turkey adopted an ambitious stabilisation program backed by the IMF. [2] This program aimed to reduce inflation that had lain in the range of 65-90 per cent throughout the 1990s. Central to the stabilisation program were: a strong

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[2] Turkey had had 16 stand-by agreements with the IMF previously, all but two of which were abandoned before completion.

exchange rate commitment; tight monetary control; a large fiscal adjustment to eliminate inflationary pressures; and a range of structural measures designed to liberalise the economy. Initial indications after the adoption of the program were encouraging, with a considerable improvement in inflationary expectations leading to a fall in interest rates on Treasury bills from 90 per cent to around 40 per cent.[3] Moreover, inflation was on a falling path and fiscal adjustment was in line with the objectives set-out in the program. However, a severe liquidity crisis hit the economy in November 2000 barely a year after the start of the program. Although an IMF-led emergency package succeeded in normalising the situation for a while, the Turkish lira came under heavy attack in February 2001, which turned into the most serious financial and economic crisis Turkey has experienced in its post-war history.[4] The purpose of this paper is to attempt to identify the underlying causes of the crisis in Turkey by drawing on the findings and predictions of the recent literature on currency and financial crises.

The currency crises experienced by the European Exchange Rate Mechanism (ERM) in 1992-1993 and by Mexico in 1994 led to a re-think of the causes of such crises within the economics profession. The existing wisdom at the time, which later came to be referred to as first generation models (FGM) was that currency collapses occurred as a result of the inconsistency between expansive domestic policies and the fixity of the exchange rate. It was argued that, once the domestic country starts to operate such inconsistent policies it is only a matter of time before a speculative attack depletes the reserves of the central bank which will inevitably float the currency (see, for example, Krugman, 1979).

However, such policy inconsistencies were not experienced by the members of the ERM which, nonetheless, observed massive attacks on their currencies in September 1992 and August 1993. It was commonly argued that the recession experienced by these countries at the time made it particularly difficult to defend the fixed rate, which required following tight monetary policy stance of Germany. Such experiences played

[3] Interest rates on Treasury bills were 95 per cent at the end of November 1999. They were down to 38 per cent by mid January, approximately a month after the adoption of the stabilisation programme on 9th December, 1999. See, for example, Financial Times, June 12, 2000, for an article on the early success of this programme.

[4] Throughout the paper, the term 'crisis' is used interchangably with 'financial and currency crises' to refer to the co-occurence of both the liquidity squeeze in November 2000 and the collapse of the currency peg in February 2001.

a crucial role in the emergence of a new approach to currency crises which models the choice between different exchange rate regimes as a conscious decision made by an optimising policy maker who weighs the benefits versus the costs of different regimes. This approach is now referred to as second generation models (SGM) (see, for example, Obstfeld, 1994, 1996; Bensaid and Jeanne, 1997; and Ozkan and Sutherland, 1995, 1998 among others).

By the summer of 1997 the world financial and currency markets were hit by another wave of crises, this time in East Asia. Although the sources of the Asian crises are still debated, there is widespread agreement that the underlying cause in this case was mostly the financial fragility caused by excessive borrowing by the private sector. Following from this Asian experience there emerged third generation crisis models that explicitly incorporate the role of imbalances in the financial sector on financial and currency crises (see, for example, Corsetti et al., 1998a,b; Radelet and Sachs, 1998; and Kaminsky and Reinhart, 1999).

By incorporating insights from these recent crisis models, this paper attempts to identify the causes of the currency and financial crises experienced by Turkey, as mentioned above. To understand what was at the root of these crises, we study an extensive set of leading indicators drawn from the existing literature. Our results highlight the importance of the following in triggering the financial crises and bringing about the collapse of the Turkish lira: the weak fiscal position resulting from record levels of interest payments on domestic borrowing; the weak external position caused by the loss of competitiveness in the face of the tight exchange rate commitment and inflation rates that still sailed much above the target devaluation rates, and the weaknesses in the financial and especially the banking sector.

The remainder of this paper is organised as follows. Section 2 presents an account of the crisis in Turkey and provides alternative explanations. Section 3 concludes the paper.

2. AN ACCOUNT OF THE CRISIS IN TURKEY: ALTERNATIVE EXPLANATIONS

It is widely acknowledged that the emergence of financial problems in some commercial banks in November 2000 was the trigger for the ensuing liquidity squeeze in Turkey. In fact, interest rates were already on a rising path, which led the banks in difficulty to attempt to maintain liquidity by selling their holdings of government bonds. The situation greatly worsened on 20 November with immense pressure on overnight interest payments, as is seen in Fig.1. This dramatic rise in interest rates had serious consequences for the banking sector. Such turmoil in the financial markets also created excess demand for the dollar with resulting losses of the central bank's foreign exchange reserves. News about a large emergency IMF package in the following week helped reduce the tension in the markets. However, the Turkish lira continued to be overvalued as a result of the slow fall in inflation. Against this background, a public disagreement between the Prime Minister and the President was followed by a massive attack on the Turkish lira on the 21st of February 2001. The authorities decided to float the currency the following day with 28 per cent loss of value against the dollar. In the subsequent two months, the Turkish lira lost almost half of its value. The resulting output loss was substantial and the economy contracted by over nine per cent in 2001, which was the nation's most severe recession since World War II.[5]

The next section aims to identify the sources of these currency and financial crises and provide alternative explanations. The first, fundamental based explanation, utilizes the first and second generation currency crises models for the identification of a set of potential fundamentals. The second, financial fragility based explanation, relies on the third generation models in specifying fragility measures that were useful as indicators for a number of other emerging market crises.

We present data over three different spans. First, we look at the evolution of the likely indicators during the period immediately before the crisis, over the period 1999-2000. Second, we inspect the change in the potential determinants throughout the 1990s for medium term tendencies. Third, for some of the variables we go as far back as early 1970s to put the crisis period into some historical context. Our results

[5] Financial Times, April 2, 2002.

suggest that while some of the vulnerabilities that prepared the ground for the crisis have been among the stylized facts of the Turkish economy for some time, deterioration in some other areas had been particularly severe in the run up to the recent crisis.

a. A Fundamental Based Explanation

(i). *Overall macroeconomic position*

One of the postulates of the SGM is that the switch from a fixed exchange rate regime is initiated by some form of macroeconomic tension that is made worse by the discipline imposed by the existence of the fixed rate. For example, a rise in interest rates required to maintain the peg is likely to have a number of undesirable consequences. For instance, such increases in domestic interest rates would lower investment and consequently lead to poor output performance. To the extent that policy makers are concerned about output and employment, deterioration of these is likely to alter the balance of perceived costs and benefits of alternative exchange rate regimes in favour of floating. In less than fully credible fixed exchange rate regimes, expectation of a devaluation is also likely to cause higher wage demands and, therefore, lower employment and output, which in turn, increases the pressure to devalue.

Table 1 presents the growth of output in Turkey since 1996 to help evaluate the output performance in the pre-crisis period. It is clear that throughout this period the growth rate of output was very variable.[6] Also, there was strong growth performance throughout the program period. This is in line with the stylized facts of exchange rate based stabilization programs where the initial period is usually associated with output expansion as opposed to money based programs where output contraction follows the program adoption.[7]

To sum, there is no evidence of poor output performance in the period leading up to the crisis.

[6] In fact, the growth rate was very variable throughout the 1990s. The economy grew by over nine per cent in 1990, followed by a number of stop-gos.

[7] See, for example, Rebelo and Vegh (1995).

(ii). *External Balance*

It is widely recognised that one of the common- though neither necessary nor sufficient- indicators of an impending crisis is the deterioration in the external balance. Such worsening external balances are also among the main features of exchange rate based stabilisation programs. Given the fixity of the exchange rate (or the exchange rate changes) real appreciations distort the relative prices in favour of imports versus exports leading to a worsening current account balance. This is usually followed by devaluations and, therefore, by the end of the relevant stabilisation program. For example, several Asian countries whose currencies collapsed during 1997 experienced sharp deteriorations in their current accounts throughout the 1990s. Similarly, during the period preceding the ERM crises of 1992-93, member countries experienced serious losses of competitiveness and as a result, their external balance deteriorated.[8]

One measure of the significance of the external balance is the degree of the openness of the country in question. A widely used measure of the openness of an economy is the total of exports and imports as a proportion of GDP. Fig.2 plots the evolution of this ratio for Turkey since 1960. There is clear evidence that openness of the Turkish economy increased sharply in the aftermath of the liberalisation of the early 1980s.[9]

Various aspects of the external balance in Turkey over the crisis period are analysed below.

Trade balance and current account balance

Fig.3 plots the trade balance with the rest of the world between 1984-2000, which reveals that the trade balance was on a downward trend starting from the late 1980s. Although there were a number of reversals in the trend, the downward spiral continued until the end of 1990s.

Fig.4 plots the evolution of the current account balance during the same period. Although the current account figures are more optimistic -thanks to a steady inflow of

[8] See, the Economist, 19 September, 1992 and Eichengreen, Rose and Wyplosz (1993). Ozkan (2003) also provides evidence for the significant role the loss of competitiveness played on the devaluation risks of the ERM member countries in this period.

[9] See, Edwards (1993) and Greenaway (1993) for a discussion of implications of trade liberalizations especially for developing countries.

remittances from the Turkish workers abroad- the downward trend is also evident here. The deterioration of current account especially in the second part of 2000 has often been highlighted as one of the origins of the difficulties (see, for example, Alper, 2001; Yeldan, 2001; and Ertugrul and Selcuk, 2001). OECD's 2001 Economic Survey of Turkey also identifies the worsening of the current account deficit among the main sources of macroeconomic tensions.

Table 2 provides trade balance and current account figures for 1996-2000 to facilitate a closer look at the pre-crisis period. Clearly, both the trade and the current account deficits deteriorated sharply throughout the program implementation period and reached record levels by the end of 2000.

To the extent that these balances can be used as warning signals for the fragility of the peg, there was some cause for concern especially from the second quarter of 2000 and increasingly so in the lead up to November 2000.

Competitiveness

One of the underlying sources of movements in both the trade and the current account balances is the competitiveness of the external sector. In high inflation countries where an exchange rate based program is put into place, the evolution of domestic inflation is a key determinant of competitiveness. If domestic inflation is above the foreign one, competitiveness of the home country will be eroded given that the exchange rate can not respond to do the necessary adjustment. This, in turn, damages the credibility of the peg. In the case of Turkey, a crawling peg against a dollar-euro basket was at the centre of the stabilisation program. There was a pre-specified timetable of devaluation rates until the end of 2002.

Fig.5 plots the inflation performance over the past three decades. Clearly, the recent stabilisation program was successful in reducing inflation which had been on a sharp upward trend since the 1980s. However, it is important to note that notwithstanding this reduction, inflation rates for 2000 and 2001 stood at over 40 per cent, which were still above the target devaluation rates. This, in turn, resulted in a non-negligible loss of competitiveness of the Turkish economy over this period.[10, 11]

[10] This view is also reinforced by the results of a survey conducted by the International Institute for Management Development (IIMD). The criteria assessed by IIMD have wider coverage and incorporate government efficiency, business efficiency and infrastructure in addition to economic performance. The resulting World Competitiveness Index ranks Turkey as the 46th among the 50 surveyed in 2000 (The Economist, May 5th, 2001, p.124).

A more direct way of evaluating competitiveness would be by examining the real exchange rate developments during the analysis period. Figures 6 and 7 exhibit two alternative measures of real exchange rates. The first is quarterly series of real effective exchange rate index for the period 1995-2001 based on CPI. These series are provided by the Central Bank of Turkey and are calculated using the IMF weights for 19 trading partners countries. The second is the OECD's annual relative unit labour cost indices for 1987-2001. These figures help track the developments in the real exchange rate during this period, which can be summarised as the following. First, there was a steady real appreciation of the Turkish lira up until 1994. This was partly due to the combination of expansionary fiscal and tight monetary policy during this period. The pace of this real appreciation was fastest between 1989 and 1991. The resulting deterioration in the external balance is visible from both Figures 3 and 4. 1994 crisis brought about a considerable reversion of this process with a large depreciation of the nominal exchange rate. However, the real exchange rate started on a new appreciation path from 1996 and reached very high levels prior to the devaluation in February 2001. Not surprisingly, both trade and current account balances were on a sharp downturn over the corresponding period.

External borrowing

In countries where unfavourable current account imbalances are sustained over a long period of time, there is usually a corresponding unfavourable balance on external borrowing. When that is the case, a sudden rise in interest payments on these obligations sharply increases the amount of resources that the country in question has to transfer from its economy, in order to continue servicing its foreign debt. This section analyses the profile and the composition of the external debt in Turkey during the 1990s.

Fig.8 plots Turkey's total external debt since the early 1970s revealing a drastic rise in foreign borrowing in this period. Total foreign debt levels rose from around 3 billion dollars in 1971 to over a 100 billion dollars in 2000. The outstanding external debt as a percentage of GDP also reached very high levels -as high as nearly 60 per

[11] Akyuz and Boratav (2001) observe that exchange rate based stabilisation programs adopted by other high inflation countries were considerably more successful in reducing inflation. For example, it was noted that, during the 1990s both Mexico and Brazil succeeded in reducing their respective inflation rates from triple and quadruple digits to 20 and 22 per cent respectively, within the first two years of their stabilisation programs.

cent in 2000.[12] In order to assess the sustainability of such levels of foreign borrowing it is necessary to establish the capacity of the Turkish economy to repay this level of debt. This constitutes an important source of potential change in sentiments about the credibility of the exchange rate regime itself. Therefore, in what follows we present a profile of the external borrowing structure in Turkey during the 1990s.

Table 3 presents data on the annual percentage change in the total outstanding external debt by maturity since 1997, which highlights the sharp rise in short-term borrowing over this period. Fig.9 provides information on the recipients of this borrowing. Clearly, the share of the commercial banks in this short-term borrowing rose very sharply after 1996. As will be discussed below, this aggressive borrowing strategy at the short end of the maturity scale was one of the main sources of the vulnerability of the banking sector that was behind the liquidity shortages in November 2000. On the other hand, Fig.10 reveals that the share of the public sector in the markets for medium and long-term borrowing rose drastically over the same period.

An important aspect of the health of the external balances is related to the ability of the country in question to service its debt. This ability, in turn, has two dimensions. The first is the absolute amount of debt service and the second is the capacity of the economy to generate sufficient resources to pay for the required amount. Any proper measure of debt servicing capacity should, therefore, incorporate both of these aspects. Table 4 lists three alternative such measures for Turkey for the period 1996-2000. The first two columns express the ratio of debt service to GDP and exports, respectively. Both ratios draw an alarming picture for the burden of debt servicing and, therefore, for the sustainability of such re-payments. The third column lists the due interest payments as a ratio of exports, which similarly highlights that an increasingly heavy burden was imposed on foreign currency earnings throughout the period, especially in 1999 and 2000. For comparative purposes, Table 5 provides the ratio of debt service to exports of a number of East Asian countries prior to the Asian crisis. A glance at these two tables suggests that the worsening of the external balance and the debt servicing ability in the pre-crisis period was much worse in Turkey than any of the troubled Asian countries prior to their respective crises.

[12] See, outstanding external debt profile by the Undersecretary of Treasury at www.treasury.gov.tr.

The above discussion of the vulnerability of the external account focused on an evaluation of a number of separate indicators. A more appropriate way of analysing external sustainability would be through the use of a unified measure combining indicators of external debt burden and the health of trade balances. One such measure has been proposed by Chalk and Hemming (2000) which is based on the notion that external sustainability is only possible when the path of the trade balance leads to non-increasing foreign liabilities over time.

Now consider the following relationship between net foreign liabilities and trade balances

$$(1+q_t)(1+n_t)f_{t+1} = R_t^* f_t - tb_t \qquad (1)$$

where q is the real appreciation of the currency, n is the growth rate of real output, f is the net foreign liabilities- defined as external debt minus foreign assets including international reserves- as a proportion of output, R^* is the world interest factor (R^*_t=1+r^*_t) where r^* is the real world interest rates and tb is trade balance as a proportion of output (Chalk and Hemming, 2000, p.22).

Clearly, a rise in trade balances, an appreciation of the domestic currency and a rise in the real growth rate all reduce net foreign liabilities as a share of output.

Equation (1) suggests that

$$f_t = \frac{tb_t}{r_t^* - q_t - n_t} = \overline{f} \qquad (2)$$

is a special case where foreign liabilities as a share of output, $\overline{f}$, would neither rise nor fall. This relationship helps define a useful measure of whether the current path of trade balance would secure a non-increasing path for foreign liabilities. Clearly, in the case of $f_t > \overline{f}$ net foreign liabilities as a share of output will increase over time, indicating unsustainability.

Figure 11 plots the evolution of both foreign liabilities as a share of GDP and the path of trade balance defined by (2) above for Turkey. A glance at Figure 11 clearly

indicates that external sustainability was an issue on a number of occasions during the 1990s.

(iii). *Fiscal solvency*

The stance of fiscal policies as a key determinant of the likelihood of currency crises has long been recognised in both academic and policy making circles. For example, lax fiscal policies were argued to be the source of expansionary domestic credit policy which is inconsistent with the fixity of the exchange rate by the FGMs (see, for example, Krugman, 1979; and Flood and Garber, 1984). The significance of fiscal solvency is also acknowledged by the optimising models of currency crises especially by the SGM (see, Obstfeld, 1994; and Flood and Marion, 1999 among others).

In order to assess the soundness of fiscal policies in Turkey in the run-up to the crises, we inspect a number of fiscal solvency measures. Table 6 tabulates total domestic borrowing as a percentage of GDP between 1985-2000, which shows that debt/GDP ratio increased from 19.7 per cent in 1985 to 28.7 in 2000. Although this ratio itself is not excessive,[13] when coupled with the high levels of external borrowing it poses serious problems for the Turkish economy. First of all, such high levels of indebtedness give rise to high levels of public sector borrowing requirement (PSBR), as is clear from Fig.12. This ratio has only started to come down with the stabilisation efforts and the resulting discipline imposed on the public finances. PSBR/GDP ratio was 11.8 per cent in 2000 down from 15 per cent in 1999. It should be noted that these PSBR measures exclude other public liabilities referred to as the 'unpaid duty losses of the state banks'. Such losses arose as a result of some quasi-fiscal activities run by the government. These activities mainly took the form of some state banks' providing subsidised credits to certain groups such as farmers and small businesses.[14] The estimates of the scale of these duty losses in 1999 as per cent of GDP vary from about eight per cent (Eichengreen, 2001) to eleven per cent (Ertugrul and Selcuk, 2001), which suggests that effective PSBR was much higher. Such high levels of required borrowing created considerable pressure on nominal interest rates, which

[13] As a comparative figure, the average government debt/GDP in the eurozone countries was just below 75 per cent in 1998 (De Grauwe, 2000, p.140).

[14] Most of these were predominantly run by Ziraat Bankasi and Halkbank. The recipients of these credits at favourable conditions were farmers in the case of the former and the small and medium sized enterprises in the latter (IMF Staff Country Report, No.00/14, p.12).

sailed above the rate of inflation by large margins for the best part of the last two decades. For example, real interest rates were as high as 15.7 per cent in 1998 and 25.2 per cent in 1999.[15]

In order to see whether this fiscal policy profile was sustainable, it is important to assess the ability of the country to carry out repayments on the existing debt levels. To quantify the domestic debt servicing ability one needs to examine the interest obligations as well as the maturity structure of the existing debt stock. This information is provided by Tables 7 and 8, respectively. Both sets of information reveal that the state of public finances in Turkey significantly worsened in the second half of 2000.

As was the case with external sustainability above, fiscal sustainability can be better evaluated by comparing the burden of indebtedness with the capacity of the economy to service and re-pay the existing debt. In the case of fiscal sustainability, this requires comparing the present value of the primary surplus with the debt/GDP ratio. This is indeed a widely used measure of fiscal sustainability proposed by Blanchard (1990) and Cuddington (1997) among others. A sustainable fiscal policy package is defined as the one that does not violate the government's intertemporal budget constraint. More specifically, for a fiscal policy package to be sustainable net present value (NPV) of the stream of future primary surpluses should be sufficient to stabilise the current debt/GDP ratio.

This so-called 'primary gap indicator', PGI, is given by debt/GDP ratio minus the PV of primary surpluses discounted at (r-n) as follows.

$$\text{PGI} = d_0 - \frac{ps}{(r-n)} \tag{3}$$

where d_0 is the initial debt/GDP ratio and all else are as defined earlier.

The definition of fiscal sustainability above suggests that a given fiscal stance would be deemed sustainable if PGI is non-positive. Figure 13 plots the NPV of primary surpluses and the debt/GDP ratios for Turkey during 1990-2001. Clearly, NPV of primary surpluses have always been lower than what is required to stabilise the existing debt ratios-except in 1995. This suggests that PGI was positive in every

[15] IMF Staff Country Report, No.00/14, p.14.

other period. In sum, Fig.13 reveals that fiscal sustainability was under serious threat in Turkey all through the 1990s.

An alternative sustainability indicator which is based on a recursive algorithm yet still easy to calculate has been proposed by Croce and Juan-Ramon (2003). In addition to real interest rates, growth rates, primary surplus and debt/GDP ratios, as utilised by the above given measure, this indicator makes use of the target ratios of both the primary surplus and the debt/GDP ratio and incorporates the policy maker's responses to the gaps between the actual and target values of these variables.

Croce and Juan-Ramon (2003) propose the following as an index of fiscal sustainability (IFS)

$$\mathrm{IFS}_t = \left[\frac{1+r_t}{1+n_t} - \frac{ps_t - ps^*}{d_{t-1} - d^*} \right] \tag{4}$$

where ps^* is the level of primary surplus/GDP ratio that is consistent with the target debt/GDP ratio and d^* is the target debt/GDP ratio respectively, and d_{t-1} is the debt/GDP ratio in the previous period.

The first component of this expression is a measure of the dispersion between the real interest rate and the growth rate. The higher the economic and political instability the higher is this dispersion, which unfavourably impacts sustainability. The second component is a measure of the difference between the deviation of the actual primary surplus from what is required to attain the target debt ratio and the deviation of the debt ratio from its target. Croce and Juan-Ramon (2003) suggest that values of IFS greater than one would signal fiscal sustainability problems.[16]

Figure 14 plots the values of this index for Turkey for 1990-2001. This figure reveals that fiscal stance was unsustainable throughout this period, as was depicted by the primary gap indicator above, apart from a short respite in 1995 thanks to the stabilisation program adopted in the aftermath of the 1994 crisis.[17]

[16] In calculations, the lowest value of the debt/GDP ratio over the analysis period, 1991-2001, is taken to denote d^*, the target debt/GDP ratio. ps^* is calculated through the use of $ps^* = (\beta^* - 1)\, d^*$, where $\beta = (1+r)/(1+n)$. The value of β^* is set to the mean value of the observed β over 1991-2001 (see, Croce and Juan-Ramon, 2003, p.9).

[17] Unsustainable fiscal balances combined with policy mistakes in the financing of deficits led to a currency crash in 1994 as a result of which the Turkish lira depreciated by 100 per cent in the first quarter of the year. The following stand-by agreement with the IMF helped restore some normality in the functioning of domestic debt market though at the expense of extraordinarily high interest rates on

The above discussion suggests that substantial fiscal imbalances emerged in Turkey during the 1990s. There were a number of political reasons for the inability of successive Turkish governments to initiate fiscal discipline in this period. One of the underlying sources of such fiscal imbalances can be found in the fragmented political system and the weak coalition governments that were unable to contain distributional pressures throughout the 1990s. The return of unrestricted party competition following periods of military rule during the 1980-1983 and restricted democracy during 1983-1987 marked a turning point in this regard (see, Onis, 2000). In an attempt to compensate the main losers of the liberalisation efforts of 1980s, namely the wage earners and the agricultural sector, successive governments provided agricultural subsidies via state owned banks and transfers to social security institutions. Pressures for redistributive politics intensified after the 1991 elections after which various coalition governments ruled the country up until November 2002. As had been traditionally the case in Turkey, coalition governments during this period enacted populist policies with clear re-distributive objectives to broaden electoral support. The centralised nature of political leadership that requires leaders to be highly responsive to the distributional demands of the party members and the imperfections of the budgetary process that allow governments to enact beneficial redistribution with minimum transparency provided the very basis of populist policies during this period (see, for example, Atiyas and Sayin, 1998).

Due to the significant size of the unregistered economy and the inefficiency of the tax system, such populist policies contributed to the ballooning of public sector deficits. Additional pressures on fiscal balances during this period were brought about by the cost of the campaign against the armed insurgency in the South Eastern provinces and by the cost of the ambitious South Eastern Anatolian Project. (see, Ekinci, 2000, p.5).[18] The combination of these forces imposed serious pressure on the fiscal discipline leading to sharp rises in the PSBR, as documented above. Given the gap between the PSBR and the size of the domestic capital markets the outcome was ever increasing real interest rates on domestic borrowing, which, in turn, became the source of further deterioration in public balances.

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domestic debt instruments. Such high interest rates combined with the failure to carry out the necessary public sector reform prepared the ground for fiscal fragility in the run up to the 2000-2001 crisis.

[18] South Eastern Anatolian project is a multi-sectoral regional development project covering the South Eastern Anatolian provinces with an estimated cost of 32 billion US dollars.

As mentioned above, one of the main ramifications of the lax fiscal stance is the money financing of the resulting deficits. It must be noted, however, that during the pre-crisis period tight money control as specified by the stabilisation program was strictly adhered to (see, also Ozatay and Sak, 2002). Thus, in the case of Turkey the role of an increasingly unhealthy fiscal stance on the impending crisis does not seem to have worked through expanding domestic credit. However, unfavourable public finances created distortions in the already fragile financial system and thereby contributed to the overall weakness of the economy, as will be explained in the next section.

b. A Financial Fragility Based Explanation

Due to the underdeveloped nature of the bond and equity markets, capital inflows are mostly intermediated through the banking system in Turkey, as is common in other emerging market countries. The role of banking sector problems on emerging market crises has been widely discussed especially in the aftermath of widespread liberalisations of the financial markets that have taken place throughout the 1990s. There is, by now, considerable evidence from Asian crises that validate these observations (see, for example, Kaminsky and Reinhart, 1999; and Radelet and Sachs, 1998).

In the case of Turkey, weaknesses in the banking sector were deep-rooted and long-standing. It is widely acknowledged that the poorly functioning and the under-regulated banking system in Turkey substantially contributed to macroeconomic instability.[19] The fiscal profligacy resulting from such macroeconomic instability, in turn, provided the very basis of the lack of proper regulation in the banking sector. The outcome was a vicious circle of weak macroeconomic performance and a fragile financial system that characterised much of the 1990s in Turkey.

Although Turkish banks were among the most profitable in the world,[20] the sector has been marked by low efficiency and weak competition (OECD, 2002). In addition, the prominence of public banks in the sector and the soft budget constraints that they face contributed substantially to the distortions in the financial sector. It is commonly agreed that a well-functioning banking system requires an effective regulatory

[19] Weaknesses in the banking sector were also highlighted by Ozatay and Sak (2002) as a major triggering mechanism for the financial crisis in Turkey.

[20] See, OECD(2002), p.67.

framework even in the absence of such distortions. The existence of systemic risk and the presence of asymmetric information between the lenders and the borrowers constitute the basis of the need for regulation. In Turkey, the proper legal and institutional framework that necessarily underpins such regulation has been either weak or non-existent until very recently.

One important failing of the system was related to the weaknesses in the supervisory and regulatory framework. The Treasury, the Central Bank and the Capital Markets Board were all involved with regulating and supervising agents in the financial sector. In doing so, these institutions acted with potentially conflicting interests. For example, the Treasury was empowered to inspect the banks' legal compliance and financial standing. However, also given its need to finance ever rising PSBR it is obvious that, the Treasury would have less incentive to be pro-active in regulating banks that held a substantial amount of government securities.

An additional distortion was created by the use of the state banks as agents of distributive policies through preferential credits to certain favoured groups. This has led the involved banks' accumulating huge losses -as discussed above. The Treasury paid the state banks for these losses in the form of government securities. This, then, had serious implications for the liquidity of these banks, which were then subjected to softer regulatory controls exacerbating the existing distortions. The role of private banks as holders of substantial amount of government securities and the state banks' acting as fiscal agents provided the basis of regulatory forbearance the existence of which created moral hazard. Another source of inaction on the part of the authorities was that the political authority - the Council of Ministers- was entrusted with entry and exit decisions of banks.[21] This had two undesirable consequences. First, bank licences were issued on political criteria. Second, the political authority acting under pressure from bank lobbies refrained from taking adequate regulatory action. Given that the political scene was one of weak and unstable coalition governments during the 1990s, the political authority had neither the incentives nor the power to initiate prompt corrective action. Serious moral hazard incentives were already in place due to the full deposit insurance introduced in the wake of 1994 crisis. As a result,

[21] The exact form of the bank liquidation was the following. When a bank's performance was deemed to be less than satisfactory, this case would have been reported to the State Minister responsible from Economic Affairs (by the Treasury and the Central Bank). It would then be the minister's call to initiate the regulatory process that would allow the Treasury to be actively involved in the management of the bank in question (Alper and Onis, 2002, p.14)).

depositors lacked incentives to monitor banks' actions, which led to excessive risk taking on the part of the banks and thus ever increasing deposit rates. The lack of an effective bankruptcy law and legal system also significantly contributed to the overall weaknesses of the banking sector. For example, the liquidation of the banks that were taken over in the aftermath of the 1994 crisis took no less than eight years (OECD, 2002, p.80).

The implications of the weaknesses in the supervision and regulation were especially serious due to the banks' weak asset quality, credit concentration arising from connected lending,[22] inadequate capital base and the shortcomings in internal control and risk management.

Deficiencies in the status quo as regards to the legal infrastructure of the banking sector in Turkey were increasingly apparent towards the end of the 1990s. There was a clear consensus on the part of both the domestic policy makers and the external institutions for the need for an autonomous and competent regulatory/supervisory body. Indeed, the Letter of Intent submitted by the Turkish government to the IMF on 9th December, 1999 clearly spelt out the measures intended to be undertaken to strengthen the banking system and banking regulation. The formation of the Banking Regulation and Supervision Agency (BRSA) in June 1999 was conceived to be the most significant step towards that goal. The BRSA which was formed to be independent from the political authority became the single agency that is empowered with the authority to supervise and regulate the banking sector. However, this turned out to be too late to forestall the liquidity crisis experienced in November 2000.

Given the fragilities arising from the deficiencies of the regulatory framework, the adoption of the currency peg introduced some built-in mechanisms that increased the riskiness of the banking sector. The introduction of a fixed-devaluation rate of 15 per cent a year led the banks to borrow in dollars to buy lira-denominated government bonds. These mostly unhedged open positions mounted significantly, carrying a huge exchange rate risk. The inevitable result was huge losses in banks' balance sheets, as had been painfully experienced by Asian countries during their crises. In Turkey, the net open positions of banks almost doubled in the first three quarters of 2000.[23]

[22] Connected lending refers to the credits that the bank in question extends to business groups that are the controlling shareholders of the bank. OECD (2002) suggests that such lending to related parties accounted most of the non-performing loans in the aftermath of the crisis.
[23] OECD (2001), p.13.

Such increases in foreign borrowing which was mostly short-term- as documented above- also introduced significant maturity mismatches between the assets and the liabilities of the banking sector. In addition, banks increasingly turned to consumer lending as the profitability of holding government securities greatly decreased as a result of lower interest rates offered by them in 2000. This is clearly visible from Fig.15, which plots bank lending to the private sector in Turkey during the 1990s. This lending boom worsened the maturity mismatch that was already growing. It is argued that banks had not developed the expertise to deal with the resulting interest rate and exchange rate risks (see, for example, OECD (2001)).[24] Such maturity mismatches have not prevented the already risky banks from offering even higher deposit rates to remain in business. The overall result was ever decreasing profitability over 1999-2000. This can be seen from Table 9 that presents data on loans quality and the profitability of the Turkish banking system. It is evident that both the shares of non-performing loans in total loans and the profitability deteriorated during 2000.

The above discussion of the increase in the banks' foreign borrowing suggests that there were substantial capital inflows into Turkey in the wake of the adoption of the stabilisation program especially following its initial success. Other emerging markets' experiences make it all too clear, however, that the composition of such inflows is of crucial importance in determining their likely impact on the relevant economies. More specifically, the relative share of portfolio investment in the total inflows vis-à-vis the share of foreign direct investment greatly matters.[25] This is because the former is highly volatile and may be easily reversible, as compared with the latter. The evolution of net portfolio investment and the FDI flows are plotted in Fig.16, which highlights two important issues. First, the absolute size of the FDI flows has been negligible over the whole period. Second, portfolio investments, which made up most of the capital inflows were highly volatile. This is, in fact, one serious implication of the short-term capital flows that helped banks to build up such high levels of open positions. As was the case with the Mexican crisis of 1994, once the doubts emerge on the sustainability of the existing exchange rate regime capital inflows very easily

[24] In general, such exposure to exchange rate risk creates reluctance on the part of policy makers to adjust the exchange rate since that would then destabilize the banking system as a whole. This is a clear example for the state-dependency of preferability of a fixed exchange rate regime over its alternatives.
[25] Kamin et al. (2001), for example, identify the FDI/GDP ratio as one of the factors that reduce the probability of currency crises in a study using data from 26 emerging market countries for 1981-1999.

turn into capital outflows. Likewise, the record levels of capital inflows into Turkey in the first three quarters of 2000 turned into outflows in the fourth quarter, as can be seen from Fig.16.

Another indicator of the overall financial fragility is the ratio of short-term debt to foreign exchange reserves of the central bank (Rodrik and Velasco, 2000). This ratio shows the ability of a country to withstand pressure in the not unlikely event of markets testing the resolve of the authorities by not rolling-over the existing debt. According to this measure, fragility of the financial system rose sharply during 2000 from around 100 per cent short-term debt to reserves ratio at the end of 1999 to 144 at the end of 2000.[26]

A related measure of financial fragility is the ratio of liquid monetary assets to foreign exchange reserves (Calvo, 1996). This ratio is a measure of the ability of governments to cope with foreign exchange market pressure where -in a state of panic- all liquid assets can be converted into foreign exchange. Corsetti et al. (1998a) report that this ratio was over nine in Mexico before the 1994 crisis, and varied in the range of just under five (in Philippines) to over ten (in Korea) in the Asian countries in 1997. Although in comparison to these figures, M2/foreign exchange reserves ratio in Turkey was mostly contained, it increased to over four in the first quarter of 2001 (Yeldan, 2001).

Most of the above analysis is concerned with the banking system. The health of the corporate sector is also of great importance to the well-functioning of the financial markets as well as to the strength of the real economy. For example, the weak financial structures of the corporate sector in a number the Asian countries were among the major sources of their vulnerabilities during their crises.[27] How well was the corporate sector in Turkey performing during this period? In order to provide some answers to this question, we present two sets of information on their financial structure and performance based on debt/equity ratio and return on assets, provided by Table 10. These ratios are calculated using data for a sample of 75 large Turkish companies that are covered by Datastream's Worldscope Emerging Markets database. Table 10 suggests that indebtedness of the corporate sector increased sharply which accompanied a substantial fall in profitability since 1999.

[26] See, the external debt profile statistics, by the Undersecretariat of Treasury at www.treasury.gov.tr.

[27] See, for example, Mitton (2002).

Although the weaknesses in the corporate sector were not among the major determinants of the crisis, it is clear that once difficulties arose a highly indebted corporate sector could have made the economy much more vulnerable by aggravating financial fragility. This is because deterioration in balance sheets of firms, exacerbates the asymmetric information and moral hazard problems between the lenders and borrowers, thereby, promoting financial instability (see, for example, Mishkin, 2001).

4 CONCLUSIONS

This paper has attempted to explore the roots of the financial and currency crises experienced by Turkey barely a year after the adoption of an IMF-supported stabilisation program in December 1999. Similar to that observed in other emerging markets, the currency collapse plunged the economy into a long-lasting crisis -the worst Turkey has experienced in its post-war history.

To identify causes of these crises, we have studied an extensive set of leading indicators drawn from the existing currency crises literature. Motivated by the implications of these existing models, we evaluated the developments in the real economy, public finances and the external and financial sectors.

Our results point to three sets of vulnerabilities in the Turkish economy that prepared the ground for the collapse of the Turkish lira and the resulting financial crisis. The first source of vulnerabilities identified was the weak external position caused by excessive levels of debt repayments. We show that the external debt burden prior to the crisis was much higher than that experienced by the Asian countries that were deemed to have borrowed excessively during the 1990s. In addition, there was some considerable loss of competitiveness due to high inflation, which had still been above the fixed devaluation rate. This has reduced the capacity to service the existing debt, a clear early warning signal for impending currency crises. The second has been the weak fiscal position resulting from the record levels of interest payments on domestic borrowing. When combined with the unfavourable maturity structure of the existing debt, this resulted in debt servicing placing a considerable burden on the public finances during this period. This, in turn, had undesirable consequences for the functioning of the already fragile banking system. Thirdly, our analysis suggests that the weaknesses in the financial and banking sector have played a major role in preparing the ground for the liquidity squeeze in November 2000 and in aggravating

the situation in the wake of the devaluation in February 2001. The very fact that the devaluation rate was limited to 15 per cent per year under the stabilisation program encouraged banks to borrow heavily from abroad. Such borrowing was mostly short term, which created a serious maturity mismatch between the assets and the liabilities of the banking sector. In addition, the composition of capital inflows was unfavourable. Short term portfolio investments made up most of the inflows, which were easily reversible. This further exposed the fragility of the financial sector to potential market pressure. In addition to the financial and macroeconomic determinants outlined above, the slow pace of reforms specified under the stabilisation program coupled with political uncertainty have also contributed to the ongoing difficulties.

Given the above observations, it is possible to argue that the twin crises experienced by Turkey in November 2000 and February 2001 had features relevant to all three generations of currency crises models, though financial fragility seems to have played a major role, especially in turning the currency crisis into a major financial crisis. In designing policy measures to prevent future crises, one would, therefore, argue first and foremost for measures towards a much healthier financial and banking system as well as sound fiscal balances. Unsurprisingly, attempts to reform the banking system were at the centre of the recovery package that was put into place in the aftermath of the crisis.

Our analysis of the experience of Turkey yields one important lesson for other, especially emerging market countries; a sound financial system is a pre-condition for smooth functioning of fixed exchange rate regimes. As discussed above, currency pegs induce domestic financial institutions to extend borrowing from abroad, which carries great risks in the absence of proper mechanisms to ensure a healthy financial system - mechanisms such as effective supervision and monitoring of these institutions. By the same token, for countries whose financial systems are fragile, pegging the exchange rate is a considerably risky strategy where the collapse of the exchange rate can easily turn into a full-scale financial crisis. In fact, the absence of similar financial sector problems in the industrialised countries has been the main reason why their recoveries from currency collapses have been much less painful. In other words, the absence of a well-functioning financial system greatly restricts the range of exchange rate regimes that can be confidently adopted.

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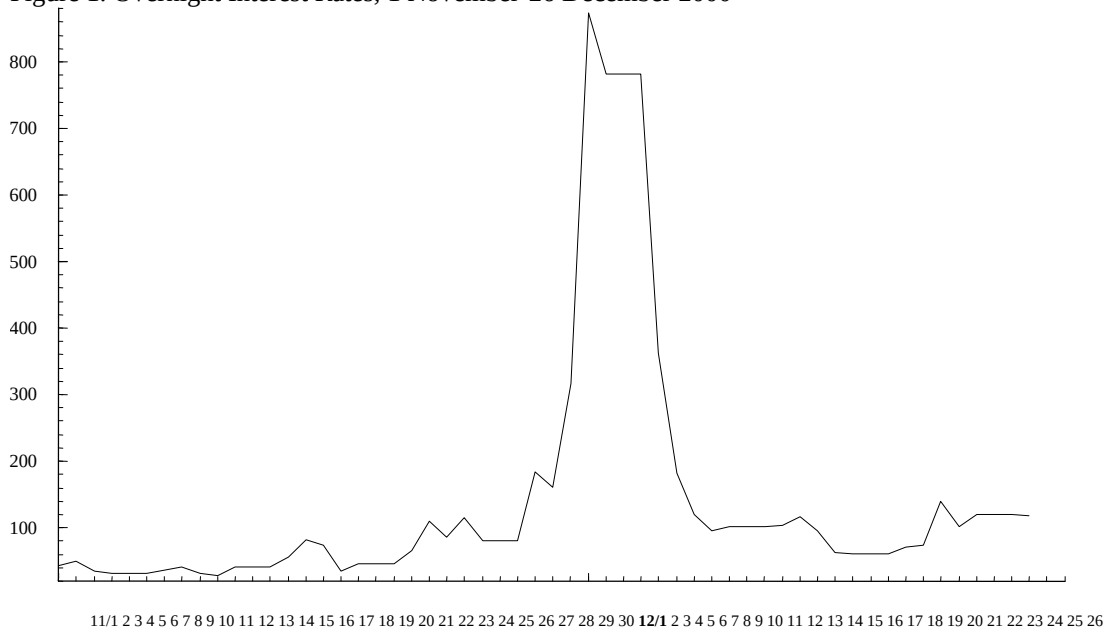
Figure 1. Overnight Interest Rates, 1 November-26 December 2000



Source: The Central Bank of the Republic of Turkey.

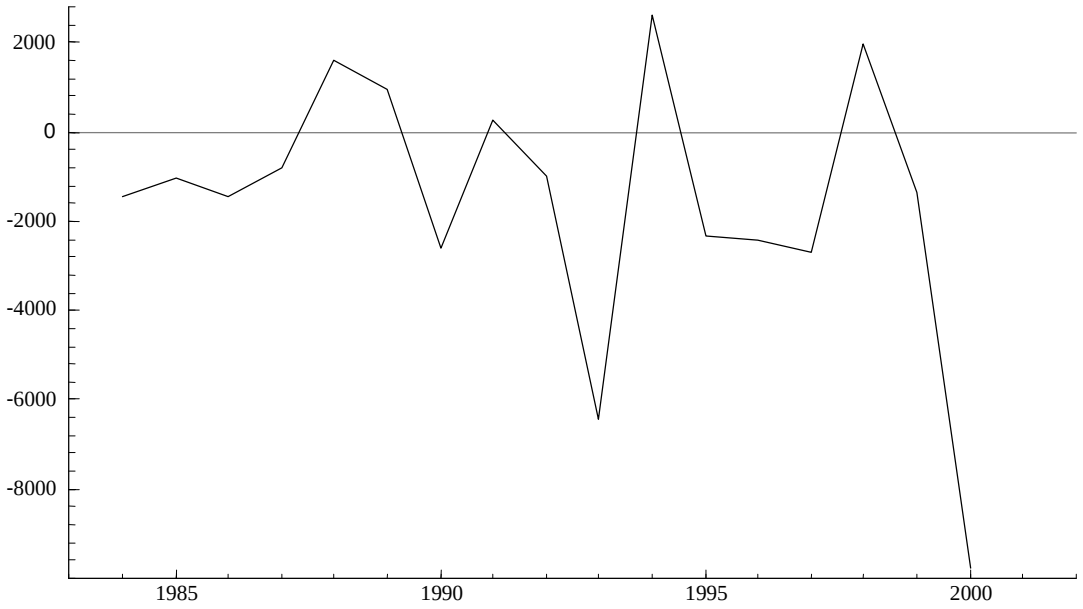
Figure 2. Openness

Source: OECD.
Note: Openness is defined as (exports+imports)/GDP.

Figure 3. Trade Balance, 1984-2000, (US Dollars, in millions)

Source: International Finance Corporation (IFC), Emerging Markets Database.

Figure 4. Current Account Balance, 1984-2000, (US Dollars, in millions)



Source: IFC.

Figure 5. Inflation (CPI), 1970-2000

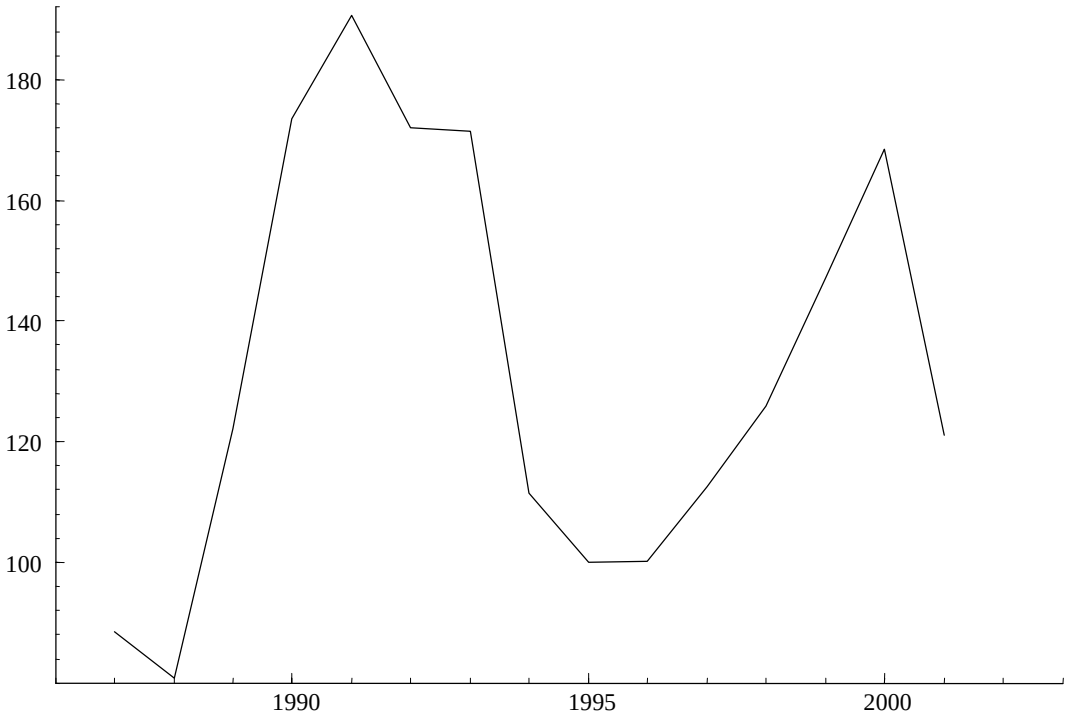
Source: IFC.

Figure 6. Real Effective Exchange Rates (CPI based), 1995Q1-2001Q4

Source: The Central Bank of the Republic of Turkey.

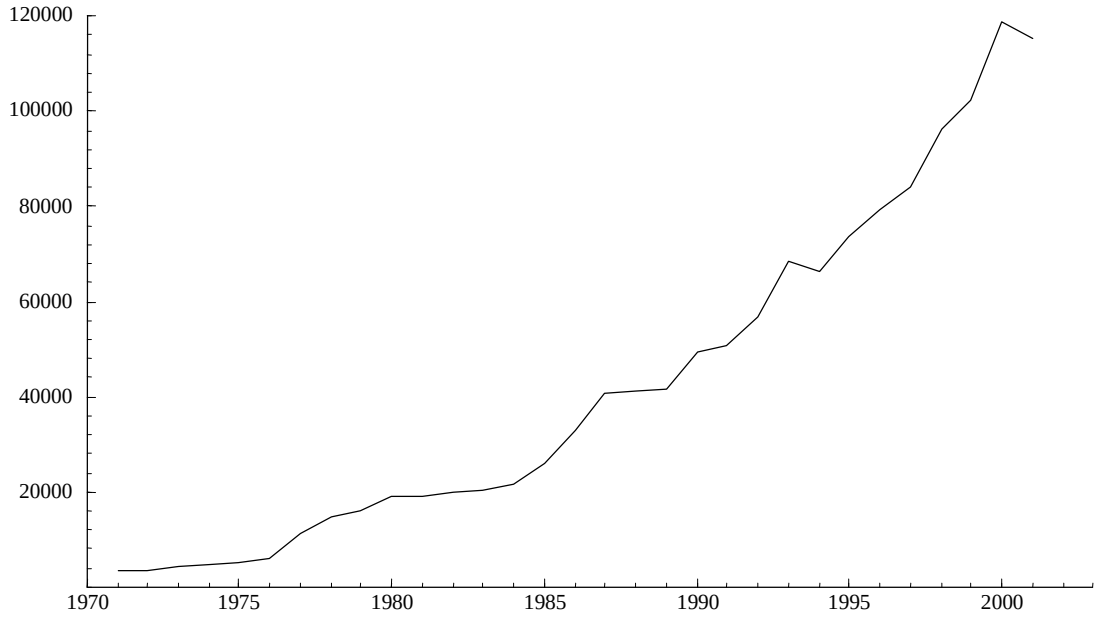
Note: A rise in the index denotes appreciation of the Turkish Lira.

Figure 7. Real Exchange Rates (Unit Labour Cost Based), 1987-2001



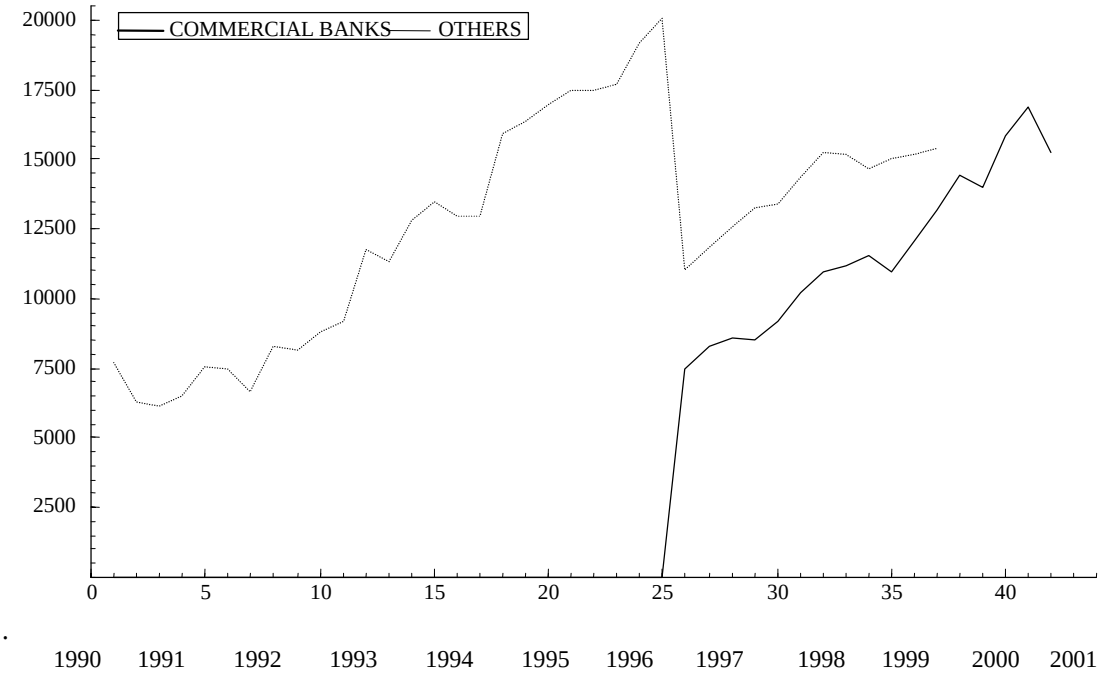
Source: OECD
Note: A rise in the index denotes appreciation of the Turkish Lira.

Figure 8. Total External Debt, 1971-2001, (US Dollars, in millions)



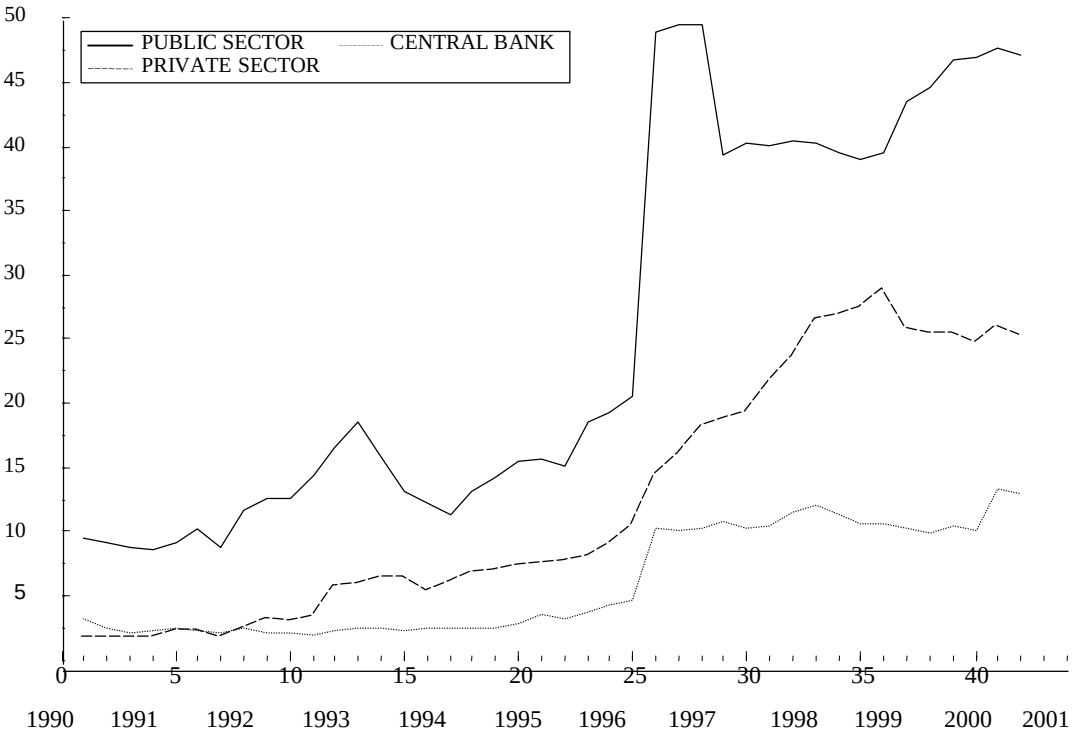
Source: World Bank (1971-95); The Undersecretariat of Treasury (1996-2001).

Figure 9. The Composition of Short-term External Debt, 1990-2001, (US Dollars, in millions)



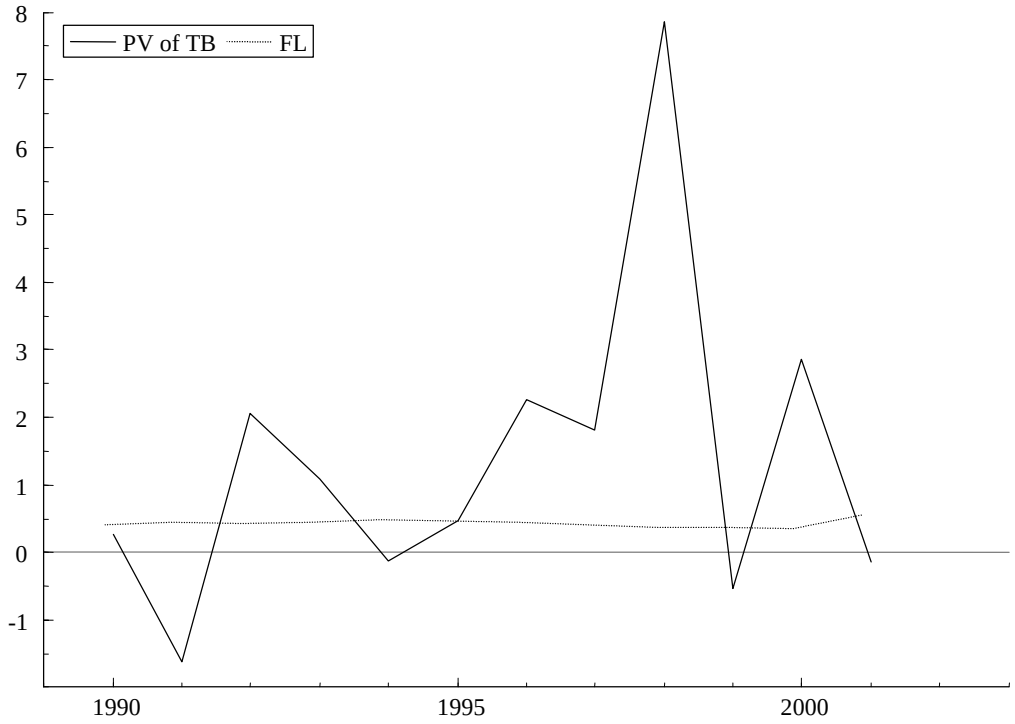
Source: Datastream.

Figure 10. The Composition of Medium and Long-term External Debt, 1990-2001, (US Dollars, in billions)



Source: Datastream.

Figure 11. External Sustainability- Foreign Liabilities and the PV of Trade Balances, 1990-2001



Source: OECD, The Undersecretariat of Treasury, Yildirim (2002).

Figure 12. PSBR/GNP, 1990-2001

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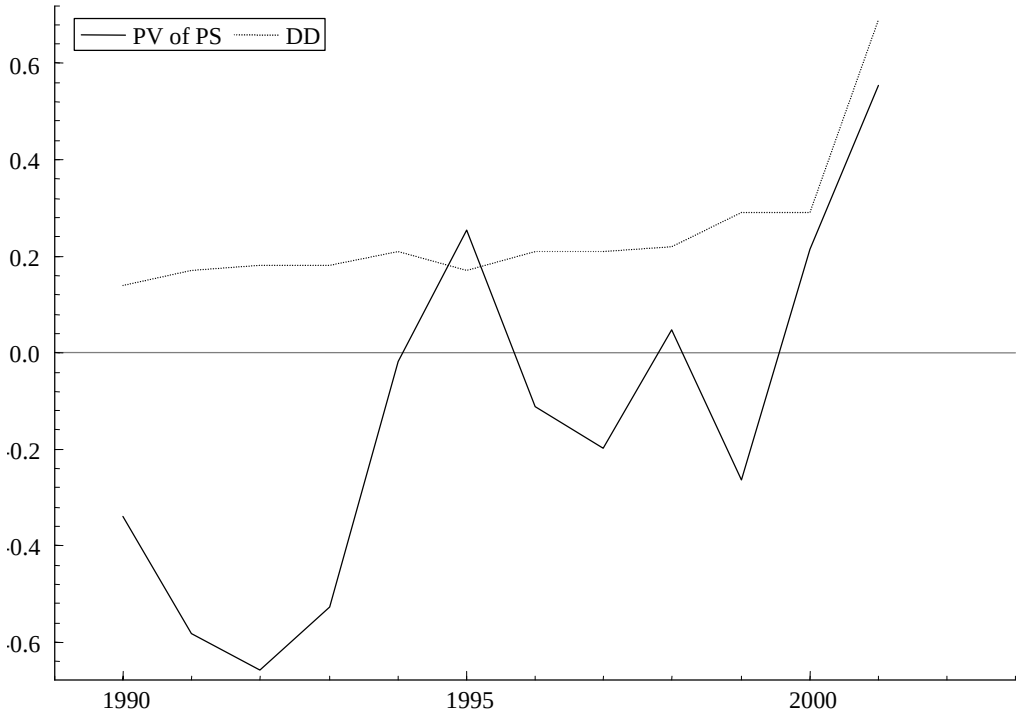
Source: The Central Bank of the Republic of Turkey.

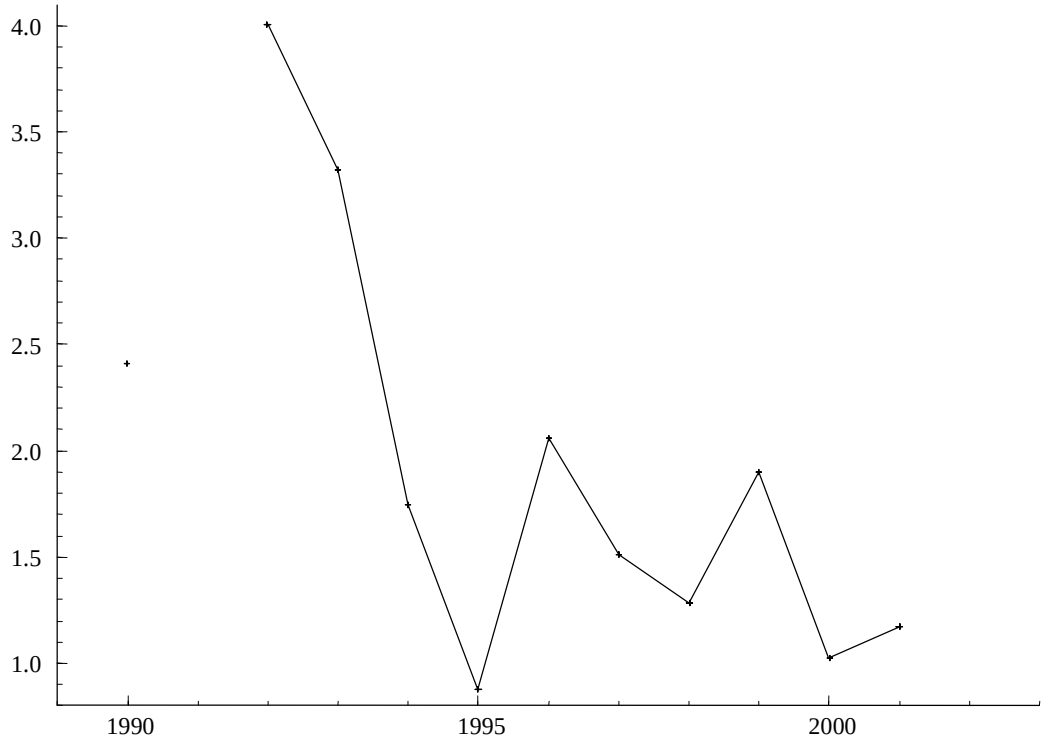
Figure 13. Fiscal Sustainability- Domestic Debt and the PV of Primary Surpluses, 1990-2001



Source: The Undersecretariat of Treasury

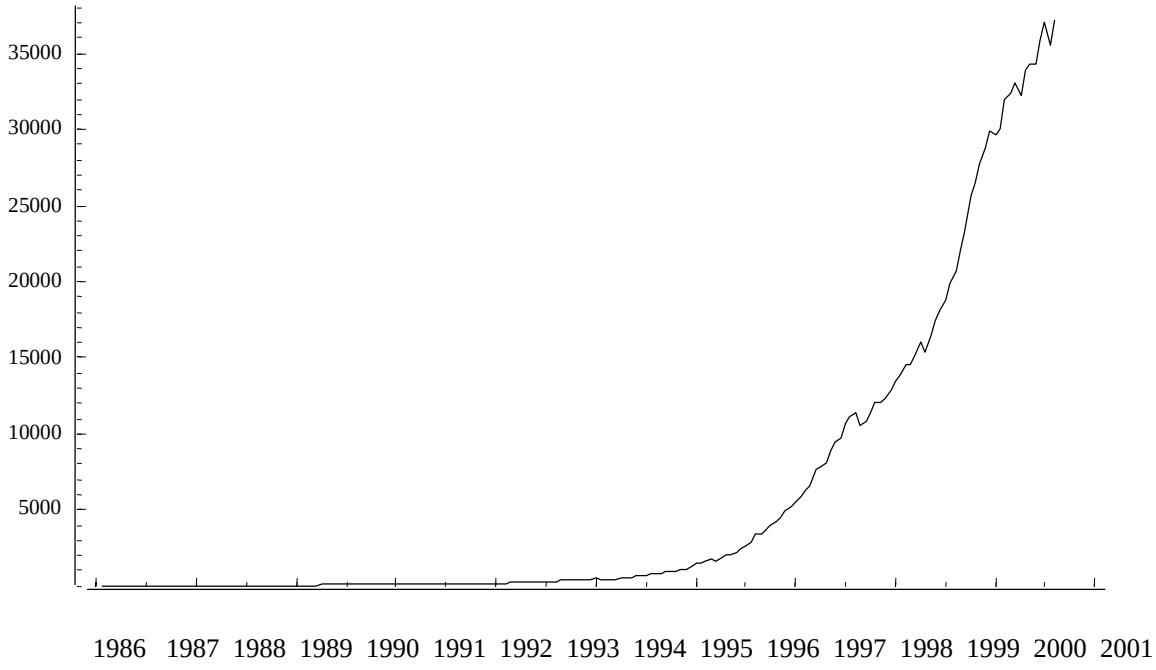
Note: Ten-year averages are used for (*r*-*n*) in discounting the primary balances.

Figure 14. IFS (Index of Fiscal Sustainability), 1990-2001



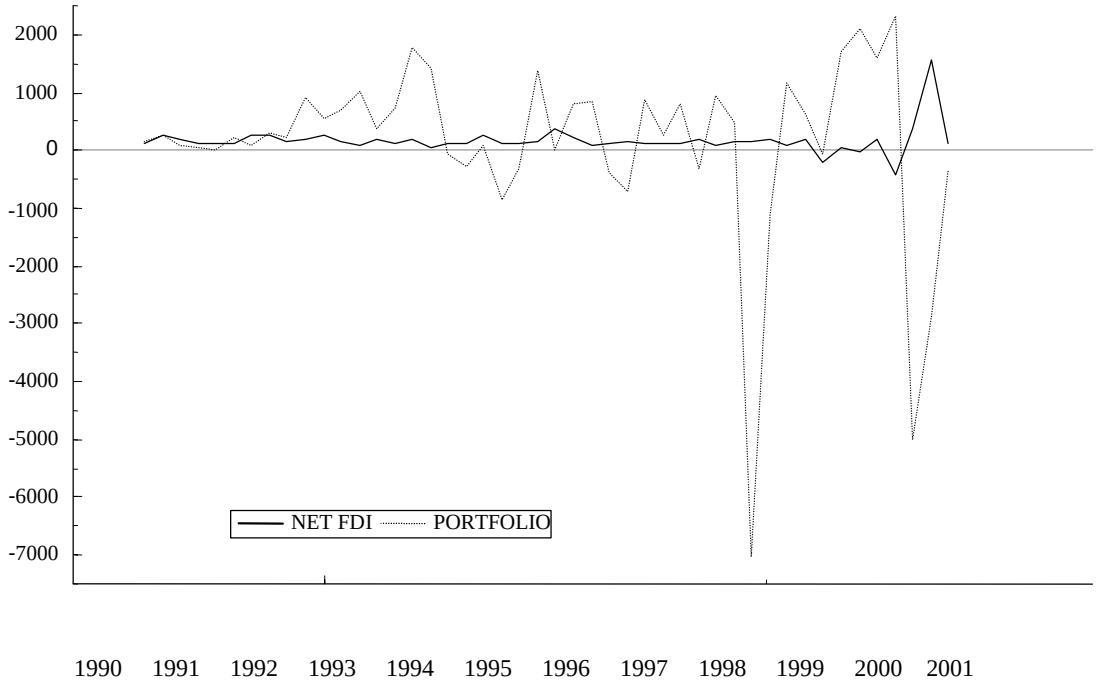
Source: The Undersecretariat of Treasury

Figure 15. Bank Lending to Private Sector, January 1986-December 2001 (TL, in trillions)



Source: The Central Bank of the Republic of Turkey.

Figure 16: Net Portfolio Investment and FDI, 1990- 2001, (US Dollars, in millions)



Source: Datastream.

Table 1- *GDP Growth*

Quarter	Growth Rate
1996 Q1	8.7
1996 Q2	8.1
1996 Q3	5.3
1996 Q4	7.0
1997 Q1	6.9
1997 Q2	8.5
1997 Q3	7.0
1997 Q4	7.8
1998 Q1	9.2
1998 Q2	3.3
1998 Q3	2.7
1998 Q4	-1.2
1999 Q1	-8.2
1999 Q2	-2.2
1999 Q3	-6.3
1999 Q4	-2.1
2000 Q1	5.6
2000 Q2	6.9
2000 Q3	7.8
2000 Q4	8.6
2001 Q1	-2.1
2001 Q2	-8.9
2001 Q3	-7.1

Source: The Undersecretariat of Treasury at www.treasury.gov.tr.

Table 2- *Trade and Current Account Balances*, 1996-2000 (in million US Dollars)

Year/ Quarter	Trade balance	Current account balance
1996	-10,582	-2,437
1997	-15,358	-2,638
1998	-14,220	1,984
1999	-10,443	-1,360
2000 Q1	-3,794	-2,282
2000 Q2	-5,938	-3,265
2000 Q3	-6,253	-1,194
2000 Q4	-6,311	-3,024
2000	-22,341	-9,765

Source: Central Bank of the Republic of Turkey at www.cbrt.gov.tr.

Table 3. *Annual Percentage Change in Total Outstanding Debt*

Year	Change in short-term debt	Change in long-term debt
1997	4.05	7.28
1998	17.56	13.27
1999	10.63	5.65
2000	23.18	11.21
2001Q1	-7.87	-1.13
2001Q2	2.01	0.25

Source: The Undersecretariat of Treasury at www.treasury.gov.tr.

Table 4. *Some Fragility Measures of the External Sector*

Years	Debt Service/GDP	*Debt Service/Exports*	*Interest on External Debt/Exports*
1996	6.22	49.16	18.08
1997	6.46	47.29	17.47
1998	7.99	61.22	17.88
1999	9.89	68.89	20.50
2000	10.90	78.98	22.68

Source: The Undersecretariat of Treasury at www.treasury.gov.tr.

Table 5. *Debt Service as a Ratio of Exports, Experience of East Asian Countries,1996*

Country	*Debt Service/Exports*
Korea	8.80
Indonesia	36.80
Malaysia	8.20
Philippines	13.70
Thailand	11.50

Source: Corsetti *et al* (1998a).

Table 6. *Domestic Debt as Percentage of GDP*

Years	Domestic Debt/GDP
1985	19.7
1986	20.5
1987	23.0
1988	22.0
1989	18.2
1990	14.4
1991	17.3
1992	17.6
1993	17.9
1994	20.6
1995	17.3
1996	21.0
1997	21.4
1998	21.9
1999	29.3
2000	29.0

Source: The Undersecretariat of Treasury at www.treasury.gov.tr.

Table 7. Interest Payments on Domestic Borrowing /GDP

Years	*Interest Payments/GDP*
1990	2.52
1991	2.67
1992	3.09
1993	4.28
1994	5.94
1995	6.02
1996	8.84
1997	6.72
1998	10.51
1999	12.64
2000	14.77

Source: The Undersecretariat of Treasury at www.treasury.gov.tr.

Table 8. *Maturity Structure of Domestic Borrowing*

Months	*Maturity (months)*	*Months*	*Maturity (months)*
1999-01	13.2	1999-12	15.8
1999-02	11.3	2000-01	14.8
1999-03	13	2000-02	13.1
1999-04	11.7	2000-03	16.8
1999-05	12.4	2000-04	13.1
1999-06	11.4	2000-05	16.2
1999-07	15.6	2000-06	16.3
1999-08	22.1	2000-07	12.9
1999-09	20.2	2000-08	12.1
1999-10	21.2	2000-09	15.2
1999-11	14.6	2000-10	12.6

Source: The Undersecretariat of Treasury at www.treasury.gov.tr.

Table 9. *Loans Quality and Profitability of Turkish Banking System*

Quarter	*Non-performing Loans/Loans*	*Net Income (Loss)/ Total Assets*
1999-01	9.4	0.8
1999-02	9.8	1.4
1999-03	8.7	2.1
1999-04	10.7	-0.5
2000-01	9.8	0.3
2000-02	9.7	0.0
2000-03	9.3	0.1
2000-04	11.6	-3.2

Source: Banks Association of Turkey at www.tbb.org.tr.

Table 10. Some Financial Ratios of the Corporate Sector

Years	*Debt/Equity Ratio*	*Return on Assets*
1997	0.79	0.63
1998	0.73	0.64
1999	0.84	0.48
2000	0.93	0.40
2001	1.03	0.21

Note: These ratios are calculated using data on 75 firms that are covered *by Datastream Worldscope Emerging Markets* database. Debt equity ratio is calculated as (total debt/shareholders equity)*100. Return on assets is defined as the ratio of (net profit /total capital employed)*100.