

## **The 1994 Currency Crisis in Turkey**

*Oya Celasun*  
*Macroeconomics and Growth Group*  
*Development Research Department , The World Bank*

Views expressed here are those of the author and does not necessarily represent official opinions of the World Bank. I would like to thank, without implication, Merih Celasun, Cevdet Denizer and Carmen Reinhart for very helpful suggestions.

## I. INTRODUCTION

The objective of this paper is to present an analysis of the stylized facts associated with the currency crisis in 1994, and briefly interpret the experience in light of the recent crisis literature. Although interest in currency and banking crises have intensified in the aftermath of the ERM, Mexican and more recently Thai crises, the dynamics of the Turkish crisis, -which is different than the aforementioned crises owing to the fact that the exchange rate was governed by a managed float, rather than being fixed - has not been discussed widely in the literature.

In the aftermath of the crisis in 1994, the Turkish economy contracted by 6%, the highest level of annual output loss in the history of the Turkish Republic. In the first quarter of 1994, the Turkish Lira (TL) was devalued more than 50% against the US\$, the Central Bank lost half of its reserves, interest rates skyrocketed, and the inflation rate reached three digit levels. A stabilization program, later supported by an IMF Stand-By was launched on April 5th, 1994, but no success has yet been achieved in implementing any of the structural adjustment measures.

Turkey experienced large and growing fiscal and external imbalances following the capital account liberalization in 1989, until the first quarter of 1994, and during that period the real exchange rate appreciation was no less than 20 %. Against this background of rising and very high PSBR, (about 10 and 12% in 1992 and 1993 respectively) there were remarkable policy mistakes committed on the monetary front. Towards lowering the very high levels of domestic public debt stock through cutting interest rates on Treasury bills, there was a shift towards deficit financing through monetization beginning in the last months of 1993. Several auctions of short term maturity Treasury bills were canceled one after another and the Treasury started to rely on

cash advances from the Central Bank instead. Still, the announced government budget for 1994 did not contain any measures towards tightening. While these caused increasing levels of anxiety in the financial sector, Turkey's credit rating was downgraded by some major international agencies. The commercial banks that had engaged in heavy offshore borrowing in 1992-93 and held mainly TL denominated assets, hastened the process of acquiring foreign currency to close their open foreign currency positions and there was some capital flight. The Central Bank, aiming to defend the currency and to contain the loss of foreign currency reserves, started to heavily intervene in the interbank market and raised the overnight rate to record levels. Yet, the Central Bank still went on losing reserves - selling foreign currency to the commercial banks, and the commercial banks which were able to buy foreign currency from the Central Bank at relatively inexpensive rates started to lose their own reserves as residents started to withdraw their foreign exchange deposits. The liquidity build-up through excessive creation of domestic credit to the public sector in the form of cash advances to the Treasury by the Central Bank, and the decline in total foreign exchange reserves in the first quarter of 1994 finally had its impact on the parity: from about 15,000 TL/\$ in January 1994, the parity more than doubled to 35,000 TL/\$ by the first days of April 1994.

After the crisis, some academic and policy circles in Turkey strongly defended the idea that the crisis was the natural outcome of the interventions in the domestic borrowing market: had there not been any attempted intervention on the rates at which the Treasury was borrowing (by canceling auctions, fixing the upper limit or by offering small amounts), the crisis could have been

avoided<sup>1</sup>. This view implied the determinants of the crisis to be within the domestic capital markets, and thus neglected the importance of the fundamentals. Others suggested that such a sharp real exchange rate correction was inevitable, given the external imbalances. Another line of argument was that the highly deteriorated fundamentals, namely soaring public deficits provided a backdrop where avoiding such an event was almost unavoidable. The extent to which underlying disequilibria in macroeconomic variables and/or policy errors contributed to the crisis is an issue considered in the analysis of stylized facts.

Section II describes the evolution of the external balances following the trade liberalization of the early 80s, and discusses the broad economic conditions during 1990-93. Section III describes the fiscal imbalances and the public sector financing mix during the same time. Section IV describes the events in the financial markets that led to the eventual crash in the first quarter of 1994. Section V summarizes the effects of this substantial devaluation and fiscal tightening on the output of the economy, that is, how the demand and supply side factors interacted and led to the contraction after the first quarter of 1994. Section VI briefly discusses whether the elements of the Turkish Crisis are explained in the recent crisis literature, and section VII concludes.

---

<sup>1</sup> Ozatay (1996) presents a detailed account of the developments in the Treasury borrowing market in late 1993-1994.

## **II. GROWING EXTERNAL IMBALANCES AND THE BROAD ECONOMIC CONDITIONS IN 1990-93**

The 1978-80 debt crisis marked the end of the inward orientation of the Turkish economy and hence the import substitution motive in the trade regime. The 1980-83 period under military rule was characterized by economic stabilization and trade liberalization at the same time. Real exchange rate depreciation and export promoting strategies led to strong export growth. Restrictive wage policies enhanced saving mainly in the public sector, curbed domestic absorption and hence promoted export expansion. The real depreciation of the TL and the repression of real wages continued during the 1984-87 period of civilian administration and supported the trade reforms of the period. Imports were liberalized gradually after 1983, and in 1989 tariffs were lowered to a large extent as part of a program aiming to fight inflation and in 1990 nearly all quantity and price restrictions were removed.

From 1984 on, Turkish citizens were allowed to hold deposits denominated in foreign currency. Starting in 1988 and by the end of 1989, the process of capital account liberalization was completed; capital flows were fully liberalized in the external accounts. This reversed the major exchange rate trends that prevailed till then, the cumulative appreciation of the real exchange rate amounted to no less than 20% during 1989-90. The liberalization of capital flows increased the interest rates as well, as in many financial liberalization episodes<sup>2</sup>. The 1989 tariff

---

<sup>2</sup> See Saracoglu (1996) and World Bank (1997).

reductions combined with currency appreciation led to an import boom<sup>3</sup> and deteriorated the trade balance in 1990: the deficit doubled in 1990. Table 1 documents the balance of payments and some other key economic indicators of Turkey, after 1990, when trade and financial liberalization were complete. Figure 1 shows the evolution of the real exchange rate (TL/\$) after 1986 together with a fitted simple linear time trend. There has been a sustained tendency for the real exchange rate to decrease over time (i.e. to appreciate), and the real exchange rate was over appreciated, that is, “stayed below its trend”, after capital flows were liberalized, from the second half of 1988 to January 1994, when a sharp correction in the nominal rate came to make up for the inflation differential. Figure 2 shows a TL/\$-DM real exchange rate index together with a real labor cost index. The sharp increase in the real labor cost that coincided with the real exchange rate appreciation shows how the economy became less competitive after 1988. Domestic inputs (labor) became more costly, and the real cost of tradables declined. The export-led growth of early to mid 80s was replaced with domestic demand led growth and external imbalances widened, the trade deficit went up from 3% of GNP in 1992 to 8.5% in 1993.

---

<sup>3</sup>Real wage repression, a politically unsustainable aspect of macroeconomic adjustment during 1981-87 could not be sustained after the 1987 elections. The real wage recovery was rapid; the 1988-89 period saw a sharp increase in wages: 129% in private and 188% in the public sector. (A further strain on the public sector which was burdened by the debt repayments after 1985) Celasun (1995) decomposes the sources of import growth between 85-90 using the input-output framework, and finds that 60% of his growth was attributable to domestic final demand expansion. This trend must have continued well till the import explosion of 1993.

With regards to the saving - investment gaps implied by the current account deficits of 1990-93; private savings in Turkey during that period have been almost constant, if not slightly increasing, but the absence of inflation accounting implies that private disposable income is not corrected for inflation tax, whereas consumption is deflated fully, which produces an upward bias in the measurement of private savings. The public sector however, has been in a continuous state of dissaving during the same period. (See Figures 3a and 3b) Given that the currency crisis was triggered by the eventual mismanagement of this growing amount of public sector debt, we now turn to analyzing the public sector.

### **III. FISCAL IMBALANCES AND PATTERNS OF FINANCING IN 1990-93**

The liberalization of the capital account in Turkey took place against a background of macro-populism and mounting fiscal imbalances. The public sector borrowing requirement (PSBR) of Turkey rose steadily between 1988 and 1993, as shown in Figures 4-5, where the gap between public sector revenue and expenditure is widening between 1989 and 1993, and the PSBR is increasing along with the primary deficit, which excludes the interest payments of the non-financial public sector. The gap between the PSBR and the primary deficit started to widen after 1992, as interest payments on existing debt became an increasing burden.

The reasons for this growth in public expenditures were increases in the total wage bill of the government, generous agricultural support policies, worsening performance of the state owned economic enterprises (SEE), the increased cost of military operations in the southeastern region of the country, and increased interest payments after 1992. The privatization of the SEEs

has been a source of “expected public revenue” especially after 1993, but no success in this area was achieved as the Constitutional Court deemed the Privatization Law unconstitutional in 1994. (This ruling of the court was removed in early 1997)

After 1989, the borrowings of the public sector became increasingly dependent on foreign savings. It was agreed in early 1989 that the Central Bank’s financing of the Treasury would not exceed 15% of the total budgetary appropriations. The Central Bank started to implement a monetary program in 1989, with the aim of restructuring its balance sheet<sup>4</sup>. The Central Bank was restricting credit to commercial banks too, and liquidity would be created basically against foreign assets. The financing of public sector deficits were shifted to domestic borrowing, and the share of external borrowing was to be reduced. External borrowing was delegated to private financial institutions, mainly to commercial banks, which were the main source of demand for domestic debt instruments. As the foreign exchange purchases of the Central Bank became the main source of money creation, the ultimate source of public debt financing were short term capital inflows. Ekinci (1996) notes that of the 7.2 billion dollars of external debt accumulation in 1990, 3.8 billion was short term, and 60% of that amount was in the form of short-term foreign liabilities of the commercial banking sector. The medium term success of this program in terms of lowering inflation in the absence of any fiscal adjustment however was low: as will be described below, the increased burden of domestic debt and the eventual shift towards Central Bank financing of the Treasury would lead to the crisis of 1994, eventually increasing the inflation plateau. The share of domestic debt (as opposed to external financing) increased until 1992, when it constituted almost

---

<sup>4</sup> Ekinci (1996) notes that the program mainly involved targeted growth rates for different entries in the balance sheet, and one of the objectives was to reduce foreign currency liabilities to

all of the financing, but then suppressed in 1993, with an important share in it being Central Bank advances. In the crisis year of 1994 however, domestic borrowing rebounded not only to finance the government deficit but also the repayments of accumulated external debt. Next I turn to briefly describing the patterns of the financing mix during the last years leading up to the crisis.

The capital flows to Turkey are shown in Figure 6a, and the interest rate differential in Figure 6b. In 1990 the flows were strong, and conditions for domestic bond financing were favorable. In 1991 however the Gulf War took place and led to uncertainties and minor panics in the financial markets. This resulted in increases in interest rates, shortening of debt maturity, and also put constraints on foreign financing.

The widening of the fiscal deficit had impacts on the governments financing policy mix and patterns of financing started to change after 1991. In November 1991 there were general elections and the government changed. The new government announced a program aiming at lowering inflation, through reducing the public deficit, but it soon became clear that the high level of interest payments were seen as a potential area for savings. In 1992, facing high levels of domestic debt service payments, the government increased the share of money financing. It used almost all of its short term advances from the Central Bank up to its legal limit during the first half of the year, shifted towards longer maturities in its domestic financing and abandoned its policy of keeping external borrowing at about the level of principal repayments, and borrowed about \$1 million in international bond markets.

In the second half of 1992 however, it became evident that reliance on short term cash  

---

residents, implying reverse currency substitution.

advances from the Central Bank to keep interest rates from rising resulted in pressure on the TL/\$ exchange rate, and hence on the Central Bank's foreign exchange position, thus the Treasury accepted a 10% increase on the 3 monthly T-bills and also obtained another \$1.5 billion of external funds.

With regards to the currency crisis of early 1994, analyzing the debt financing mix of 1993, especially that of the second half, is important. Not only were public sector expenditures booming at that time<sup>5</sup>, but there was also a shift towards money financing of expenditures, and cancellations of Treasury auctions at the end of 1993. Ozatay (1996) argues that the Turkish government had become "insolvent" already by the end of 1992, and that the timing of the crisis specifically at the beginning of 1994 was due to the interventions in the domestic borrowing market. He tests the stationarity (as a condition for sustainability) of the discounted real domestic debt stock from 1985.07 on, and finds that there is a unit root in the process, no matter whether the sample end point is 1992.12, or 1993.08 or 1993.12. He concludes that the economy was vulnerable to a funding crisis as of the end of 1992, but the loss of confidence caused by developments in the borrowing process of the Treasury at the end of 1993 determined the timing of the crisis. Comparing the case of Turkey with the funding crises in several European countries in the 1920's ( France, Belgium, Italy ,Portugal and Greece - most of which had actually corrected their fiscal fundamentals by that time), he concludes that such crises were triggered by problems in

---

<sup>5</sup> It should be noted that a significant reason for the large public expenditures of late 1993 and early 1994 was the local elections to be held on March 27,1994. Because of these elections, the prices on SEE produced goods were not increased "on time", and changes in these were lagging well behind the inflation rate. The public, having learned from past experiences, knew with certainty that these government administered prices would go up in a few days after the local elections.

debt management policy: namely by offering interest rates at less than market clearing levels and attributes the timing of the Turkish crisis to the debt mismanagement of late 1993 to early 1994.

The first half of 1993 saw an increased burden of interest payments on domestic and foreign financing of 1992. Yet the Treasury's budgeting program restated the goals of lowering the interest payments and lengthening the maturity of domestic borrowing. Still, the majority of financing came from short term borrowing, the interest rates on which were gradually reduced. (By 13% on 3-monthly, and 2% points on 6-monthly bills) The rates on longer term maturities were increased. \$1.7 billion was borrowed in international markets , and half of the legal limit on Central Bank advances was used.

It was the second half of 1993 that saw a great deal of policy changes. In the beginning of 1993, there was a change in party leadership of the leading coalition partner DYP, and Ms. Ciller was elected as PM in mid June. Towards the end of July, the Central Bank governor resigned as a result of disagreements between him and the PM on the conduct of monetary policy. In the meanwhile, it was often stated by the government that the most important short term policy goal was to lower the burden of the share of interest payments on short term debt, by lowering the nominal interest rates. Thereafter until the beginning of 1994, instead of trying to correct the fundamentals that led to this problem, the government tried to control the interest rates, that is attacked the symptoms of the problem rather than the cause. This attempt of trying to lower interest rates on debt at such high levels of PSBR (12.4 % in 1993) proved to be a very dangerous one.

## **VI. MONETIZATION, DOLLARIZATION, AND THE TURBULENCE IN THE**

## FINANCIAL MARKETS IN LATE 1993-EARLY 1994

Based on two laws passed in August and October 1993, the Short Term Cash Advance (STA) facility<sup>6</sup> of the Turkish Central Bank to the Treasury was extended. In August 1993, the accumulated debt of the Central Bank to the Treasury due to former STA's were canceled, and through an annexed budget, an **additional** 26.8 trillion TL was made available to the Treasury. (The original limit was 28.8 trillion) The developments at the domestic borrowing market as described below explains the reasons for the Treasury to use up not only all of these resources by the end of 1993, but also 53% of the legal limit for 1994 (TL 52.4 trillion) in only the first 3 weeks of 1994. Figure 7 shows the path of domestic credit extended by the Central Bank to the Treasury. The sharp and sustained increase after October 1993 until April 1994 shows the extent of liquidity that was pumped in to the system. Figures 8a and 8b show how during the same months the Central Bank was losing its foreign exchange reserves. To assess the extent of excess liquidity in the system, a money demand equation was estimated in the fashion of Kaminsky and Reinhart(1996). In the model, the measure of excess real balances are associated with sustained positive residuals in a money demand equation (the measure used is narrow money, i.e. M1), implying money creation over and above money demand<sup>7</sup>. The residuals of the regression are

---

<sup>6</sup> STA is the facility through which the Central Bank extends domestic credit to the Treasury, that is, the public sector. The Treasury in turn, gives interest free paper to the Central Bank.

<sup>7</sup> Kaminsky and Reinhart (1996) use this measure as one of the many indicators that may signal a forthcoming balance of payments or banking crisis. The motivation is due to possible excess supply prior to the crisis due to deficit financing a la Krugman (1979), or a decrease in money demand a la Calvo and Mendoza (1996). The pattern emerging from this indicator in their cross-country framework is not clear, and they note the shortcomings of the money demand

indeed positive during the whole of 1993, and the last two months of 1992 implying excess liquidity in the system prior to the crisis. The possible sources of the sustained positive residuals are discussed and results of the regression and a graph of the residuals are presented in the appendix.

During the second half of 1993, the Treasury continued to finance the growing deficit, but at the same time limited the share of 3-month paper to an insignificant amount. The average maturity of domestic debt stock was on a steadily declining path till then, as shown in Figure 9. Against that background, the rates on 3-month bills were suppressed down 4-5% points, while 6-12 monthly borrowing increased with increased rates of 2-3% points. External funding amounting to US\$2 billion was obtained and reliance on Central Bank financing increased.

In the last quarter of 1993, the Treasury started to cancel auctions altogether. In November 1993, 4 out of 5 were canceled, namely those with 3, 6 and 9 monthly maturities. Similarly, in December 1993, no bills with maturities shorter than a year were auctioned.

---

estimation, including measurement and stability issues. As for the 1994 Turkish crisis however, the regression results, -subject to the problems mentioned above-, seem to be clearly indicative of excess liquidity in the economy before the crash.

The auctions of September, October, November and December of 1993 are summarized in Table 2. The cancellations of auctions, and the acceptance rates on 3, 6, 9 monthly maturity auctions points towards the often announced aim of the Treasury: to save on interest rates, and to increase the maturity.<sup>8</sup> The low amount of offers by the market participants for all maturities, in the last two months of 1993 (shown under the entry “Amount Offered”) compared to the previous two months is striking. The “% Accepted” entry refers to the percentage of these offers that were accepted by the Treasury. The amount of borrowing from 3 and 6 month paper was zero, and for the 9 and 12 month bills, both the offered amounts and rates accepted were low. As domestic debt rollover was substituted with monetization, credit to the government from the Central Bank amounted to half of the annual legal limit of 1993, only in the last quarter of 1993. This corresponded to 30% of the international reserves of the Central Bank at that time. (The evolution of Central Bank Net Foreign Assets is shown in Figures 8a, 8b.)

The Treasury, after having canceled the auctions in November 1993 on the basis of high rates (for example 73% in November) would return to the domestic borrowing market in January 1994, having used up half of the 1994 legal limit on STA’s in only the first 3 weeks of the year, this time by fixing the maximum interest rate at 94% in simple annual terms. Yet the demand for these bills were extremely low. The announced budget for 1994 contained no measures for fiscal correction, price increases on SEE goods were delayed but expected to take place immediately after the local elections in the first couple of days of April 1994, thus inflationary expectations were high (Figure 10 shows the evolution of WPI and CPI ) and residents were abandoning TL

---

<sup>8</sup>The timing of this attempt and perhaps the attempt itself- instead led to much higher interest rates to prevail after the crisis of March 1994, since it induced a heavy reliance on

denominated assets in favor of foreign ones. Currency substitution, as proxied by the ratio of M2Y to M2 where M2Y is a broad money measure including foreign currency deposits is shown in Figure 11. The share of domestic currency deposits in M2Y fell from 53 percent to 42 percent between December 1993 to April 1994<sup>9</sup>. The evolution of foreign currency deposits at commercial banks is shown in Figure 12. The decline the stock amount of deposits during the third and fourth months of 1994 corresponds to the period of large withdrawals, and then the return to TL denominated assets, mainly government paper, in May 1994. The domestic borrowing market would in fact disappear until May 1994, when the Treasury managed to borrow substantial amounts again, but at compounded annual rates around 400%. Rates on 3, 6 and 9 montly bills is shown in Figure 13.

---

monetization and triggered several runs on the TL.

<sup>9</sup>OECD Economic Survey on Turkey, 1995, p.23.

Returning to the situation in early 1994, as the domestic borrowing market of the Treasury collapsed, the mechanism through which commercial banks borrowed at foreign markets, and at the domestic market bought mainly T-bills to reap huge profits was temporarily broken. The domestic credit extended by the Central Bank to the Treasury reached record amounts. 53% of the limit of STA's were extended in only the first 3 weeks, which approximately corresponded to 30 % of the net foreign assets of the Central Bank. This liquidity pumped in to the system at a time when the demand for TL was low, led to several runs against the TL in January, February and March 1994. The Central Bank, prior to- and in between the official devaluations, was heavily intervening in the overnight market to defend the parity<sup>10</sup>, and overnight rates did jump to compounded annual rates exceeding 1000% at times. (See Figure 14) The percentage depreciation of the TL was about 16, 6, 18, and 35 during the first 4 months of 1994 respectively. The TL dropped to 39,900 against the US\$ on April 7, but recovered to 33,400 TL/US\$ at the end of the month.

---

<sup>10</sup> The Central Bank Governor resigned at the end of March 1994 as a result of the conflicts between him and the PM over the conduct of policy.

Now we turn to the story behind the run against the TL and the drainage of Central Bank foreign assets in greater detail. It was noted before that an important portion of the inflows of foreign capital to Turkey took the form of short term off-shore borrowing. Although it is not possible to see the discrepancy between the foreign assets and liabilities of deposit banks in IFS data<sup>11</sup> (See Figure 15), many commercial banks held short positions in foreign exchange, and lent domestically at high rates, including to the Treasury. It is noted in different sources that banks had large open positions especially in 1993. Ozatay (1996) notes that open foreign exchange positions of the commercial banks was US\$4.9 billion in December 1993, and declined to US\$ 1.1 billion in June 1994. The same figure for end 1993 is noted in OECD Economic Survey on Turkey, 1995. Short term debt instruments were not issued by the Treasury in the last two months of 1993, and in the beginning of 1994, the stock market was in a steady decline, (see Figure 16) and the TL was losing its value sharply against foreign currencies. The banks rushed to the foreign exchange market to close their positions in foreign exchange, the Central Bank was defending the parity by selling foreign currency at rates below the market rate, as a result of which the Central Bank lost half of its reserves while the commercial banks closed their short positions. The fall in foreign liabilities of the deposit banks from early 1994 on is seen in Figure 15. At the same time, there were large withdrawals of TL and foreign currency denominated deposits from the system. Three small commercial banks (with share in total deposits less than one percent) were placed in receivership in April 1994. Following that, 100% of bank deposits were insured by the Central Bank at the end of April 1994. Although the amount of reserves were at an all time low, this

---

<sup>11</sup> The IFS data on the total foreign assets and liabilities of the Deposit Banks in Turkey (including state owned, foreign and commercial banks) shows the stock amounts, therefore does

seems to have helped to stop the withdrawals. This insurance on deposits has not been removed to date, signifying the fragility of the system.

In April 5, about a week after the local elections, the government announced a stabilization programme. This involved price increases of 70 to 100 percent on SEE goods, and a freeze thereafter up to 6 months. Public sector wages would be frozen, the planned consolidated government deficit was halved for 1994. This deficit reduction would be achieved mainly through one-time taxes on the net assets of firms, wealth and corporate taxes, also by the real decline in the wage bill, and a cutting down on public investment. Reserve and liquidity requirement rules were revised in favor of holding TL relative to foreign currency, and ratios increased in general.

As a result, stabilization of the TL was indeed achieved in May 1994. The Treasury resumed domestic borrowing by offering three-month maturity paper at simple three monthly rates of 50 percent. This coincided with a three month period of very low price and no wage inflation (after a price level jump in April amounting to no less than 100 percent, and a wage freeze) so the real returns on these so called “superbonds” were immense, and demand for TL recovered.

## **V. THE ECONOMIC CONTRACTION OF 1994**

After the April 1994 stabilization program was announced by the government, the IMF approved a stand-by of US\$ 742 million, extended over a 14 month horizon and strongly urged

---

not reveal the flow imbalances arising from maturity mismatch and valuation issues.

the rapid implementation of the structural reform measures . In fact, the stabilization program did not achieve any of its medium term structural adjustment measures to date, such as the implementation of the privatization programme, and social security and tax reform. The budget balance of the central government nonetheless saw a primary surplus that year, through a severely contractionary fiscal stance. Through once-off tax measures, about 2% of GNP was raised as public revenue. Public spending cuts through declining infrastructure investment, and freezing public sector wages while doubling public sector prices contributed to this contractionary stance but also had distributional effects among different income groups. The public sector, in the need of rolling over its debt after the crisis returned to the borrowing market willing to pay very high rates. Through domestic borrowing in the second quarter of 1994, real returns up to 50 % were transferred to public debt holders.

As month on month annual inflation rates hit 150% in 1994, and as real wages fell sharply, private consumption and investment declined. Another channel through which consumption was affected was the high lending rates in 1994. Banks had increased their lending rates in early 1994 to more than 400%, reflecting their reluctance to lend in such an uncertain environment. As these effects curbed aggregate demand, other effects were at work to decrease output through supply channels. The import boom in 1993 was replaced with a very sharp contraction in 1994, after the nominal devaluation. As imported inputs to production became much more expensive, industrial production declined sharply in the last three quarters of 1994. Short term interest rates was another contributing factor: as these increased sharply, the real stock of credit declined (This is shown in Figure 17) working capital rationing took place and the aggregate supply curve shifted upwards.

After an output loss of 6.1% in 1994, output recovery was rapid. The economy grew 7.5 and 8% in 1995 and 1996. The IMF, upon observing that no structural reform was under taken, withdrew in the summer of 1995, and the last trench of the Stand-By was never disbursed. Early elections entered the political agenda in mid-1995, and the correction process in the non-interest component of the public budget started to weaken. Following general elections in the end of 1995, the coalition government changed two times in 1996, and public expenditures rose again. Moreover, Turkey was accepted in to the EU Customs Union at the start of 1996, and the trade balance started to deteriorate once again. The PSBR increased to 10% in 1996, under conditions of problem-free financing, as short term capital flows in the form of foreign borrowing resumed in 1995.

## **V.I. THE ELEMENTS OF TURKISH CASE IN THE CRISIS LITERATURE**

The theoretical literature on balance of payments and currency crises has developed mainly after a seminal paper by Krugman (1979). Krugman's model was one where deteriorated fundamentals, mainly a sustained budget deficit, would cause a collapse of the fixed exchange rate by eventually running down the international reserves to a point where a speculative attack on the currency would erode the last stock amount of reserves and lead to the abandonment of the peg. More recent currency crises, such as the ERM crisis in 1992 and the Mexican crisis of 1994, revealed a shortcoming of the theoretical crisis literature that prevailed till then: the countries experiencing currency crises and thus not being able to sustain their pegs did not necessarily have deteriorated fundamentals in the sense of Krugman's model. Instead, the issues that emerged were

that the government (rather than running a constant deficit as in the Krugman model) may have multiple objectives some of which may be in conflict with the fixed exchange rate target and that can lead to multiplicity of equilibria and indeterminacy problems, and therefore speculative attacks on fixed exchange rates could be self fulfilling. Another major issue was that weaknesses in the banking sector of a country could translate themselves in to major currency problems as in the Mexican and Thai cases<sup>12</sup>.

The Turkish crisis fits the Krugman model quite well , in that deteriorated fiscal fundamentals and therefore huge domestic credit expansion to the public sector eventually found its way through to substantially depreciate the currency (which was not even fixed!) in several stages in the first four months of 1994, and resulted in the loss of foreign assets of the Central Bank. This is also evidence that sufficiently deteriorated macro balances can lead to drastic corrections of the value of the currency even in the absence of an officially pegged rate.

---

<sup>12</sup> See, for example Obsfeld (1995) and Calvo (1995) for models with self-fulfilling attack features, and Calvo (1995) and Calvo and Mendoza(1996) for models and discussion on the implications of the fragility of the financial sector. See Krugman (1996) for an overview and discussion of the “classical” and “new” crisis models.

Prior to the crisis the TL was governed with a managed float with occasional intervention<sup>13</sup>. As fiscal imbalances mounted during 1993, pressure on the TL increased, and the interventions intensified. Moreover, the government attempted to manipulate interest rates in the last months of 1993 which reduced the attractiveness of TL denominated assets. While the importance of fundamental deterioration of fiscal balances in preparing ground for the crisis is clear, it is impossible to rule out the role of policy errors in explaining the timing and extent of the turbulence. The issue of the multiplicity of Central Bank objectives as discussed in e.g. Obstfeld (1994) is also relevant since there was heavy intervention to defend the exchange rate, but at the same time the government had expansionary objectives before the local elections of March 1994. As the temptation to monetize the debt to avoid borrowing at high interest rates on the part of the government did become apparent to the economic agents in early 1994, they started to abandon TL denominated assets in favor of foreign ones (for good reasons-as the TL did indeed depreciate considerably afterwards) which resulted in no demand for government paper (at the fixed rate auctions of January 1994), hence further monetization and further depreciation of the TL. It can be said that the Treasury did act in a manner that pushed the system in to a worse outcome by intervening to its domestic borrowing market. Under conditions of rather deteriorated macro disequilibria, major damage to credibility (if any existed) was done by cancelling Treasury auctions. The magnitude of the austerity measures could have been much less had the excess liquidity buildup and the resulting dramatic exchange rate correction were avoided. The cost of not accepting interest rates around 70-80 % in November 1993, was to accept rates around 400% in May 1994.

---

<sup>13</sup> See OECD (1994).

A very important aspect of the Turkish crisis was that the episode when the Central Bank was losing reserves coincides with the one when the commercial banks were closing their short positions in foreign exchange. In that sense, the Central Bank was heavily intervening and selling off its reserves to the banks - thus bailing them out before the discrete jumps in the exchange rate. Therefore, the fragility of the banking sector due to currency and maturity mismatch problems associated with their stock of their foreign debt was a very important determinant of the crisis, and has important implications in explaining how a non-fixed exchange rate can suffer such a large devaluation. Future work on modeling crises where the currency is not pegged yet deteriorated fundamentals combined with financial sector fragility can lead to substantial reserve losses seems warranted.

## **V.II. CONCLUSIONS**

The previous sections described the events leading to the currency crisis of 1994, which was followed by a minor banking crisis and an economic contraction of 6 percent in 1994. The growing fiscal imbalances following the capital account liberalization, the appreciated exchange rate, together with extensive short term borrowing of commercial banks prepared the weak economic background previous to the crisis. Abrupt shocks to the public sector financing mix at the end of 1993 -resulting in excessive liquidity build-up in the financial markets- put the nail in the coffin of this unsustainable debt financing scheme, albeit temporarily.

From what we have learned from the crisis of 1994, it seems that the declining maturity of the domestic public debt was a very good signal that the Treasury had increasing difficulties in

borrowing, and that a crisis was possibly coming. At a time of large and rising PSBR and declining maturity of debt stock, interventions to decrease the interest rate and cancellations of auctions was a poor idea, especially when the burden of financing fell on domestic credit expansion at a time of high currency substitution and high inflationary expectations. The low and steadily declining average maturity of the debt stock is a measure of vulnerability to policy shocks, as it was a good indicator of forthcoming problems prior to the 1994 crisis.

The main underlying reason behind the crisis of 1994 was the uncontrollably growing domestic debt stock. The deterioration of the fundamentals prior to the crisis did not bother the policy makers or the profit making banking sector too much, under conditions of easy access to capital markets. The perils of fast capital account liberalization without any fiscal adjustment had become apparent in earlier stages of Turkey's financial liberalization. Celasun and Rodrik (1989) gave early warnings of this problem and stated that the public sector budget was the "Achilles's heel of the Turkish macroeconomy". Agenor, McDermott and Ucer (1996) recently analyzed the link between the fiscal imbalances, capital flows and the real exchange rate in Turkey, and suggested that positive shocks to government spending and capital flows appreciate the real exchange rate, and that capital flows indeed respond to uncovered interest differentials, and hence avoiding huge misalignments in the real exchange rate indeed call for substantial fiscal adjustment. Therefore, a sustained fiscal adjustment will need to be a priority to achieve stability in the Turkish economy.

## **REFERENCES**

Agenor, R., C.J. Mc Dermott, and M.E, Ucer (1996), “ Fiscal Imbalances, Capital Inflows and the Real Exchange Rate: The Case of Turkey”, IMF Working Paper.

Akkaya, S.(1994), “ Turbulance in the Financial Market,”(unpublished note), Ankara, Turkey, March 1994.

Calvo, G.A.(1995), “ Varieties of Capital Market Crises.” University of Maryland, Center of International Economics.

Calvo, G.A. and E. Mendoza (1996), “Reflections on Mexico’s Balance of Payments Crisis: a Chronicle of a Death Foretold.” University of Maryland, Center of International Economics.

Celasun, O.(1995) “Sources of Import Growth in Turkey : 1985-1990,” Masters Thesis, Bilkent University, Ankara, Turkey.

Celasun M. And D. Rodrik (1990), “Debt, Adjustment and Growth: Turkey,” in *Developing Country Debt and Economic Performance: Country Studies*, ed. By J. Sachs, University of Chicago Press (Chicago: Il. :1990)

Ekinci, N.(1996), “ Financial Liberalization Under External Debt Constraints: The Case of Turkey” Economic Research Center Working Paper, Middle East Technical University.

Kaminsky, G.L. and C. Reinhart(1996), “The Twin Crises: The Causes of Banking and Balance of Payments Problems” University of Maryland, Center of International Economics.

Krugman, P.(1979) “A Model of Balance of Payments Crises”, *Journal Of Money Credit and Banking* 11:311-325.

Krugman, P.(1996) “ Are Currency Crises Self -Fulfilling?”, NBER Macroeconomics Annual, 1996.

Main Economic Indicators, (1994-1996), The State Planning Organization(SPO), Ankara,Turkey

Quarterly Economic Indicators, Various Issues, The Treasury and Foreign Trade Secretariat, Ankara Turkey.

Obstfeld, M. (1994), "The Logic of Currency Crises," NBER Working Paper No. 4640.

Obstfeld, M. (1995), "Models of Currency Crises with Self-fulfilling Features," NBER Working Paper No. 5285.

OECD Economic Surveys: Turkey, 1994-1996.

Ozatay, F. (1996), "The Lessons From the 1994 Crisis in Turkey: Public Debt (Mis)Management and Confidence Crisis", *Yapi Kredi Economic Review*, June 1996, Vol:7, pp21-38.

Saracoglu, R. (1996), "Financial Liberalization in Turkey", in *Interest Rate Liberalization and Money Market Development*, IMF, Washington DC.

The World Bank (1997) *Private Capital Flows to Developing Countries*, Washington DC.

## **APPENDIX**

To assess the extent of excess liquidity in the system in the months leading up to the crisis, due to excessive creation of credit by the central bank to finance the public sector, a money

demand equation was estimated in the fashion of Kaminsky and Reinhart(1996). In the model, the measure of excess real balances are associated with sustained positive residuals in the money demand equation, implying money creation over and above money demand. Real money balances as measured by M1 deflated by WPI are regressed on monthly dummies, a time trend (to account for currency substitution and financial innovation), real GDP and WPI inflation. The estimation is used as a first approximation of measuring the effect of excess liquidity. As pointed out by Kaminsky and Reinhart, the regression is subject to many shortcomings and thus the results should not be overinterpreted, it is merely used as an indicator of excess real balances. Therefore endogeneity, mismeasurement and stationarity issues are ignored. Estimation results based on a sample of 69 observations between 1990.01 and 1995.09 are as expected: the time trend is significant and negative, proxying currency substitution and the preference of holding interest bearing assets rather than M1 in an inflationary environment, demand for real M1 significantly increases with real output (interpolated to a monthly level) and significantly decreases with monthly inflation. The estimated results are as follows:

<u>Variable</u>	<u>Estimated Coefficient</u>	<u>T-statistic</u>
Time trend	-0.95E+9	-8.48
Real GDP	0.50	6.59
WPI Inflation	-0.17E+12	-3.23

The residuals of the regression are indeed positive during the whole of 1993, and the last two months of 1992 implying excess liquidity in the system prior to the crisis. Figures A.1 and A.2 show the plot of the residuals, and the estimated and actual M1 respectively. The source of the sustained positive residuals could be increased money supply due to monetization of the deficit, or accelerated currency substitution over and above what is captured by the simple time trend due to reasons discussed in the paper. As also pointed out by Kaminsky and Reinhart, inflation rates in the equation do not sufficiently capture the increased opportunity cost of holding money associated with increased risk premia as the economy is drifting towards a crisis. In our case too, the variables in the right hand side of the equation do not capture the increased risk and opportunity cost of holding M1 resulting from adverse exchange rate expectations and the unfavorable impact of the interventions in the Treasury borrowing market to risk of and return to holding non-interest bearing TL before the crisis. Therefore, the results seem to support both the hypothesis of increased supply of money due to money financing of the deficit, hence the importance of deteriorated fiscal fundamentals, but also the importance of the interventions in the borrowing market of the Treasury, as those would definitely decrease the demand for narrow money. In any case, evidence that the increase in domestic credit led to excess liquidity in the system is strong.

**Table.1** Balance of Payments and some Key Economic Indicators of Turkey : 1990-1995

	1990	1991	1992	1993	1994	1995
Current Account (US\$ million)						
Exports	13.0	13.7	14.9	15.6	18.4	21.9
Imports	22.6	21.0	23.1	29.8	22.6	35.2
Trade Balance	-9.6	-7.3	-8.2	-14.2	-4.2	-13.2
Current Account Balance	-2.6	0.3	-0.9	-6.4	2.6	-2.3
Capital Account Balance	3.9	-1.3	2.4	6.6	-2.4	8.9
Portfolio and Direct Inv.	1.2	1.4	3.2	4.5	1.7	1.5
Short-Term	-0.2	-0.8	-0.9	1.4	-0.8	-0.2
Long Term	2.9	-1.9	0.2	0.8	-3.4	7.6
Change in Reserves	1.3	-1.0	1.5	0.3	0.2	8.8
GDP growth 1990 prices	9.4	0.3	6.4	8.1	-6.1	8.1
Inflation (WPI,year end,%)	48.6	59.2	61.4	60.26	149.56	64.9
PSBR <sup>14</sup> ,(%GNP)	7.4	10.2	10.6	11.7	8.1	6.5
Domestic Non Monetary Debt Stock/M2Y	26.3	25.6	37.7	53.7	45.5	-
Average T-Bill Rate	55.7	87.5	93.0	86.1	158.2	-
Average Maturity of DomesticDebt (Years)	2	1.5	1	1	0.7	-

Sources : OECD Economic Survey on Turkey, 1996, Main Economic Indicators, SPO , 1995, Ozatay (1996).

<sup>14</sup>Financing need of the Central Government.

Table. 2a : Auctions of Treasury Bills and Bonds in 1993 (Billion TL)				
	1993.09	1993.10	1993.11	1993.12
<b>Maturity : 12 Months</b>				
Amount Offered	18730	28866	14942	9743
% Accepted	33.6	90.6	44.1	81.7
Max Interest Rate	87.5	87.5	88.5	90.0
<b>Maturity : 9 Months</b>				
Amount Offered	20263	10699	1433	828
% Accepted	18.7	32.7	48.9	0.0
Max Interest Rate	82.6	79.5	81.6	93.0
<b>Maturity : 6 Months</b>				
Amount Offered	16566	10007	2917	1577
% Accepted	11.7	19.5	0.0	0.0
Max Interest Rate	72.5	70.0	75.8	82.5
<b>Maturity : 3 Months</b>				
Amount Offered	4521	6174	2278	1453
% Accepted	21.5	16.2	0.0	0.0
Max Interest Rate	65.1	63.4	73.3	72.7

Source : Reproduced from Ozatay (1996), p.30.

Note : Interest rates are simple annual rates.

Table 2.b: Fixed Rate Auctions of T-Bills and Bonds in 1994							
Auction Dates	Maturity (days)	Amount Sold(bill.TL)	Interest Rate (%)	Auction Dates	Maturity (days)	Amount Sold(bill.TL)	Interest Rate (%)
Jan 12	365	6301	94	May 3	365	15	140
Jan 17	168	5522	78	May 3	90	5	130
Jan 19	270	426	90	May 10	31	6458	146
Jan 19	107	473	75	May 11	31	1205	146
Jan 20	111	32	77	May 12	365	1006	299
Jan 26	182	113	81	May 12	31	455	146
Jan 26	75	48	74	May 13	31	348	146
Jan 27	47	479	88	May 16	31	589	158
Jan 27	32	1025	91	May 16	90	200	160
Jan 31	91	2585	90	May 17	31	531	158
Feb 2	91	82	99	May 17	90	0	-
Feb 9	365	2865	125	May 18	31	2465	158
Feb 14	91	179	90	May 18	90	0.1	160
Feb 14	110	3	92	May 25	31	909	158
Feb 14	47	11	88	May 25	90	63	160
Feb 16	270	284	115	May 31	31	10750	164
Feb 23	180	55	100	June 7	31	16686	164
Mar 2	90	45	99	June 7	90	8608	200
Mar 9	365	2432	130	June 14	180	7048	299
Mar 22	180	155	104	June 14	90	31440	188
April 5	365	521	130	June 15	90	34642	178
April 12	270	6	110	June 16	90	17323	164

Source : Reproduced from Ozatay (1996), p.31.

Note : Interest rates are simple annual rates.

