

Turkey: Another Case of Twin Crises

Abstract

The Turkish exchange rate-based stabilization (ERBS) plan adopted at the start of 2000 has been a spectacular failure. The plan lasted a mere fourteen months despite the use of a relatively flexible peg regime and a pre-announced exchange rate exit strategy. The final three months of the currency regime was marred by the eruption of a banking sector crisis which quickly developed into a currency crisis, quelled only via additional external loans and an informal, blanket guarantee by the Sovereign of all banking sector liabilities. This was ultimately to no avail as the Lira was allowed to float following a full-fledged currency crisis in late February 2001.

Familiar crisis leading indicators did not point to imminent turmoil in November 2000. Indeed, it is safe to claim that no one foresaw the November crisis – although signs of matters amiss surfaced a fortnight before - despite concerns about eventual dire developments. The element of surprise is, of course, in the very nature of crises, for otherwise remedial measures would avert debacle. In retrospect, however, questions about the inevitability of the November crisis, its timing, and, naturally, its immediate causes beg elucidation.

To identify the source of the November crisis, one must weigh diverse factors which led agents in the economy, and banks in particular, to expect higher interest rates after Fall. Political uncertainty is discounted on the grounds that the next general election would not have been likely prior to 2002 at the earliest because electoral success rested on the delivery of 'low' inflation. External imbalance arguments are discounted because Central Bank international reserves were higher in mid-November 2000 than the start of the year. The pivotal concept of 'credibility' cannot by itself explain the eruption of the November crisis either because year 2000 fiscal targets had been exceeded by a comfortable margin.

In this sense, the November crisis, when it came, was unexpected. Once financial turmoil got underway, however, the demise of the stabilization plan became much more probable. In sum, the February crisis was not truly a surprise, but the November crisis was because the main culprit for it was none of the usual suspects.

This paper argues that the failure of the program has little to do with traditional explanations for ERBS flops. A microeconomic issue, the phasing in of stricter prudential currency position rules - ironically, to strengthen the banking sector -, may have been much more significant in undermining the stabilization plan than is recognized. Current account imbalances, credibility loss, predatory competition, bank takeovers by authorities have, nevertheless, provided rich sources of underlying tension.

JEL Classification: E44, E65

Keywords: Currency crisis, banking crisis, exchange rate-based stabilization, Turkey

G.Gökkent, C. Moslares, R.Amiel-Saenz¹

August 2001

¹ Rafael Amiel-Saenz (ramiel@hamiltonbank.com) is the chief economist at Hamilton Bank, N.A. at Miami, Florida, Carlos Moslares (moslares@iqs.url.es) is an associate professor at Universitat Ramon Llull and Universidad Autonoma in Barcelona, Spain, and Gýyas Gökkent (gmg_s@hotmail.com) is economist at Garanti Bank and assistant professor at İþýk University in Istanbul, Turkey.

Introduction

The Turkish exchange rate-based stabilization plan adopted at the start of 2000 has been a spectacular failure. The plan lasted a mere fourteen months despite the use of a relatively flexible peg regime and a pre-announced exchange rate regime transition plan. The final three months of the currency regime was marred by the eruption of a banking sector crisis which quickly developed into a currency crisis, quelled only via additional external loans and an informal, blanket guarantee by the Sovereign of all banking sector liabilities. These measures provided a temporary respite to the Central Bank from speculative onslaught. As Krugman (1979) noted, however, “the pattern of alternating speculative attacks and revivals of confidence is a natural event when the market is uncertain about how much of its potential reserves the government is willing to use. The reason is that speculators are faced with a ‘one-way option’; they do not lose² by speculating against the currency even if fears of abandonment of fixed rates prove unjustified”. A full-fledged currency crisis, sparked by a political squabble, finally led to the float of the Lira in late February 2001.

Familiar crisis leading indicators did not point to imminent turmoil in November 2000. Indeed, it is safe to claim that no one foresaw the November crisis – although signs of matters amiss surfaced a fortnight before³ - despite concerns about eventual dire developments. It is undeniable that the element of surprise is in the very nature of crises, for otherwise remedial measures would avert debacle. In retrospect, however, questions about the inevitability of the November crisis, its timing, and, naturally, its immediate causes beg elucidation. Moreover, fragile as the Turkish banking sector may have been, the crisis precipitant was neither overburdened state banks, nor any number of small, anemic private institutions.

The ostensible spark for the debacle was, without a doubt, the travails of medium-sized Demirbank; hitherto highly profitable⁴, but succumbing to credit-line cuts and two weeks of exorbitant interest rates. To identify the source of the November crisis, one must weigh diverse factors which led agents in the economy, and banks in particular, to expect higher interest rates after Fall 2000 which would render Demirbank a poor credit risk. Political uncertainty is discounted on the grounds that the next general election would not have been likely prior to 2002 at the earliest because electoral success rested on the delivery of ‘low’ inflation. External imbalance arguments are discounted because Central Bank international reserves were higher in mid-November 2000 than the start of the year. The pivotal concept of ‘credibility’ provides insufficient explanation as well because year 2000 fiscal targets had been exceeded by a comfortable margin.

² Speculators do have an opportunity cost in the form of local currency interest rates, however.

³ Overnight simple weighted average interest rate in the interbank market rose to 81% on November 15th. This was attributed to regular mid-month wage withdrawals. As Uygur (2001) notes, however, preceding months’ mid-periods did not exhibit such a spike. Interest rate spikes occurred almost exclusively at the end of each month. This pattern was attributed to bank activities to comply with regulations.

Failure of the anti-inflation program has little to do with traditional explanations for ERBS flops. Indeed, the November crisis was a surprise precisely because the main culprit for it was none of the usual suspects. We propose that a microeconomic issue, the phasing in of stricter prudential currency position rules (ironically, to strengthen the banking sector), may have been much more significant in undermining the stabilization plan than is recognized. Current account imbalances, credibility loss, predatory competition, bank takeovers by authorities did, nevertheless, provide rich sources of underlying tension. So rich, in fact, that once the plan's veneer of invincibility –its credibility as manifested via Central Bank net domestic asset, net international reserve limits – was tarnished, it could not be properly restored. All culminating in the plan's now less than surprising doom in February 2001.

The first section of the article provides a brief survey of literature on the sources of banking and currency crises. A description of the Turkish macroeconomic background is presented next. The following two sections describe the anatomy of the November and February crises. A fifth section details the impact and logic of currency risk regulation in Turkey and relates it to events leading to and during the crises. The final section concludes.

Crisis Literature Review

Calvo and Vegh (1997) identify “a slow convergence of the inflation rate (measured by CPI) to the rate of devaluation, initial increase in real GDP and private consumption followed by a later contraction, real appreciation of the domestic currency, deterioration of the trade and current account balances” as empirical regularities found in exchange rate-based stabilization plans.

Guidotti and Vegh (1997) point to the gradual loss of credibility during the lifetime of a stabilization plan as the culprit for balance of payments crises. Credibility, a nebulous term, is defined as adoption and sustained implementation of fiscal reforms. In this framework, greater inflation inertia leads to a larger real appreciation, and thus actually creates greater pressure for the passage of fiscal reforms. Meanwhile, devaluation expectations increase too, however, raising nominal interest rates and rendering currency crises more likely. In the end, the ‘inevitability’ of devaluation perspective dominates, and credibility plunges. In practical terms, therefore, the potential seeds to a balance of payments crisis are sown at the start of a stabilization plan with the announcement of a ‘fiscal agreement’. A gradual undermining of this pact –of policymakers’ pledges to the public- and concomitant credibility erosion culminates in currency crises.

⁴ Net profits in the first nine months of 2000 were TL 64 trillion. The exchange rate at the end of September 2000 was TL/US\$ = 663,434.

The argument made by Tavli (1996) points to tax revenue being an increasing function of consumption, and that the establishment of relative fiscal order may not be due to sufficient fiscal tightening, but merely a temporary boom. Once the boom fades the argument goes, so does fiscal performance.

The classic model of a currency crisis per Krugman (1979) incorporates monetized fiscal deficits leading to international reserve losses, and eventually a devaluation⁵. In this vein, Velasco (1987) shows how banking sector problems can explode into balance of payments crises.

Financial sector crises have been blamed on numerous factors. Lindgren et al. (1999) examine financial crisis episodes in Asia. They isolate four factors as sources of weakness: short-term foreign currency debt made even shorter by material event clauses, credit binges, reliance on collateral eclipsing credit assessments, and moral hazard derived short foreign currency positions due to fixed exchange rate regimes. Hardy & Pazarbaþýođlu (1998) list a contemporaneous fall in real GDP growth, boom bust cycles in inflation, credit, capital flows, rising real interest rates, a sharp decline in the real exchange rate, and an adverse trade shock as empirically significant factors in explaining banking sector distress.

Demirgüç-Kunt & Detragiache (1997) also find that banking crises erupt when growth is low and inflation is high. They, too, identify high real interest rates and vulnerability to balance of payments crises as culprits in systemic problems. They also cite the possibility of a sharp increase in real rates in the context of an inflation stabilization plan. They conclude that higher real interest rates⁶ tend to increase the likelihood of a banking crisis⁷.

The Turkish Twin Crises⁸

The crises that the Turkish economy has faced in November 2000 and the follow-up in February 2001 should not be portrayed squarely as a run-off-the-mill exchange rate-based stabilization scheme culminating in disaster. The macroeconomic background in 2000 does, nevertheless, exhibit features

⁵ Sachs, Tornell & Velasco (1996) argue that an excessive flow domestic credit expansion need not occur for vulnerability to a speculative attack to exist. They believe that vulnerability exists when the stock of M2 'greatly exceeds the stock of foreign exchange reserves', even if domestic credit policy is tight.

⁶ Real interest rates in Turkey were actually far lower in 2000 in comparison to the past few years.

⁷ A prophetic excerpt from their conclusion states that "the design and implementation of effective inflation stabilization programs should be accompanied by a careful evaluation of the impact on the banking system, and in countries where the banking system appears weak, the benefits of inflation stabilization should be carefully weighed against the costs of a possible banking crisis". In Turkey's case, Selassie (2000) evaluated the banking sector's prospects in an IMF report, but mainly dwelled on loss of float income and windfalls gains on securities portfolios. Indeed, windfall gains were 'taxed' at the start of 2000 by the announcement of varying deductions on interest income from bonds. This measure was greeted positively on the whole by international rating agencies because it made year 2000 fiscal targets more plausible.

⁸ Twin crises refers to banking and currency crises, and not simply a chronological distinction between events in November and February. The November crisis, of course, began as a banking sector crisis that

associated with such programs. Amongst the characteristic hallmarks of exchange rate based stabilization schemes as displayed by the Turkish economy were a current account deficit to the tune of 4.83% of GNP financed by foreign portfolio investment and so-called other capital flows, consumption bunching with durable goods sales up by 23.7% year-on-year, a brief credit boom⁹ (up by 60% year-on-year in nominal terms and 15.1% in CPI-adjusted terms) all crowned by a burst stockmarket bubble¹⁰ (-38% year-on-year in 2000 in nominal Lira terms) .

Several explanations have been put forward to account for the regularities observed in exchange rate-based programs¹¹. In Turkey, the sharp decline in nominal interest rates upon announcement of a slower devaluation schedule –as dictated by the interest parity condition –, and an equally sharp fall in real interest rates because of inflation inertia¹² fit the bill for the occurrence of these regularities¹³. Lower interest rates acted as an intertemporal lever bringing forward expenditure decisions, with this effect being most pronounced in the durable goods sector. Nevertheless, November 2000 was not regarded as the period in which currency turmoil would surface in Turkey. Most observers believed that mid-2001 would be a period of turbulence because of the transition to a crawling band regime instead of the crawling peg that had been in place¹⁴, a degree of inflation inertia, and of course, the fate of delayed structural reforms.

later developed to a full-blown currency crisis. The February episode was a currency crisis foremost, but also exhibited banking sector distress.

⁹ “A program that succeeds in stabilizing price inflation cannot possibly keep the quantity of money unchanged because lower inflation generates a higher demand for money...It was (wrongly !) assumed (in Israel) that individuals would therefore obtain the quantity of money they demanded by converting foreign currency assets...and not by expanding bank credits;...when fiscal and incomes policy is aimed chiefly at a reduction of private disposable income, the public tends to offset this policy by borrowing, especially if the policy is perceived as temporary ”, Bruno & Piterman (1988).

¹⁰ The Istanbul Stock Exchange (ISE) 100 index had risen by 485% year-on-year in nominal Lira terms in 1999. The large percentage increase is due to a low starting point as well as positive expectations with regards to the IMF sponsored stabilization plan in 2000. ISE –100 continued to rise in January 2000, but thereafter fell on profit taking. It recovered its peak in Lira terms in April, but slid thereafter.

¹¹ Calvo & Vegh (1997) provide a masterful survey of inflation stabilization episodes. Some of the explanations they cite are inflation inertia (causing an initial drop in real interest rates), lack of credibility (nominal interest rates expected to be low only for a limited time, resulting in consumption bunching), and wealth effects.

¹² Turkish wholesale prices had risen by 32.7% and consumer prices by 39% in 2000, whilst CPI rose by 3.4% y-o-y in the US, producer prices as measured by finished goods price index rose by 6.6% y-o-y, German consumer prices rose by 1.9% y-o-y, producer prices by 4.2% y-o-y in 2000.

¹³ The authorities announced from the onset that the fall in interest rates was beyond their expectations, and by a large margin. Ex-Treasury Undersecretary later said that they had expected the cost of borrowing to the Treasury to fall to the 60% p.a range from an average of 109.5% p.a. in 1999. The actual weighted average cost of borrowing was 38.1% in 2000.

¹⁴ Egilmez (2001), among others, suggests that an earlier than planned adoption of the crawling band regime in place of the crawling peg might have allowed a smooth transition to a float.

Despite the unsustainable¹⁵ macroeconomic background in 2000, there was a sense that remedial measures could be taken to avert a possible devaluation¹⁶. Central Bank foreign exchange reserves had not declined prior to the outbreak of the crisis, indicating that the current account deficit had already been financed without unduly creating external vulnerability (in other words, ratios such as M2 to international reserves remained steady). Critics argued that the only reason why international reserves had not declined during the year was external borrowing by the Treasury. The financing of the current account deficit through debt was thus regarded as interference with self-regulating macroeconomic levers. On the plus side, Treasury borrowing was very long term in comparison to past capital market issues, with the Sovereign issuing a record thirty year eurobond at the start of 2000.

The economic framework indeed carried auto-correcting mechanisms regulating capital flows¹⁷ which were much hyped at the onset of the program¹⁸ (essentially a quasi-currency board scheme, with a band around

¹⁵ Sustainability concerns largely revolved around the current account balance in 2000. Calvo (1996) defines the steady state sustainable current account balance as a percentage of GDP to equal the rate of growth of output times net external debt as a percentage of GDP ($CA_{ss} = \eta f_{ss}$). Steady state external debt requires an assumption, and a figure between 0.6 and 0.8 is frequently used. In Turkey's case, gross total external debt stood at 57.99% of GDP at the end of 2000. GDP growth rate the same year was 7.15%. Using these figures, the sustainable current account balance for that year comes to 4.15% of GDP. This, of course, ignores the fact that net debt would be smaller, and that the level of indebtedness which is acceptable may actually be larger. If one made an assumption about the steady state growth rate for Turkey, 4.5-5% per year, then the sustainable deficit level is probably around 3% of GDP. Dornbusch (2001) states that it typically takes two-three years for matters to get out of hand.

¹⁶ Those who called for interest rates to rise were actually quite pleased at the increase in yields in October and November 2000. Treasury redemptions were very light after August, so the Treasury did not have to endure higher than desired cost. Please refer to table 26. The self-imposed constraint here was, however, a pre-announced borrowing schedule with minimum and maximum limits on amounts to be borrowed. Those who clamored for higher interest rates overlooked the fact that under the then policy combinations the burden of adjustment - under a fixed exchange rate variant regime without recourse to sterilization, and with a relatively high degree of capital mobility - should fall squarely on fiscal policy. A tight fiscal policy stance (cutting public sector expenditures being the preferable avenue) was the key to meeting macro-policy concerns. Indeed, these concerns were apparent since March 2000. A more pro-active (as opposed to ad hoc) economic policymaking - one that does not set too much faith in a Panglossian approach (that everything is for the best of possible worlds) - would surely have been useful at that stage.

¹⁷ "Other than for short-term fluctuations, all base money will be created through the balance of payments and domestic interest rates will be fully market determined. Capital inflows will not be sterilized, allowing a rapid decline in interest rates and avoiding an excessively large interest rate differential, which would perpetuate the inflows. In the same vein, capital outflows will not be sterilized, so as to lead to a prompt increase in money market interest rates, which will help ensure that the floor on net international reserves is observed should pressures on the exchange rate arise", excerpt from Turkey's letter of intent to the IMF on December 9th, 1999.

¹⁸ "Under a gold standard regime, balance of payments developments provide automatic mechanisms of adjustment which ensures that, ultimately, any balance of payments disequilibria would be corrected. One mechanism is through the variation in the interest rate which induce corrective movements of capital; for example, the surplus country would lower its interest rate while the deficit country would raise its interest rate and capital would flow from the former to the latter. Another mechanism, through the goods markets, operates more slowly. Deflation and inflation of the money supplies will lead to relative changes in prices and/or real output that will correct the imbalances. The adjustment through prices is associated with the classical price-specie flow mechanism while the adjustment through output is associated with Keynesian thinking" (Argy 1994).

the Central Bank's net domestic assets providing some flexibility). These were touted to be the antidote for both inflation inertia and excess current account imbalances. Experience has since proved that these auto-control mechanisms either worked too slowly, or not at all once credibility was lost¹⁹. The rise in interest rates, far from providing an incentive for capital inflows, was a negative signalling mechanism interpreted as a certification of weakness, an expression of a confidence/credibility problem, and, last but not least, as a menace to fiscal rectitude for a highly indebted Sovereign²⁰. High interest rates (triple and quadruple digits in Turkey's case) were the tell-tale symptom of an impending currency crisis.

There is no doubt that Turkey's stabilization plan stood on weaker ground following the banking crisis in November 2000. The surprise was thus not particularly the occurrence of the February currency turmoil along the lines suggested by Krugman (1979), but rather the banking sector crisis that preceded the devaluation.

Nonetheless, in spite of meticulous planning, the stabilization scheme had already begun to flounder somewhat before the year was out. A deteriorating external balance was a prime factor which undeniably provided fertile ground for the loss of confidence in the run-up to the float of the Lira. External balance worsening exhibited itself through terms of trade deterioration, a factor due, in part, to rising global energy prices. Real exchange rate worries were extant as well. Nevertheless, the relatively quick transition to a more flexible exchange rate regime, and tighter fiscal policy were believed to have the capacity to keep in check excessive external imbalances.

A natural point of start could be to question why Turkey, with IMF support, implemented an exchange rate stabilization scheme if the plan's quick demise was so certain. The answer, naturally, must be that no one, not even the most pessimistic of the doomsayers, expected a crisis in a mere eleven months into the program. The fundamental difference between the earlier exchange rate based stabilization schemes and the

¹⁹ Interest rates fell sharply on January 1st, 2000. The cause was not an immense increase in the money supply. The immediate cause was the credibility of a pre-announced exchange rate regime. The slower devaluation rate lowered interest rates through the interest rate parity condition. In this instance, therefore, money supply was not the predominant actor affecting interest rates. This meant that the self-regulatory mechanisms in which so much faith had been set could be by-passed. The precise opposite sequence of events came about once the credibility of the exchange rate path was undermined. Once credibility disappeared, even four digit, exorbitant interest rates did not manage to attract capital inflows. These became insensitive to interest rates and, indeed, very high interest rates became a signal of caution to investors rather than a source of attraction. A report by Turkish Banks Association (2001) points to margin calls as being the culprit for the continued demand for foreign exchange by Turkish banks despite increases in Lira interest rates. In other words, as the value of the underlying collateral (Turkish eurobonds) fell, banks had to compensate for the shortfall. The problem with crediting this argument for the malfunctioning of the auto-correcting mechanism is that local interest rate changes should attract all capital, not just by local actors.

²⁰ Whilst debt redemptions were minor after November 22 for the rest of 2000, there were large redemptions coming due in February, May, June, July and August 2001. The February crisis occurred in a period of heightened worries about Treasury's ability to rollover debt.

Turkish program was the pre-announced exchange rate exit strategy. The Turkish scheme was to be the distillation of all the lessons learnt elsewhere. The main lesson learnt was that economies with relatively flexible exchange rate regimes adjusted far faster, and with less output loss to external shocks. The adroit management of the Turkish economy had in fact been one of the posterchilds of how to weather first the Asian and later Russian crises. It was in this context that the Turkish stabilization scheme adopted a crawling peg regime (allowing a 20% devaluation of the Lira vis-à-vis a euro-dollar currency basket²¹ in 2000) to last from January 2000 to July 2001, to be replaced by a gradually widening crawling band thereafter until 2003, at which juncture pegging would be completely abandoned (IMF 1999). The quick return to a flexible exchange rate regime and the relatively flexible peg system in the interim were intended to avoid a currency crisis à la Brazil in 1999, for instance.

Prior to November, most of the familiar crisis leading indicators listed in table 5 did not flash alert signals. Indicators of overborrowing cycles such as money multipliers and the ratio of domestic credit to GDP looked relatively innocuous in 2000. M2 multiplier stood at 4, a moderate level in comparison to earlier years as shown in table 6. Domestic credit did, indeed, rise to a historic high in 2000 at 48% of GDP, but the portion accounted for by private sector loans barely budged at 22.8% of GDP. The rise in consumer loans from 1.3% of GDP a year earlier to 3.7% simply reflected the extremely low starting point, and can hardly be characterized as a borrowing boom.

Bank runs, another crisis symptom, never took place either despite multiple bank take-overs. The takeover of five banks²² in October 1999 by the authorities was followed by another round²³ in October 2000. Bank takeovers did not cause depositor panic, but did undermine confidence in the banking system whilst bringing additional burdens on the Treasury. Bank closures also took place in Cyprus, with two failures in May 2000, and one in September 2000. Cyprus was used by some Turkish banks to operate so-called off-shore repos. Dornbusch (2001) cites the travails of Banco Turco-Romana –owned by Bayındır Bank, taken

²¹ CBRT announced the daily value of the Lira vis-a-vis a currency basket composed of (US\$ 1+ Euro 0.77) for a year ahead.

²² SDIF took over the control of five medium-sized banks on December 22, 1999. The banking license of an investment bank, Birlesik Yatirim, (which had not been active for some time) was also revoked. The Treasury had stopped the operations of BY (as an investment bank it never was permitted to accept deposits) several years ago. The authorities have tried to calm fears and thus prevent runs on the banks by stating that deposits at the five banks were even safer than before. The fact that the deposit insurance scheme covers 100% of the domestic accounts for individuals up to TL 100 billion (except for bank owners) means that the authorities were merely trying to reassure the public. The manner in which the authorities took over the banks meant that the government now had to foot the bill for so-called off-shore accounts as well. Although the authorities claimed that the pertinent banks were insolvent, none of them were shut down. The status of these off-shore accounts (technically outside the realm of SDIF protection) had apparently led to some rifts within the ranks of the authorities. CBRT governor claimed that the state had no obligation to refund off-shore deposits, but a minister later stated that these accounts (presumably for these banks only) would be protected as well. The banking system was said to function more healthily because the insolvent banks are no longer pushed up interest rates in an attempt to remain liquid.

²³ Etibank and Bank Kapital were transferred to SDIF control on October 27th, 2000.

over in July 2001 – as an indicator of worse to come. The worst aspect of the takeovers was its piecemeal progress despite assurances each time that the latest bunch were the last ones to be taken over, and that the system had been cleansed²⁴. Nonetheless, no bank runs occurred because of the existence of a trusted deposit insurance scheme²⁵.

Financial fragility was much dwelled on as a cause for the outbreak of crises in Turkey, but concern prior to November focused on public sector banks and small sized banks. As for Demirgüç-Kunt and Detragiache's (1997) finding of high interest rates as a crisis culprit, whilst high real interest rates were indeed damaging to the Turkish banks following the outbreak of turmoil in November, the abrupt, sharp rise was contemporaneous, and thus was not the source of a gradual erosion of bank profitability pre-November. In any case, some degree of interest rate rise was actually welcomed in early Fall 2000 because this would help re-establish external balance. Despite the existence of underlying sources of tension, however, there was little reason to expect a significant rise in Lira interest rates given the currency path of slower devaluation. The interest rate trend was still expected to be downward though at a more gradual pace²⁶. High interest rates were a symptom, not an instigator of the crisis.

Sachs, Tornell & Velasco (1996) define 'weak fundamentals' as a combination of an appreciated real exchange rate and the existence of a weak banking system. A weak banking system could thus be construed to be one which precludes authorities from raising interest rates to defend the local currency²⁷. This line of argument is hardly fair given that few financial systems can withstand several weeks of triple or quadruple digit interest rates²⁸. Ultimately, factors that result in banking sector distress adversely affect either assets, liabilities, or both. Asset problems essentially center on a rise in non-performing loans. This may occur due to a credit boom, lax credit checks, or overconfidence in collateral²⁹. A devaluation also hurts asset quality. Firms and retail customers who earn in local currency may now experience difficulty meeting foreign exchange obligations to banks. Liability problems surface following an unexpected, sudden devaluation if

²⁴ Piecemeal action on bank take-overs continued following the float of the currency. Five more banks were put under SDIF administration on July 10th, 2001, whilst two small investment banks' licenses were revoked. EGS, Bayındır, Site, Tarıf, and Kentbank were put under the auspices of SDIF, whilst Atlas and Okan Yatırım's licenses were revoked.

²⁵ A tentative step in the strengthening of the financial system was the lowering of deposit insurance threshold from TL 100 billion to TL 50 billion by end-2000. Moral hazard had been pointed to as a major problem especially by larger banks which were confident of their status and stood most to gain from rationalization and weeding out of the 'small fry'.

²⁶ The introduction of a widening crawling band regime in mid-2001 could mean that nominal interest rates could rise somewhat under the assumption that the US Dollar maintained its strength (this determines nominal interest rates and inflation to an important degree in Turkey) in the basket and maximum devaluation permitted under the band occurred.

²⁷ Higher interest rates failed to attract capital flows beyond a certain level, anyhow.

²⁸ Demirbank, taken over on December 6th, turned from an illiquid bank to an insolvent one within two weeks during which interest rates rose to fantastic levels. Those lending preferred to do so through the Central bank intermediated interbank market in order not to carry counterparty risk.

²⁹ Extension of loans with property as collateral is a good example. The Japanese experience is illustrative.

banks carry a short foreign exchange position. Similarly, an overreliance on short-term funding will hurt the banking system in a period of interest rate volatility.

The Turkish banking sector did, indeed, have pockets of weakness, though it had been, on the whole, quite profitable since 1994 as shown in table 1. The pockets of weakness were smallish banks which had lent heavily to related parties pre-August 1998 (the date of the Rouble devaluation) and public sector banks burdened with ‘duty losses’³⁰. ‘Contagion’ from Russia and a devastating earthquake had certainly made 1999 a terrible year for the Turkish economy in general, and, at first glance, a mixed one for banks given that five of their count³¹ had become insolvent, ending up under the auspices of the Savings Deposit Insurance Fund³². In fact, most banks’ performance was stellar in 1999 as attested to by a breakdown of national income data. State Institute of Statistics figures show that the financial sector grew by 6.34 % in 1999 riding on strong securities income growth. It is, thus, all too easy to dismiss post-November 22 economic turmoil as a reflection of banks’ inability to deal with an era of low interest rates under a climate of declining inflation. Indeed, despite above consensus monthly inflation figures, the year-on-year inflation rate had fallen below 40% in November for the first time in a decade. Economists had long concurred that though lower securities income would shave off profits, the Turkish banking sector had plenty of room to grow. The favorite statistic to quote was credit to the private sector as a proportion of GDP, a measly 19.7% as of November 17th. It was natural for banks, therefore, to seek to maintain profitability by increasing their loan books in anticipation of a securities income³³ decline from 2001 forward. Lower margins from these loans, in comparison to state

Table 1- Bank Profits in Selected OECD Countries	
Pre-Tax Profits Scaled by Average Assets	
	1994-1996*
Turkey **	3.00
Austria	0.89
Germany	0.96
U.K.	1.43
Czech Republic	1.79
Hungary	0.84
South Korea	1.69
Mexico	2.58
Poland	3.70

Source: adopted from Selassie (2000).

* average for 1994 and 1996.

** average for 1997 and 1998 after monetary correction

³⁰ Duty losses piled as subsidized loans were handed out to small and medium sized firms and the agricultural sector. The stock of duty losses hovered around US\$ 20 billion in 2000.

³¹ Please refer to table 23. These banks were relatively small ‘fry’ in the US\$ 155 billion Turkish banking sector. The takeover of these banks did, nevertheless, reveal the pervasiveness of graft in the system and certainly tainted the image of the whole sector. The fact that so many banks were takenover at the same time undermined confidence in the rest of the system, although existence of deposit insurance prevented panic.

³² By August 2001 non-performing loans (NPLs) of the banking sector had risen to a new high of around 20% of outstanding credits of TL 34,252 trillion (roughly US\$ 25 billion) after hovering around 10% in the aftermath of the 1999 recession. NPLs amounted to TL 6,847 trillion in August 2001, and public sector banks’ share was TL 1,691 trillion, whilst private sector deposit banks’ (including SDIF banks) share was TL 4,113 trillion. Out of this amount roughly 65% was SDIF banks’ share.

³³ Securities income had yet to decline in 2000. This is probably the main reason for a lack of consolidation in the industry during the year.

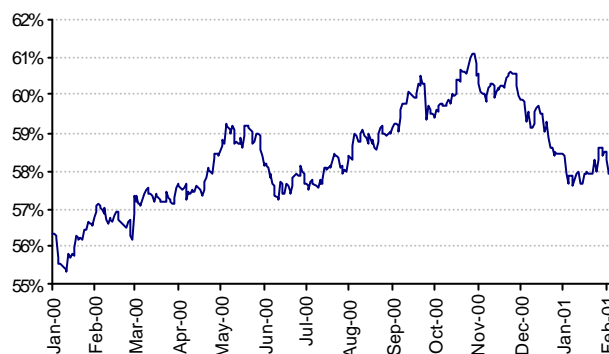
borrowing just a year before, meant that profitability could only be maintained through a higher loan volume.

Another crisis precursor is the state of monetary policy. Monetary policy stance was rule-based in 2000 and, in that sense, could not be termed loose. Table 9 presents annual money supply growth rates by month. M2Y, a broad money aggregate, grew by 35.5% during 2000 roughly in line with the price increases during the year. Interestingly, relatively slow growth in narrow monetary aggregates by mid-year 2000 had led the Central Bank to conclude that the economic recovery had thus far been weak and uneven³⁴.

One crucial warning light was Turkey's current account problems in 2000 emanating from higher imports. The unsustainably large current account deficit heralded the eventual possibility of a currency crisis if remedial actions were not followed through. The arrival of a crisis, however, on the mere eleventh month of a stabilization scheme must surely be attributed, by a clear measure, to other culprits. The center of contention is the timing of the crisis. Had balance of payments imbalances built up sufficient weight to cause a crisis in the eleventh month of a stabilization scheme ?

The argument here hinges on inflation in excess of devaluation, leading to currency appreciation, which in turn shows up as a current account deficit. Certainly, WPI had risen by 32.7% y-o-y at end-2000 and CPI had risen by 39%, whilst Lira's devaluation vis-à-vis the currency basket had been a mere 20%. Focusing on WPI (because it includes traded goods) the counterargument is that the excess inflation was due in part to fiscal balancing measures introduced at end-1999.³⁵ In January and February, WPI had risen by 5.8% and 4.1%, respectively. Thus, roughly 5 points could be counted as the effect of belated fiscal measures. A counterargument may be that irrespective of the source, inflation exceeded devaluation by

Figure 1- Weight of US\$ in the (US\$1+^a0.77)Currency Basket



Source: author's calculations

³⁴ An excerpt from CBRT's quarterly inflation report released in the second half of June 2000 read: 'Due to the weak recovery in the economy, there was not a substantial increase in currency circulation although interest rates showed a sharp decline' (CBRT 2000). As of mid June, therefore, CBRT's belief had been that growth had been anemic and sector specific (durables).

³⁵ Measures which contributed to a one time rise in inflation included a supplemental motor vehicle & property tax, cell-phone communication tax, rent (property) tax on firms up from 15% to 20%, VAT hike from 15% to 17%, VAT on durables & vehicles up from 23% to 25%, higher sin taxes (alcohol, tobacco) & lump sum taxes, and higher utility rates

roughly 13 points. This view would then have to accept that a significant proportion of the excess inflation was not due to excess demand or demand pull factors, but due to cost push ones. The distinction is important because inflation inertia has been singled out as being very strong in Turkey. Inertial inflation is the tendency for the inflation rate, once underway, to persist on its own inertia even when the original instigator of inflation is removed. Therefore, if one considers the impact of late 1999 fiscal measures, then one is forced to conclude that inflation inertia was lower than suggested. In other words, had the aforementioned fiscal measures been adopted in October 1999 instead of late November, actual inflation would have come much nearer targets in 2000. Another important factor affecting the rate of inflation had been the strength of the US Dollar. The loss of value of the Lira against the US Dollar is key because the currency figures prominently in raw material prices as well as various contracts within the country. US\$ rose by 24.4% against the Lira, while euro rose by 14.1% during 2000. A greater weight for the US\$ was not a desirable factor in Turkey's euro-dollar currency basket because roughly 53.6% of Turkish exports are to Europe. In any case, a valid question to ask is whether the excess of inflation over devaluation in 2000 in Turkey compared poorly with first year disinflation efforts in past exchange rate based stabilization experiences. Turkey's performance does not appear to compare poorly as illustrated by table 2 below.

Balance of payments developments were, thus, worrisome in 2000. The current account deficit as a percentage of GNP exceeded the IMF plan projection (1.8% of GNP) by a full three points. External factors were important determinants in the weakening of the balance of payments

Table 2 – Brazil: Inflation and Exchange Rate Path 1994 -1999

R/US\$ % change	1994	1995	1996	1997	1998	1999
Jan	42.93	-0.71	0.65	0.64	0.63	71.36
Feb	38.94	1.07	0.65	0.51	0.61	-1.93
Mar	43.33	5.89	0.33	0.91	0.63	-15.52
Apr	42.58	2	0.45	0.27	0.57	-2.97
May	44	-1.31	0.6	0.64	0.6	3.31
Jun	41.15	1.55	0.59	0.58	0.53	1.92
Jul	-2.76	1.74	1.01	0.6	0.55	2.85
Aug	-5.45	1.5	0.23	0.79	1.17	6.38
Sep	-3.73	0.41	0.46	0.4	0.64	0.99
Oct	-0.94	0.89	0.62	0.6	0.75	0.57
Nov	0.47	0.48	0.52	0.59	0.71	
Dec	-0.24	0.59	0.61	0.63	0.55	
IGP-DI % change	1994	1995	1996	1997	1998	1999
Jan	42.19	1.36	1.79	1.58	0.88	1.15
Feb	42.41	1.15	0.76	0.42	0.02	4.44
Mar	44.83	1.81	0.22	1.16	0.23	1.98
Apr	42.46	2.3	0.7	0.59	-0.13	0.03
May	40.95	0.4	1.68	0.3	0.23	-0.34
Jun	46.58	2.62	1.22	0.7	0.28	1.02
Jul	5.47	2.24	1.09	0.09	-0.38	1.59
Aug	3.34	1.29	0	-0.04	-0.17	1.45
Sep	1.55	-1.08	0.13	0.59	-0.02	1.47
Oct	2.55	0.23	0.22	0.34	-0.03	1.89
Nov	2.47	1.33	0.28	0.83	-0.18	
Dec	0.57	0.27	0.88	0.69	0.98	
Inflation in excess of Devaluation	39.3%	-0.1%	2.2%	0.1%	-6.0%	-28.3%

Source: IMF, Reuters

accounts. A tripling of oil prices from 1999 was one culprit. The strength of the US\$ vis-a-vis the Euro also posed problems as the Lira had been fixed against a currency basket composed of one Dollar and 0.77 Euros. The weight of the US\$ rose from about 56% at the start of 2000 to 61% in November 2000, hurting net exports to Europe which account for half the country's trade. The strength of the US\$ vis-à-vis the Lira could also be cited as a culprit for higher than targeted inflation since Turkey has a highly dollarized economy. A comparison of Lira interest rates, the inflation rate against TL/US\$ path clearly displays the strong link between these variables. Domestic factors which contributed to the deterioration of the external accounts included a real exchange rate appreciation as inflation exceeded the annual devaluation rate of the Lira vis-a-vis the currency basket by a double digit margin (higher energy prices also drove up trading partners' inflation rates, but a real appreciation of the Lira occurred nevertheless). A degree of the current account worsening could also be attributed to pent-up demand from the high interest period in 1999. National income growth certainly exceeded targets (GNP 5.5%), with GDP rising by 7.2% and GNP by 6.1% year-on-year despite a construction moratorium pending new earthquake safety regulations, reduced refinery output³⁶ in 2000H1, and the financial crisis in the latter half of the final quarter of 2000. Finally, since a current account deficit represents an excess of national spending over saving, and that the budget deficit in 2000 was roughly 10% of GNP despite a record rise in the country's primary surplus (6.2% of GNP)³⁷, the combination of high public sector dissaving with lower private sector saving culminated in a record current account deficit. The crucial point here again is that on the eve of the financial sector turmoil in November 2000, foreign exchange reserves of the Central Bank of Turkey stood above end-1999 levels at about US\$ 24 billion. Furthermore, the level of foreign exchange reserves had hardly budged throughout the year. In other words, the large current account deficit in 2000 had already been financed without a decline in international reserves.

Two capital account problems surfaced prior to the outbreak of the crises. The most crucial was the rise in US interest rates as inflation worries set in. Identification of Turkey, alongside Argentina, as one of the countries with external debt service of around US\$ 20 billion³⁸ in 2001 did not help matters, either. There were concerns that international capital markets would not be receptive to provide the requisite financing to these countries because of a poor global economic climate.

³⁶ A major oil refinery had been operating at below capacity until September 2000 because of damage from the massive earthquake of August 17, 1999. Refinery output apparently accounted for roughly 14% of the industrial production index. Once refinery output was shorn away from the industrial production index a much faster pace of economic growth emerged.

³⁷ This figure is for the Central Government including privatization receipts, transfers from the Central Bank, and interest receipts. Excluding these items gives a primary surplus of 4.6% of GNP for the Central Government. The more crucial consolidated public sector primary balance was 2.8% of GNP in 2000 in comparison to -2% in 1999.

³⁸ Total external debt repayment for Turkey in 2001 was estimated at US\$ 24 billion with half of this amount being a public sector burden. 2001 was a spike year for external debt service.

Growth related indicators, on the other hand, were hardly a factor in the path to the crisis. The one indicator with cause for concern here was the burst stockexchange bubble. The speedy rise and equally sharp decline in the national stock index during 2000 provided a lackluster background. It is doubtless that the Central Bank should not have idly sat by and watched a ten-fold rise in ISE-100 between 1999 and start of 2000. The mettle of a Central Bank clearly lies, in part, in the courage to point to 'irrational exuberance'. The problem naturally is the aversion to tackling a bubble on the upside when all its effects are positive, and all parties gain.

Politics carried a heap of negative factors as well during the year. Uncertainty due to the alleged poor health of the Prime Minister, suspicion that the Nationalist Action Party (MHP) sought the prime-ministership at the earliest opportunity, fears over the impact of a likely closure of the Virtue Party³⁹ on election prospects are just a sprinkling of market concerns during much of the year.

A legitimate question at this juncture is whether Turkish policymakers delivered on their 'fiscal agreement', or pledges à la Guidotti and Vegh (1997), in the period between the start of Turkey's stabilization plan in January 2000 and its demise in February 2001. If the fiscal benchmarks are the performance criteria set by the IMF –such as the overall balance, the primary balance –, then the answer is a resounding affirmative as attested to by table 4. If the measure of credibility are not these indicators, but, say, privatization⁴⁰ – and, especially sale of Turk Telekom –, then the answer is negative⁴¹. Good-faith

³⁹ Virtue Party was finally shut down in 2001H1, but the act did not lead to a general election.

⁴⁰ The issue of privatization took a level of significance out of all proportion to its expected contribution to fiscal rectitude. The target for privatization receipts in 2000 was set at US\$ 7.6 billion, or 3.5 % of GNP (If one was nitpicking, one could point out that 3.5% of GNP in 2000 actually came out to US\$ 7.1 billion). Actual sales came to US\$ 5.5 billion, but privatization revenues during the year came to US\$ 3.5 billion. The discrepancy lay in a delay in the collection of a GSM license fee. This was finally paid fully in February 2001, just weeks before the devaluation. The shortfall in sales was therefore roughly 1% of GNP, whilst the shortfall in cash revenue was about 2% of GNP. Privatization in 2000 surpassed the sum of fifteen years of privatization receipts despite delays in the sale of enterprises active in the energy sector, as well as delays in the partial sales of Turkish Airlines and Turk Telekom. An argument could be made that despite the record receipts, privatization was half-hearted in 2000 because it did not include alleged fiefs of underemployment –with politicians using employment at SEEs as a tool of political patronage – such as Turk Telekom and public sector banks.

⁴¹ The erosion of credibility despite exceptional overall fiscal performance may be attributed, in part, to a shortfall in meeting the plethora of demanding program criteria set by the IMF with inflexible deadlines (in fairness to the IMF, that it sought a strict timetable is understandable after numerous slip-ups in earlier years). A concrete example is the calendar for the partial sale of Turkey's telecommunication monopoly. A twenty percent stake had been originally planned to be sold to a 'strategic' investor by September 2000. The delay in the auction process due to no interest from foreign buyers led to a deferral in the disbursement of miniscule credit tranches from the IMF. A lack of interest from foreign investors was interpreted as being due to managerial constraints which would await any buyer when, in fact, the principal impediment to a sale may have been the poor global telecommunications market sentiment as attested to by numerous auction cancellations in various countries in this period. Whilst the response to this may be that the sale could still have gone through if the authorities had assigned a lower minimum asking price, the desirability of a 'firesale' is highly questionable. The essence of the criticism here is that the IMF plan had too much 'micromanagement', trying to do too many things at the same time. Ironically, the IMF was satisfied with

efforts to deliver on reform pledges was undeniable, however, as epitomized by governmental attempts to speed up passage of laws through the use of so-called ‘decrees with the force of law’ which backfired because of Presidential, and later, judicial vetoes of these decrees on constitutional grounds. Public sector bank reform act was possibly the highlight of legislation delayed as a result of these manoeuvres because of the postponement of World Bank loans tied to this act and intended for financial restructuring⁴².

A bright spot in economic developments was therefore the fiscal performance in 2000. Turkey, of course, exceeded the year 2000 fiscal benchmarks set under the program agreed to with the IMF⁴³. The overall public sector balance target had been 12.6% of GNP. A budget deficit of 10.2% of GNP, a public sector borrowing requirement of 11% of GNP were the outcomes. Indeed, the superlative fiscal performance in 2000 and, of course, a relatively high current account imbalance, led to the adoption of more ambitious fiscal targets for 2001 than was intended when the scheme was devised in 1999. The 2001 overall fiscal balance target had originally been 6% of GNP (according to plans made in 1999), but was lowered to 3.4% of GNP in October 2000 with the unveiling of the 2001 budget proposal. In hindsight, it appears that much more weight should have been put to establishing fiscal balance than pegging the exchange rate in order to lower inflation, but the peg served a second purpose by acting to lower budgetary interest expenditures – as a result of a lower cost of borrowing to the Treasury – and hence contributing to establishment of fiscal order.

The reform fatigue argument, in the spirit of Talvi (1996), that the authorities were lulled into a false sense of security because fiscal targets had been exceeded superficially fits with Turkey’s experience in 2000. Although there is no denying that there was a consumption boom in 2000 in Turkey, it is also a fact that massive revenue raising measures were actually introduced at the end of 1999⁴⁴. So, the rise in tax revenues was not merely because tax revenue is an increasing function of consumption.

The mechanics of currency crises are straightforward. A reversal of capital flows is the instrument for the demise of exchange rate-based stabilization plans. This typically occurs after the accumulation of a large amount of short term foreign capital inflows which may have been motivated by high domestic interest

the progress of reforms to a sufficient degree that it looked likely to release the fourth and fifth credit tranches together just before the November crisis. The lesson here may be that once credibility is undermined (viewed from the perspective of the markets by the IMF’s decision to delay additional credit tranches), it becomes far harder to re-establish. From one corner, IMF could erode the plan’s credibility by delaying fresh loans, but it could not re-establish credibility by a mere declaration of its satisfaction and extension of loans withheld. From the other corner, the authorities’ half-hearted response to their failure to abide by their pledge of a Turk Telekom sale did erode credibility, and no amount of managerial concessions could re-establish it. A seeing is believing attitude may have reigned in markets.

⁴² FSAL amounting to roughly US\$ 1.5 billion was to be disbursed in two equal tranches.

⁴³ One could argue with some legitimacy that perhaps more was necessary on the fiscal front, but it is undeniable that Turkey’s fiscal performance far outshone comparable episodes such as Brazil.

⁴⁴ Revenue raising measures targeted a fiscal adjustment of 5.1% of GNP, whilst expenditure cuts were expected to yield savings of 0.8% of GNP in 2000 in comparison to 1999.

rates. The speedy withdrawal of funds may then render the banking system illiquid⁴⁵. Liquidity provision by the Central Bank does not improve matters because this simply fuels the demand for foreign exchange. A vicious circle whereby Central Bank efforts to relieve the banking sector gradually erodes Central Bank's foreign exchange reserves is set in motion, as was the case in Mexico in 1994. Turkey went through an identical vicious circle in the period between November 22nd and December 6th. The difference in Turkey was that there had not been a surge in capital flows beforehand. That provided small comfort because as Obstfeld and Rogoff (1995) point out, expectation of an imminent devaluation will trigger a speculative attack against a currency, with both foreign and domestic capital rushing to exit the local currency and the country, rendering banks illiquid.

Against this backdrop, it is useful to recall the origin of the November crisis. Specifically, other banks cut lines to Demirbank because they believed it had become poor credit risk. This credit assessment could not be based on asset composition because Demirbank had a significant bond portfolio⁴⁶. The judgement was due to the short-term nature of its liabilities. Thus, other banks either suddenly judged Demirbank to be reckless, and/or came to anticipate higher interest rates in the near future. The question then must be why in fact banks expected higher rates. Transition in the exchange rate regime in mid-2001 could have been a culprit under various relatively unlikely assumptions⁴⁷. Higher interest rates at that juncture could not be tied to the current account deficit because CBRT international reserves had not declined. Nor could higher rates be expected due to a possible breakdown of the coalition. Coalition parties simply had little to show to the electorate at the time. Elections would have been unlikely before attainment of relatively low inflation; say less than 20%. The source of an interest rate hike expectation lay in large part in a new prudential regulation governing currency positions, in our view.

The November Crisis

The immediate origin of the November financial turmoil in Turkey was the cutting of credit lines⁴⁸ by other banks to Demirbank (ninth largest bank at the time in terms of asset size). There were persistent rumors that this was a concerted effort, a conduct of predatory competition. By cutting credit lines to this institution, other banks would have effectively forced it to raise funds by selling a portion of its securities holdings which the others could then buy at bargain prices. Creditor institutions defended themselves by

⁴⁵ Central Bank of Republic of Turkey (CBRT) continued to sell foreign exchange and provide Liras via open market purchases between November 22 and November 30. A new ceiling on net domestic assets was announced on December 1st, set at the level reached on November 30th. This policy was probably pursued with the belief that once foreign capital leaves the system, there should not be any more demand for foreign exchange.

⁴⁶ Sovereign debt sustainability had yet to become an issue at the time.

⁴⁷ Long term Lira interest rates moved parallel to the forward discount rate of the Lira vis -a-vis the US\$ in the first nine months of 2000. Turkey's exchange rate regime at the time meant that the devaluation rate of the Lira vis-vis the currency basket would slow down (illustrated by the thick downward sloping line in figure 10). A decline in nominal interest rates was thus to be expected.

pointing to the large short-term funding structure of Demirbank. It had a serious maturity mismatch, depending too heavily on overnight repo financing, while its assets were dominantly government bonds bought at relatively high prices (low yields). Demirbank's illiquid state caused upward pressure on interest rates. Foreign banks which had been lending on the overnight market withdrew funds as well after sensing these problems, causing further upward pressure on interest rates. Eventually, what had started as a lack of confidence amongst the banks grew into a lack of confidence about the whole economic program.

During the November crisis, CBRT allowed foreigners to buy foreign exchange by removing its net domestic asset (NDA) ceiling and providing liquidity to the markets. The idea was that if all foreign exchange demand by non-residents were satisfied, then demand for foreign exchange should cease⁴⁹. CBRT reimposed a new NDA ceiling on December 1st to avoid a complete meltdown in international reserves⁵⁰. Financial turmoil did not abate. Only an emergency loan from the IMF on December 6th, an informal blanket guarantee on interbank lending and guarantee to all creditors (including to international parties), and takeover of Demirbank by the government finally halted the crisis on December 6th.

OECD (2001) states that the trigger for the November crisis was the financial distress of some mid-sized banks which had positioned themselves for a continued reduction in interest rates through 1-2 year bond holdings financed by short-term funds. The predicament of Demirbank – taken over by the authorities on December 6th 2000 - in particular, was the focus of attention during this period. This bank relied in part on repo funding to finance its holdings of government securities reportedly amounting to about US\$ 5bn or 18% of outstanding (traded) government debt stock at the time. The fact that repo transactions were an off-balance sheet item according to accounting rules had, to a degree, disguised Demirbank's reliance on short-term funding. Indeed, financial tables submitted to and presented by Banks' Association did not disaggregate off-balance sheet items until September 2000. Disaggregate off-balance sheet data for Demirbank showed repo funding of TL 2,207 trillion as of September 2000, whilst the size of total assets on-balance sheet were TL 3,163 trillion.

Demirbank's difficulties coincided with a period when banks' regular foreign currency positioning was altered in scope and timing. In scope because of tighter rules, and in timing due to the Ramadan holiday in

⁴⁸ CBRT governor noted that banks' free deposits at CBRT had risen on November 22nd to TL 1.1 quadrillion as shown in figure 9 despite overnight interbank rates of up to 250% simple.

⁴⁹ A distinction between residents and non-residents was of little use ultimately because lack of confidence in the local currency and the financial system is exacerbated by capital flight. Rumors were indeed rife that deposits could be frozen, for instance. Restoration of confidence in the economy thus requires measures which halt capital flight whatever its origin.

⁵⁰ As Krugman (1979) notes Central Banks actually have two-tier reserves. Primary reserves which investors know will be committed to the defense of the exchange rate and a secondary reserve facility which may or may not be used. CBRT behavior during the period between November and February showed that the Central Bank frowned upon running a short currency position itself, and would sell foreign currency so long as its foreign currency position was still positive.

December forcing financial activity to be concluded earlier than usual. Moreover, a quarterly report issued by the Banks' Association in September became the center of a public argument about the extent of the foreign exchange open position of the Turkish banking system. Banks' Association report calculated the on-balance sheet difference between foreign exchange assets and foreign exchange liabilities of the banking system at US\$ (19.1) billion as of June 2000. This figure had been US\$ (13.2)⁵¹ billion at the end of 1999. It was clear, therefore, that the banking system had vastly increased its open position following the adoption of the exchange rate based stabilization scheme. One may look at the rise in the net open foreign currency position from two perspectives. First, banks chose to raise foreign exchange funding to finance Lira lending because of the comfort (moral hazard) afforded by a variant fixed exchange rate regime. The other side of the mirror

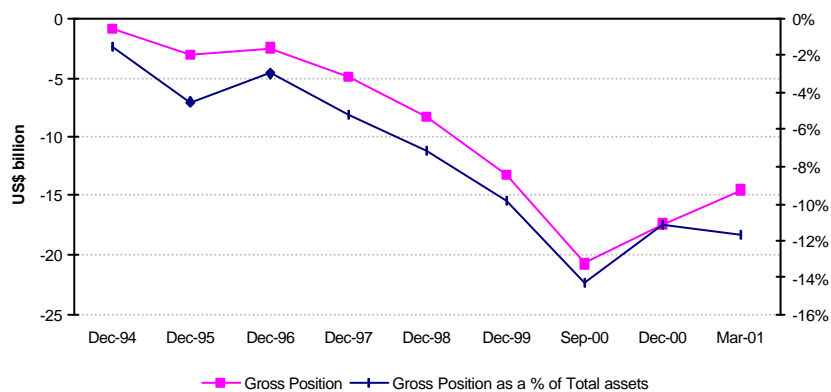
was that retail customers, to cite one group, were loath to borrow in foreign currency with memories of 1994. Second, currency substitution rose to historic heights in this period, despite expectations to the contrary, as interest rates declined. In the same period, the rise in the banks' net foreign exchange open position clashed with the phasing in of stricter rules regarding open positions. Specifically, the limit for the ratio of net foreign exchange open position to net worth⁵², a

Table 3 - Banking Sector Gross Short Foreign Currency Position

	FX (US\$ bn)		Total	FX	FX (- is a short position)
	Assets	Liabilities	Assets	Position	Position as % of Total assets
Dec-94	-	-	51.9	-0.8	-1.5%
Dec-95	-	-	68.4	-3.1	-4.5%
Dec-96	37	40	83.4	-2.5	-3.0%
Dec-97	43	48	94.6	-4.9	-5.2%
Dec-98	47	56	117.4	-8.3	-7.1%
Dec-99	51	64	133.5	-13.2	-9.9%
Sep-00	51	72	144.1	-20.7	-14.4%
Dec-00	54	71	155.2	-17.3	-11.2%
Mar-01	51	65	123.3	-14.4	-11.7%

Source: TBB

Figure 2 - Banking Sector Gross FX Position



Source: TBB

⁵¹ This had earlier been reported as US\$ (12.2) billion.

⁵² Net open position is defined as total asset + forward purchases – total liabilities + forward sales in foreign currency valued at-end period central bank buying exchange rates (which in turn is the average of the bid quotations provided by the top ten financial institutions in terms of transaction volume in the interbank FX market). Exchange indexed transactions alter the picture somewhat as only 50% of these were permitted to be included for purposes of defining an open position prior to mid-1998, but 100% in the following period.

prudential rule, was gradually made stricter. This was announced to be 20% by June 2000 on a consolidated group basis. The penalty for over-limit open positions had been an 8% liquidity requirement. The penalty was to be raised to 100% by July 2000 for banks individually exceeding the threshold and was publicly announced by the CBRT on May 5th, 2000. The phasing in of this requirement was later postponed until year-end. The calendar for the phasing in of net open position rules suggests that the authorities were trying /planning to prevent banks from inviting greater moral hazard due to the pursual of a fixed exchange rate regime.

The Banks' Association report was thus met with shock and trepidation as the extent of banks' foreign currency exposure came to be questioned because of improper/ questionable hedge contracts. CBRT – a party to the open position argument in September ⁵³- emphasized that the definition of the net open position rule allowed for the inclusion of forward currency contracts (currency hedges amounted to US\$ 11 billion in June 2000 according to the CBRT) as well as foreign exchange indexed Lira loans (US\$ 2.5 billion). CBRT estimated banks' net open positions at US\$ 5.6 billion by end-September 2000, of which US\$ 4.4 billion was due to the SDIF banks. The net foreign currency open position of the rest of the system was thus a mere US\$ 1.2 billion with banks' net worth at US\$ 6.2 billion according to the Central Bank governor.

To quote OECD (2001) in regard to exchange rate exposure: “The new bank supervisory authority (BRSA) was a catalyst in revealing how deep-rooted the problems have been and how slowly they have been addressed. But, having become operational only a little more than two months prior to the crisis, it had not been able to forestall the development of these problems”. The perception of the BRSA was therefore more in terms of a hound dog rather than a watchdog at the time. Nervousness about BRSA investigations has also been blamed by some for undermining confidence in the banking system.

Table 3a- Net Foreign Assets of Commercial Banks*

US\$ million	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Net Foreign Assets	1,799	2,164	1,340	5,454	4,551	1,343	-888	-3,019	-3,165	-5,883
Foreign Assets	5,491	8,549	10,719	8,724	9,722	9,452	10,553	11,710	14,956	17,140
Foreign Liabilities	3,692	6,385	9,379	3,271	5,172	8,110	11,442	14,728	18,121	23,023

Source: CBRT

* This table simply shows liabilities to non-residents and assets abroad.

⁵³ CBRT, Governor's press release, 21 September 2000.

The February Crisis

Alper et al (2001) blame the excess liquidity needs of public sector banks for the February crisis⁵⁴. This diagnosis confuses cause and effect, however. We believe that the origin of the February financial turmoil was the desire by local private sector banks to close their foreign currency open positions in anticipation of a crisis (devaluation). The local banks had lost trust/confidence in the economic program especially after the November crisis, and believed (despite additional IMF loans amounting to US\$ 7.5 bn in November 2000, bringing the total IMF package to US\$ 10.4 bn) that they needed to close their open positions gradually, but surely. The local banks precipitated the February crisis themselves by rushing to buy foreign exchange from CBRT.

The spark that triggered wholesale panic amongst banks was, however, a quarrel between the President (which is a symbolic post) and the Prime Minister. The President had asked for a regulatory agency attached to it to investigate state banks. The Prime Minister pointed out that a new independent bank regulatory agency⁵⁵ had been created in September 2000 (with IMF support) anyway and that this agency was autonomous and had sole purview over the banking sector. The President then accused the government of not doing enough to combat corruption⁵⁶. The Prime Minister then left a national security council meeting that he was supposed to have attended on the morning of Feb 19th, and held a press conference stating that there was a very serious crisis at hand.

Banks then panicked, and registered to buy US\$ 7.5 billion⁵⁷ from the Central Bank on Feb 19th. That day was a public holiday in the US⁵⁸, however, and so CBRT told the banks that they could only get foreign exchange the next day⁵⁹ (because CBRT reserves are probably held in part as US treasury bills). On February 20th, banks could not come up with sufficient Liras to buy Dollars from the Central Bank⁶⁰. A large part of the transactions of the 19th were thus effectively cancelled. CBRT had pursued tight monetary

⁵⁴ “Excluding liabilities to the CBT, three state banks (Halk, Ziraat, and Emlak) and the SDIF banks on March 16, 2001 had overnight liabilities (repurchase agreements and deposits of commercial bank and nonbank customers) of some TL 13¾ quadrillion”, Letter of Intent to the IMF, May 2001.

⁵⁵ BRSA was headed by an ex-minister of finance who was reputed to be very honest; his last name translated to English is 'clean hands'.

⁵⁶ Allegedly literally threw a copy of the constitution (the book itself) to the feet of the Prime Minister.

⁵⁷ Foreign exchange sales by the CBRT as of 2:30 pm on February 19th amounted to roughly US\$ 4.8 bn with the settlement date posted as Tuesday according to local bank pages on Reuters. It surfaced the next day, in fact, that total foreign exchange demand had been US\$ 7.5 billion, and that the Central Bank had not disclosed 'large' denomination transactions.

⁵⁸ The positive aspect of this was the time gained, but the negative was the rush by banks to register to buy foreign exchange just in case there was a devaluation because they did not have to pay for it until the following day.

⁵⁹ CBRT had official reserve assets amounting to US\$ 26,131 million at the end of January 2001 according to data on the IMF website. This included foreign currency reserves amounting to US\$ 24,949 million, of which US\$ 23,467 million was held as foreign securities.

⁶⁰ Moreover, Halkbank – a public sector bank – failed to pay back funds (several hundred trillion Liras) it had borrowed in the overnight market from private sector banks. As a result, the payments system between the banks ground to a halt.

policy, and had not committed the Mexican mistake in 1994, and its own mistake in November of providing liquidity via open market purchases as monetary base shrank due to declines in net foreign assets. The cost of this policy was, unfortunately, quadruple digit interest rates⁶¹ with a devastating impact on the financial system and the economy.

The February crisis had come two days before a large (TL 3.9 quadrillion, or roughly US\$ 6 billion) domestic debt redemption scheduled for the 21st. Uncertainty regarding Treasury's ability to roll-over a portion of this amount made matters worse. Despite the poor background on February 20th, the Treasury managed to raise US\$ 530.1 mn (TL 360 trillion) from a fully subscribed FX denominated bond issue - 21 June 2001 maturity, 12% simple -, TL 1,492.2 trillion from a discounted bond issue with a March maturity (one month) with a weighted average simple rate of 92.43% (144.2% compound). Treasury had also borrowed TL 355.45 trillion from public sector banks in the morning prior to the auction. The conditions of that sale mirrored those in the auction (or the weighted average) as was custom. The minimum simple rate in the auction was 29.12% (33.37% pa compound), and these likely came from public sector banks. The Treasury thus raised a total of TL 2,207 trillion on February 20th. This covered 57% of the redemption of TL 3.9 quadrillion due on the 21st. Full Treasury coffers because of GSM license fees collected earlier in the month meant that debt service the next day would go smoothly.

Foreign currency purchases from the Central Bank continued on the redemption day with CBRT selling about US\$ 1.8 billion by noon. The Central bank did not, however, give up on its quasi-currency board mechanism, creating a significant Lira shortage leading to quadruple digit overnight interbank rates⁶². Foreign currency demand this time around had come from Turkish banks themselves – whereas most foreign currency demand in November was from non-residents-, and the situation was believed to be salvagable if banks changed their stance and sold back the foreign exchange. CBRT governor expressly denied any possibility of a devaluation⁶³.

Turkish authorities finally relented on the maintenance of the crawling peg regime, and permitted the Lira to float⁶⁴, on the morning of February 22nd. IMF immediately voiced its continued support of Turkey's anti-inflation drive despite the setback.

⁶¹ Interbank weighted average overnight simple interest rates, which had stood at 43% on February 19th, rose to 2,058% on the 20th, peaked at 4,019% on the 21st, fell slightly to 1,195% on the 22nd, then to 568% on the 23rd, finally settling at about 100% by end-month.

⁶² By this time, only the CBRT intermediated interbank market functioned because of severe counterparty uncertainty.

⁶³ It later emerged that CBRT had proposed the Lira to be floated as early as February 19th, but the government had demurred.

⁶⁴ Defending a new peg at a lower parity could have been difficult anyway, hence the decision to float the currency rather than devaluing.

In hindsight, the February crisis is unsurprising given questions about the domestic debt burden, fiscal worries emanating from banking sector bail-out costs, and the failure to re-establish full credibility of the exchange rate path as attested to by still high interest rate levels⁶⁵ in both January and February prior to events on February 19th.

Developments in the Banking Sector During the Crises

Time deposits gained a greater share in the composition of total Lira deposits. Time deposits had commanded roughly 81-83% of all Lira deposits in 2000. Share of time deposits had risen to 85% as of March 2, 2001 despite zig-zags through the turmoil since November. It must be noted that had a trend towards depositor panic occurred, then one would have expected to find precisely the opposite pattern to the one depicted. The existence of a roughly blanket guarantee on banking sector liabilities worked in the sense that a depositor rush was avoided. An examination of a period shorter than one month could, however, well show a different depositor behaviour especially plus or minus a few days around the November 26 and February 21 crises⁶⁶.

Foreign exchange deposits held by domestic residents exhibited a similar pattern. In 2000, foreign currency sight deposits had constituted 18% -19% of the total held by domestic residents. This shrunk to 13.8% on March 2001. Time deposits' share rose from 82.1% to 86.2% in the same period. While concerns about liquidity may have been on the minds of depositors, it is likely that they decided to simply take advantage of the relatively higher longer term FX interest rates.

Depositors did herd out of public sector banks to private sector banks following events in November. The main beneficiary of this shift were likely to have been the top tier banks. Private banks increased their share of Lira deposits held by residents from 35.4% to 43.7% of the total. Foreign banks increased their share from 0.4% to 1.5% between March 2000 and 2001. The mirror side of the gains by foreign and private banks was thus a decline in Lira deposits held by residents at public sector banks, from 64% of the total on March 31, 2000 to 54.6% on March 2, 2001. Public sector banks' market share loss largely occurred following financial turmoil in November 2000.

Repo funding (of banks from customers) declined significantly as well during the turmoil. This phenomenon may have largely been due to the fear of customers that off-balance sheet items do not fall under the deposit insurance scheme, or that there may be adverse ramifications in the event of a domestic debt restructuring. Some of these funds may have been channelled to so-called daily deposits which had

⁶⁵ Weighted average cost of borrowing was roughly 65% p.a. compound in January 2001 whilst year-end inflation targets stood at 10-12% for WPI and CPI, respectively.

⁶⁶ Various banks had depositors lining up at branches between February 22 and 24. The brief depositor rush finally ended with the intervention of the week-end period.

been invented by banks to answer depositor qualms about the uncertainty around a government guarantee for repos.

Finally, Lira deposit maturity profile deteriorated with share of 6 and 12 month deposits losing ground to 1-3 month maturities.

The Role and Impact of Currency Risk Regulation

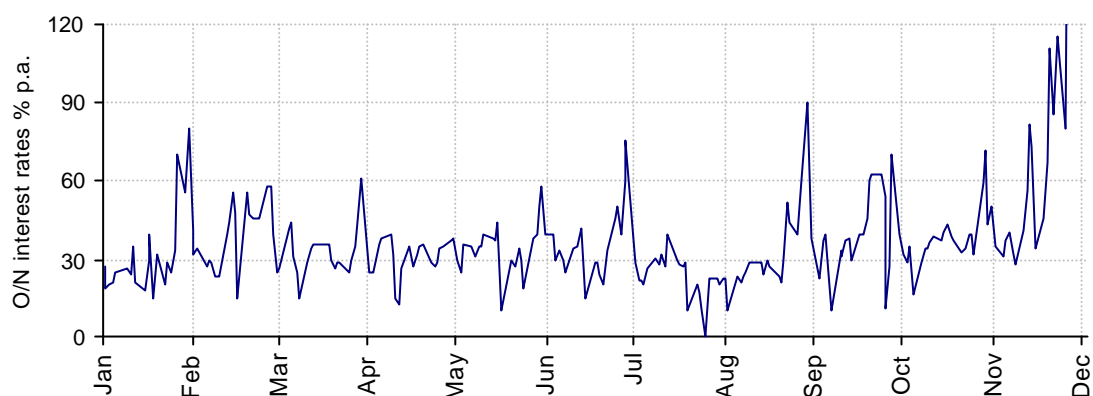
Banks ran short foreign currency positions because of the large gains to be had from purchasing domestic government securities⁶⁷. Policy of state borrowing in local currency together with chronic and rising currency substitution (as measured by deposits shown in table 25) also created a built-in tendency towards short positions.

Financial sector currency risk regulations had gradually become stricter following Lira's massive devaluation in 1994⁶⁸. That crisis had precipitated the failure of three small banks - Impexbank, TYT bank, and Marmara Bank - as a result of losses due to currency mismatch. The introduction of a blanket deposit insurance scheme was the tool used to contain banking failures via depositor panic. Heeding standard IMF prescriptions at the time, the authorities sought to limit banks' currency mismatch by introducing a limit on banks' net foreign exchange exposure (50% of net worth or common equity) effective from April 1996.

Currency risk rules also served the policy goal of controlling capital inflows, and thus money supply growth. In 1998H1, CBRT net foreign assets continued to rise as a result of capital attracted by high domestic interest rates. CBRT engaged in sterilization to limit money supply growth, and thus perpetuated capital inflows by preventing interest rates to decline. At the end of June 1998, on the eve of the Russian crisis, CBRT decided to discourage capital inflows by further limiting the net foreign exchange exposure of Turkish banks from the maximum 50% level at the time to 30% by end-1998 and 20% by end-September 1999. This gradual restriction in the net foreign exchange position regulation was, however, partially moderated by permitting the inclusion of 100% of foreign exchange indexed assets and liabilities in the measurement of open positions. Extant regulations in mid-1998 allowed only 50% of FX indexed items to be included in the measurement of the net open foreign currency position. The alteration of the amount of FX indexed items to be included in open position compliance meant an easing in the open position definition since banks had a long position with regards to FX indexed instruments. The penalty for breach of the net open position limit had been a requirement to place 8% of the amount in excess of the limit as a non-remunerated deposit at the CBRT. This penalty was changed to 100% effective from end-2000.

⁶⁷ Selassie (2000) estimated the annual gain to banks due to income derived from Lira assets via maintenance of open positions at 0.5 % of GNP between 1995-1999 (based on an annual average real 20% return from government securities, and assumption that half of this was retained by banks). The possibility of large capital losses from currency mismatch was apparently reduced in the same period as a result of real exchange rate targeting pursued by the CBRT.

Figure 3 - Weighted Average Overnight (Simple) Interest Rate in 2000 (excluding crisis period)



Source: CBRT

The introduction of stricter currency risk prudential requirements since 1994 brought with it an element of instability that presented itself during the end of reporting periods. Banks regularly engaged in window-dressing activity to comply with the open position regulation by closing open positions at the end of each reporting period to only run short FX positions the very next day. This pattern manifested itself in the behaviour of short term interest rates during the relevant periods as banks have bought FX, squeezing Lira liquidity as illustrated in figure 3. The impact of this behaviour was particularly pronounced in 2000 as CBRT made interest rate control subservient to exchange rate fixing.

A greater restriction on banks' net open foreign exchange positions as a ratio of net worth may have been much more crucial in the eruption of the crisis, and its progress in February, than other issues which were nevertheless underlying sources of tension⁶⁹. Despite stricter rules, banks' gross short positions continued to rise in 2000. Banks used several methods to bypass the spirit of currency risk rules. In one arrangement foreign banks could lend Liras to a Turkish bank under the proviso that the repayment of the loan would be at a prearranged parity. The foreign bank would also charge interest and commission for the scheme. In a second arrangement, Turkish banks hedged their currency liabilities with counterparties to comply with the letter of the net FX open position regulation which sets a maximum threshold for the net position (namely 20% of common equity). In 2000, Turkish banks' gross FX open position was US\$ 19 bn, while the net position was a mere US\$ 5.9 bn. Turkish banks undertook forward contracts with three groups: 1) other local banks (rendering currency risk for the total domestic financial system unaltered) 2) group companies some of which may be exporters 3) foreign banks.

⁶⁸ Refer to Özatay (2000) for an account.

⁶⁹ This is not to deny banks' currency position could, of course, be categorized as a principal source of weakness, and that one could then put forward an argument based on 'weak fundamentals' as per Sachs, Tornell & Velasco (1996).

Thus, a possible premise could be that because banks carried illegitimate forward contracts, or because they circumvented the regulation they became increasingly wary of maintaining their positions.

The new regulation itself focused attention on currency positions, and then seeds of doubt were sown as to how these currency positions would be closed to abide by the new regulation. There was speculation from the middle of June 2000 that banks' rush to abide by the new rules would put pressure on Lira interest rates⁷⁰ as banks sought to close positions⁷¹. This regulation was phased in precisely when a new banking watchdog began operations promising to clean up the sector⁷².

Once the crisis began, the regulation made matters worse because a decline in net worth meant that the permissible maximum amount for net open currency position declined to even lower levels⁷³, thereby creating a vicious circle whereby banks' own desire to close currency positions – both because of a sense of vulnerability were a devaluation to occur and the necessity to comply with prudential rules under tighter supervision - precipitated a currency crisis. One wonders whether the voluntary debt restructuring which allowed banks to get foreign exchange indexed bonds would have steadied the pressure on the Lira earlier. There is no doubt, of course, that after November the credibility of the plan was severely damaged and banks also sought to close their positions gradually without putting undue pressure on the markets. The Central bank, on the other hand, certainly prodded Turkish banks not to demand foreign exchange except to meet immediate external obligations.

Ironically, the strategy to impose stricter currency position regulations was likely to have been in reaction to large capital inflows in other country examples in similar programs. This may have been a miscalculation especially since banks apparently carried more open positions than believed by the officials⁷⁴. In the end, the measure simply did not leave enough time to pass on to the band regime in mid-year 2001. The irony is that a regulation intended to limit risk-taking by the banking sector and thereby create a stronger financial system may have ended up doing precisely the opposite in the short term. Curiously, the rules in place had not prevented a huge rise in short positions. These developments must

⁷⁰ This was largely ruled out because the Turkish Treasury had relatively small redemptions and, therefore, auctions in 2000H2. Indeed, interest rates were forecast to decline as the monthly devaluation rate was programmed to gradually decline.

⁷¹ Various financial structures existed in order to circumvent at least the spirit if not the letter of the pertinent regulations. Two structures are exhibited in the appendix.

⁷² The introduction of the maximum 20% net open position regulation coincided with the creation of a new body to regulate banks, the Banking Regulation and Supervision Agency headed by an ex-Minister of Finance.

⁷³ $(L_{FX} - A_{FX}) / E \leq 20\%$ where E is net worth $(A - L)$, $A = A_{FX} + A_{TL}$, $L = L_{FX} + L_{TL}$ where L_{FX} is FX liabilities, A_{FX} is FX assets, $(L_{FX} - A_{FX}) / E \leq \Omega$ where Ω is the prudential ratio, crisis causes $A \downarrow$, $L \uparrow$, $E \downarrow$. Three possibilities to comply with Ω a) increase E through a paid-capital increase b) lower FX liabilities c) raise FX assets

⁷⁴ A tragicomic evidence for this is accounted for in the banking section of the IMF country report dated May 2001.

have had at least tacit approval from the authorities who were anxious to finance persistent deficits and rollover debt. Policy response to banks' short positions, in the aftermath of the decision to float the Lira, has been to begin state borrowing in foreign currency in the domestic debt market. In effect, it has been the government accommodating the banks rather than the banks meeting the rules.

Conclusion

Policymakers failed to act in three key instances during the run-up to the crises. A crucial error was to remain a mere spectator to a ten-fold nominal rise (a roughly five-fold rise in US\$ terms) in the stockmarket. A second mistake was the lethargy in reacting to a run-away current account deficit. The third, and worst error, was the incapacity to halt a decline in confidence in the banking sector, and, especially between the banks.

A deteriorating external balance, political noise, and emerging market worries set the background for a rise in interest rates at the start of Fall 2000. Stricter rules on currency short positions in tandem with a new regulatory body fed expectations of higher interest rates in this period. Central Bank's slow response to restore confidence between the banks led to the eruption of a banking sector crisis which then grew to a currency crisis. With the erosion in their net worth, banks found it altogether more difficult to meet currency risk rules.

APPENDIX

Table 4 – Outcome of Turkey’s Fiscal Pledges in 2000	31-Dec-00	
	Target	Outcome
I. Performance criteria	Ceiling/ Floor	
¹ Floor on the cumulative primary balance of the consolidated government sector (in trillions of Turkish lira)	4,500	
Adjustment for earthquake-related expenditures	1,343	
Adjusted floor	3,157	4,651
² Ceiling on the stock of net domestic assets of the CBT (in trillions of Turkish lira)	1,650	1,073
³ Floor on net international reserves (in millions of US\$)	10,400	
Adjustment for disbursements of foreign loans in excess of baseline Adjusted floor (in millions of US\$)	10,400	12,379
⁴ Ceiling on contracting or guaranteeing of new external public debt (in millions of US\$)	23,500	19,082
⁵ Ceiling on the stock of public short-term external debt outstanding (in millions of US\$)	1,100	1,000
⁶ Ceiling on the cumulative primary expenditure of the central government (in trillions of Turkish lira)		
II. Indicative targets		
¹ Floor on the cumulative primary balance of the consolidated government sector (in trillions of Turkish lira)		
² Floor for the cumulative overall balance of the consolidated government sector (in trillions of Turkish lira)	-18,750	
Adjustment for earthquake-related expenditures	1,343	
Adjusted floor	-20,093	-16,663
³ Floor on the cumulative primary balance of the consolidated government sector including privatization proceeds (in trillions of Turkish lira)	6,700	
Adjustment for earthquake-related expenditures	1,343	
Adjusted floor	5,357	6,582

Source: Turkey’s Letter of Intent to the IMF, May 2001.

Table 5 - Symptoms and Leading Indicators of Crises

Symptoms	Indicator	Problem Evident	
		in Turkey ?	Trigger for Crises
Overborrowing Cycles	M2 Multiplier	No	Both banking and currency crisis linked to rapid credit growth
	Domestic Credit/GDP	No	
	Domestic and External Financial Liberalization	No	
Bank Runs	Bank Deposits	No	Crises may be started by runs on the banks
Monetary Policy	"Excess" M1 Balances	rule-based	Loose monetary policy can be a trigger for currency crises
Current Account Problems	Exports	No	Overvaluation & a weak external sector linked to currency crises aftermath may lead to a banking crisis due to higher non-performing loans as well as currency mismatch
	Imports	Yes	
	Terms of trade	Yes	
	Real Exchange Rate	Yes	
Capital Account Problems	Reserves	No	Rise may lead to capital outflows Sustainability issues may fuel flight Greater vulnerability
	M2/Reserves	No	
	Real Interest Rate Differential	?	
	World Real Interest Rate	Yes	
	Foreign Debt	No	
	Capital Flight	No	
Growth Slowdown	Output	No	Recessions & burst of asset price bubbles precede financial crises Liquidity crunch may lead to banking fragility May be a sign of declining loan quality
	Domestic Real Interest Rate	No	
	Lending/Deposit Rate Ratio	No	
	Stock Prices	Yes	

Source: adopted from Kaminsky (1999)

Table 6- Money Multipliers

	V3Y	V2Y	V2	VRM	M2/RM	M2Y/RM
1986	3.3	3.5	4.2			
1987	3.1	3.2	4.2			
1988	3.3	3.5	4.8			
1989	3.6	3.7	4.8	13.3	2.8	3.6
1990	4.0	4.2	5.5	16.5	3.0	3.9
1991	3.6	3.7	5.4	16.9	3.1	4.5
1992	3.6	3.7	5.7	17.9	3.1	4.8
1993	4.0	4.2	7.0	19.5	2.8	4.7
1994	3.1	3.2	6.1	20.8	3.4	6.4
1995	3.1	3.2	6.2	22.6	3.7	7.0
1996	2.6	2.7	5.1	23.8	4.7	8.7
1997	2.6	2.7	5.1	24.3	4.8	9.0
1998	2.5	2.6	4.6	24.3	5.3	9.4
1999	1.9	1.9	3.5	19.7	5.6	10.2
2000	2.2	2.2	4.0	21.0	5.2	9.4

Source: CBRT

V3Y - GDP/M3Y, V2Y - GDP/M2Y, V2- GDP/M2

VRM -GDP/Reserve Money

RM - Reserve Money

Table 7 - Domestic Credit as a % of GDP

	Domestic Credit Claims on Private Sector	Private Sector Credits from DMBs*	Consumer Loans from DMBs	Credit Cards	
1986	38.3	18.5	16.6	0.0	0.0
1987	40.2	19.4	17.5	0.0	0.0
1988	34.1	16.0	14.3	0.0	0.0
1989	28.9	15.3	13.5	0.0	0.0
1990	25.2	15.5	14.0	0.0	0.0
1991	26.8	15.7	13.8	0.0	0.0
1992	27.2	16.7	15.4	0.0	0.0
1993	27.3	17.0	15.8	1.8	0.2
1994	28.8	14.8	13.7	0.6	0.2
1995	28.0	17.5	16.5	0.8	0.3
1996	33.7	21.7	20.5	1.1	0.5
1997	35.9	25.2	24.1	1.5	0.9
1998	38.6	22.0	20.6	1.3	1.2
1999	46.6	21.4	19.9	1.3	1.5
2000	48.0	22.8	20.5	3.7	1.7

Source: CBRT

*includes consumer loans and credit cards

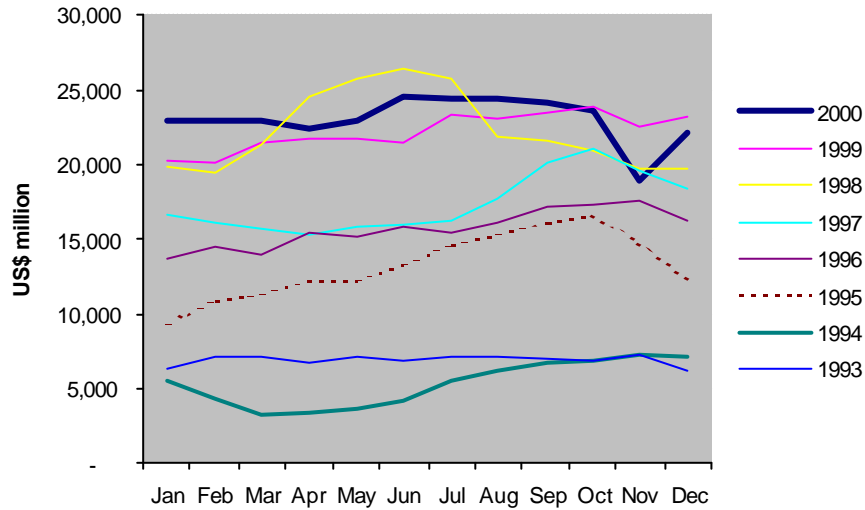
DMBs - Deposit Money Banks

Table 8 - Deposits & Repo as a % of GDP

	TL Sight Deposits	TL Time Deposits	FX Time Deposits	Repurchase Agreements with Customers
1986	1.9	0.1	0.0	
1987	2.2	0.1	0.1	
1988	1.8	0.1	0.1	
1989	2.3	0.1	0.1	
1990	2.0	0.1	0.0	
1991	1.7	0.1	0.1	
1992	1.9	0.1	0.1	
1993	1.6	7.5	12.2	
1994	1.1	9.6	14.9	
1995	1.0	10.3	14.5	
1996	1.2	13.1	15.9	
1997	1.5	13.0	18.5	
1998	1.4	14.7	16.5	4.3
1999	2.0	20.2	22.6	5.3
2000	2.2	16.2	19.4	4.8

Source: CBRT

Figure 4 - Central Bank Foreign Exchange Reserves



Source: CBRT

Table 9 - Money Supply Growth Rate y-o-y % change

	M1	M2	M2Y	WPI 1987 base
Dec-86	67.8	46.0	53.6	25.5
Dec-87	77.4	47.2	59.9	51.6
Dec-88	13.0	54.7	60.4	67.9
Dec-89	99.6	87.4	79.5	62.3
Dec-90	63.6	50.5	52.4	48.6
Dec-91	47.4	63.6	85.0	59.2
Dec-92	81.3	66.3	80.3	61.4
Dec-93	62.3	48.6	76.1	60.3
Dec-94	51.6	106.1	121.2	149.6
Dec-95	69.6	102.9	98.7	64.9
Dec-96	141.4	133.2	121.5	81.9
Dec-97	80.4	96.3	110.3	90.6
Dec-98	81.6	107.2	85.3	51.4
Dec-99	83.3	95.2	98.4	66.5
Jan-00	85.8	88.7	99.3	69.3
Feb-00	103.6	78.1	91.9	70.6
Mar-00	88.9	74.8	89.2	68.6
Apr-00	68.0	69.5	85.7	64.2
May-00	99.0	62.9	79.8	61.3
Jun-00	103.1	62.2	77.4	58.5
Jul-00	84.8	56.1	71.2	53.2
Aug-00	86.5	48.5	65.2	49.7
Sep-00	67.1	40.7	57.9	45.0
Oct-00	71.7	38.0	51.3	41.8
Nov-00	83.9	43.2	46.4	38.8
Dec-00	42.4	33.2	35.5	32.1
Jan-01	50.4	42.5	37.2	28.0
Feb-01	73.3	74.3	63.7	25.9
Mar-01	54.0	69.3	75.5	35.3
Apr-01	54.5	63.6	67.0	52.0
May-01	61.8	67.2	69.7	58.1

Source: CBRT

Table 10 - % of GDP		
	Current Account Balance	Trade Balance
1986	-1.9	-4.1
1987	-0.9	-3.7
1988	1.8	-2.0
1989	0.9	-3.9
1990	-1.7	-6.4
1991	0.2	-4.9
1992	-0.6	-5.2
1993	-3.6	-7.9
1994	2.0	-3.3
1995	-1.4	-7.8
1996	-1.3	-5.8
1997	-1.4	-8.1
1998	1.0	-7.1
1999	-0.7	-5.7
2000	-4.9	-11.2

Source: CBRT

Table 11- % of GDP	
	International Reserves
1986	1.809245808
1987	1.978424335
1988	2.557036798
1989	4.517458339
1990	3.971516398
1991	3.274190216
1992	3.860092629
1993	3.465586435
1994	5.520693701
1995	7.339282594
1996	8.988394899
1997	9.736338976
1998	9.869648375
1999	12.5878608
2000	11.10878296

Source: CBRT

Table 13 - M2/IR	
Nov-1994	
Argentina	3.558
Brazil	3.618
Chile	1.394
India	6.330
Indonesia	4.559
Korea	6.538
Malaysia	2.100
Mexico	9.060
Peru	1.448
South Africa	21.535
Taiwan	4.651
Thailand	3.651
Venezuela	1.364

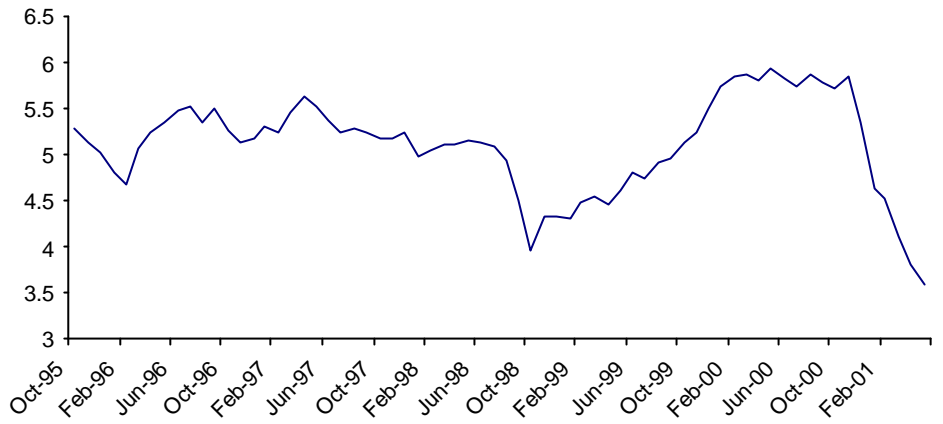
Source: Sachs, Tornell & Velasco (1996)

Table 12 – Lira Money Supply & Central Bank Reserves

US\$ bn	M2 in US\$ terms	CBRT FX reserves	M2/IR
1986	14.84943257	1.3679	10.85564
1987	16.22000196	1.7185	9.438465
1988	14.00071054	2.3073	6.068006
1989	20.66543247		
1990	24.63195936		
1991	23.20607239		
1992	22.94474803		
1993	20.17446882		
1994	15.06555817		
1995	20.60259126		
1996	26.35859578		
1997	27.17272926		
1998	36.93303134		
1999	41.88380408		
2000	45.03355125		

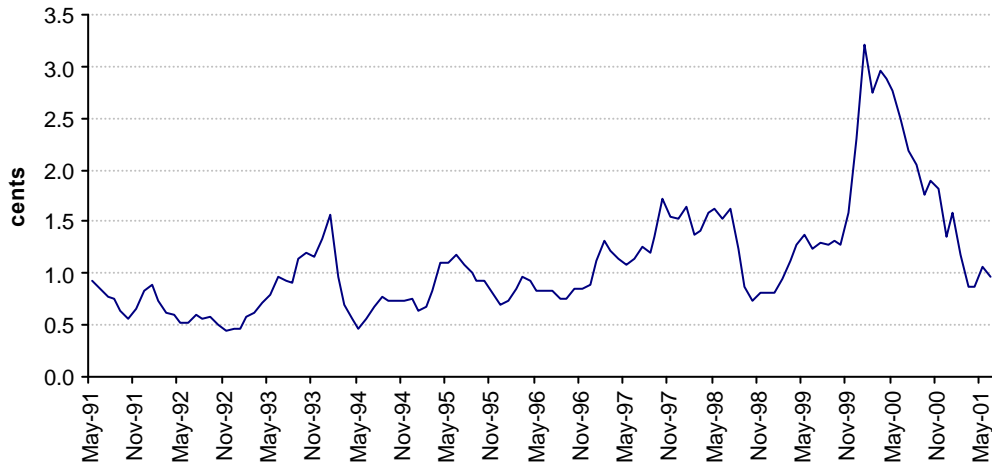
Source: CBRT

Figure 5 - Secondary Market US Treasury bill 1year



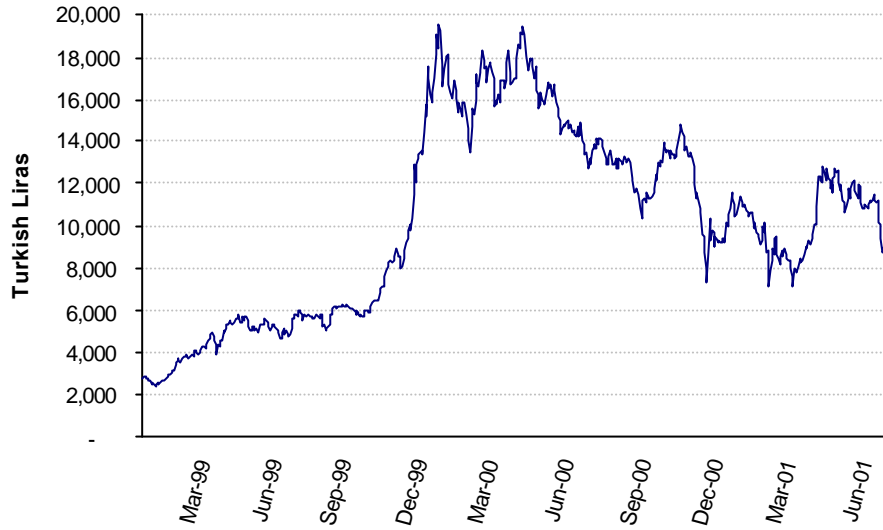
Source: FRED

Figure 6 - ISE 100



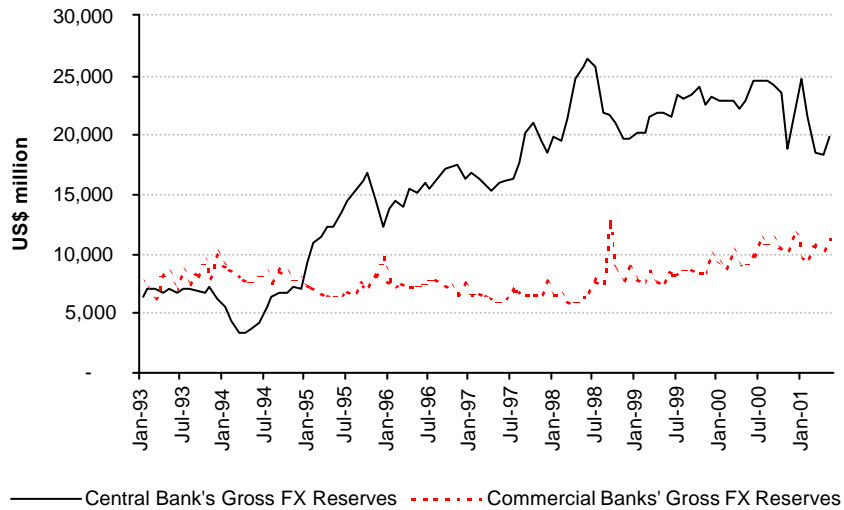
Source: CBRT

Figure 7 - (PRICE INDICES) ISE National-100 TL (01 -1986=1 TL, According to Closing Price)



Source: CBRT

Figure 8 - International Reserves



Source: CBRT

Table 14 - Major Exchange Rate-Based Programs

	Beginning and Ending Dates	Exchange Rate Arrangement	months	years
Brazil 1964	March 1964-August 1968	Fixed exchange rate with periodic devaluations	55	4.6
Argentina 1967	March 1967-May 1970	Fixed exchange rate	40	3.3
Uruguay 1968	June 1968-December 1971	Fixed exchange rate	44	3.6
Chilean tablita	February 1978-June 1982 Feb. 1978-June 1979. ~- June 1979-June 1982:	Pre-announced crawling peg Fixed exchange rate	54	4.5
Uruguayan tablita	October 1978-November 1982	Pre-announced crawling	51	4.2
Argentine tablita	December 1978-February 1981	Pre-announced crawling peg	27	2.3
Israel 1985	July 1985--	Exchange rate policy had four stages 1/		
Austral (Argentina)	June 1985-September 1986 June 1985-March 1986. March 1986-Sept. 1986:	Fixed exchange rate Crawling peg	16	1.4
Cruzado (Brazil)	February 1986-November 1986	Fixed exchange rate	10	0.8
Mexico 1987	December 1987-December 1994 Feb. 1988-Dec. 1988: Jan. 1989-Nov. 1991 : Nov. 1991 -Dec. 1994:	Fixed exchange rate 2/ pre-announced crawling peg exchange rate band	86	7.2
Uruguay 1990	December 1990.~	Exchange rate band with a declining rate of devaluation		
Convertibility (Argentina)	April 1991 -present	Currency board with a one-to-one parity to the U.S. dollar.		
Turkey 2000	January 2000 - February 2001	Pre-announced Crawling peg	14	1.2

Notes: Unless otherwise noted, all pegs are against the U.S. dollar.

1/ on July 1985, the New Israeli Shekel was pegged to the US dollar; in August 1986 the dollar peg was replaced by a peg to a basket of currencies. The second phase of the program consisted of a sequence of devaluations during 1987-early 1989. In January 1989 a band with a fixed central parity was introduced. In December 1991 a crawling band was introduced.

2/ The exchange rate fixing followed some initial devaluations between Dec. 15 and Feb. 29, 1988

Source. Adopted from Calvo and Vegh (1997)

Table 15 - % of GDP	1992	1993	1994	1995	1996	1997	1998	1999	2000
Current Acct Balance	-0.61	-3.58	2.03	-1.38	-1.34	-1.39	0.99	-0.74	-4.89
Trade Balance	-5.15	-7.88	-3.25	-7.78	-5.83	-8.10	-7.11	-5.67	-11.19
Foreign Portfolio Investment	0.49	0.35	0.43	0.45	0.34	0.29	0.29	0.07	0.06
Foreign Direct Investment	1.52	2.18	0.89	0.14	0.31	0.86	-3.35	1.86	0.51
Other Long Term Investment	-0.59	0.76	-0.60	-0.05	0.90	2.53	1.99	0.19	2.14
Other Short Term Investment	0.88	1.70	-3.95	2.19	3.28	0.93	1.30	0.41	2.02
Net Errors & Omissions	-0.75	-1.24	1.36	1.39	-0.98	-1.45	-0.99	1.03	-1.34
Change in Reserves	-0.93	-0.17	-0.16	-2.74	-2.50	-1.76	-0.22	-2.82	1.50

Source: CBRT

Table 16 – Balance of Payments Components									
Argentina	1991	1992	1993	1994	1995	1996	1997	1998	
Current Acct Balance	-0.34	-2.50	-3.44	-4.32	-2.01	-2.52	-4.21	-4.90	
Foreign Portfolio Investment	1.28	1.43	0.88	1.02	1.59	1.97	1.88	1.53	
Foreign Direct Investment	0.25	1.97	14.23	3.25	0.73	3.61	3.72	2.80	
Other Investment	0.06	0.45	-9.40	0.66	0.44	-1.04	0.27	1.45	
Net Errors & Omissions	-0.18	0.07	-0.47	-0.34	-0.79	-0.60	-0.53	0.28	
Change in Reserves	-1.07	-1.43	-1.81	-0.27	0.03	-1.42	-1.12	-1.15	
Brazil	1991	1992	1993	1994	1995	1996	1997	1998	
Current Acct Balance	-0.36	1.56	0.00	-0.21	-2.58	-3.00	-3.72	-4.35	
Foreign Portfolio Investment	0.02	0.49	0.18	0.37	0.49	1.51	2.27	3.75	
Foreign Direct Investment	0.93	3.70	2.81	9.37	1.38	2.69	1.23	2.37	
Other Investment	-0.91	-1.65	-0.84	-8.16	2.28	0.07	-0.46	-2.34	
Net Errors & Omissions	0.21	-0.36	-0.19	-0.08	0.21	-0.26	-0.39	-0.37	
Change in Reserves	0.09	-3.75	-1.99	-1.32	-1.84	-1.07	1.01	0.90	
Mexico	1991	1992	1993	1994	1995	1996	1997	1998	
Current Acct Balance	-4.74	-6.71	-5.81	-7.00	-0.43	-0.66	-2.07	-4.08	
Foreign Portfolio Investment	1.52	1.21	1.09	2.59	2.62	2.60	3.56	2.87	
Foreign Direct Investment	3.87	5.28	7.04	1.75	-2.86	3.95	1.20	-0.34	
Other Investment	2.68	0.79	-0.04	-0.90	4.50	-5.40	-0.39	1.88	
Net Errors & Omissions	-0.73	-0.23	-0.78	-0.78	-1.17	0.02	0.61	0.22	
Change in Reserves	-2.60	-0.32	-1.50	4.34	-2.66	-0.51	-2.92	-0.54	

Source: calculated from balance of payments data from IADB, and GDP data in US\$ terms from World Development Indicators 2000

Table 17 – Capital Market Issues in 2000

Market	Currency	Amount ('000)	USD Equivalent at issue	Coupon	Coupon Type	Announc. Date	Settlement Date	Maturity
Global	USD	1,500,000	1,500,000	11.875%	S/A	10-Jan-00	18-Jan-00	15-Jan-30
EuroEUR	EUR	1,000,000	897,300	9.250%	ANNUAL	26-Jan-00	09-Feb-00	09-Feb-10
Samurai	JPY	35,000,000	309,927	3.500%	S/A	18-Feb-00	15-Mar-00	18-Mar-03
EuroEUR	EUR	600,000	538,380	7.750%	ANNUAL	30-Mar-00	14-Apr-00	14-Apr-05
EuroEUR	EUR	250,000	224,325	9.250%	ANNUAL	26-Jan-00	29-May-00	09-Feb-10
EuroEUR	EUR	500,000	448,650	FRN	QUARTERLY	02-Jun-00	13-Jun-00	13-Jun-03
Global	USD	1,500,000	1,500,000	11.750%	S/A	08-Jun-00	15-Jun-00	15-Jun-10
Samurai	JPY	55,000,000	487,027	3.125%	S/A	16-Jun-00	14-Jul-00	14-Jul-04
Global	USD	500,000	500,000	12.375%	S/A	18-Jun-99	19-Jul-00	15-Jun-09
EuroEUR	EUR	733,060	657,775	8.125%	ANNUAL	09-Oct-97	27-Jul-00	22-Oct-07
Global	USD	750,000	750,000	11.750%	S/A	08-Jun-00	12-Sep-00	15-Jun-10
Samurai	JPY	50,000,000	442,752	0.03	S/A	01-Nov-00	27-Nov-00	27-Nov-03

Source: Serra Grantay

Table 18 - Net IMF Loans

US\$ mn	
Jan-00	-13
Feb-00	0
Mar-00	-25
Apr-00	-13
May-00	292
Jun-00	-25
Jul-00	295
Aug-00	0
Sep-00	-12
Oct-00	0
Nov-00	0
Dec-00	2,852
Jan-01	0
Feb-01	1,415
Mar-01	0
Apr-01	0

Source: CBRT

Table 19 - % Share of consumer goods within total imports

	1996	1997	1998	1999	2000
Jan	-	8.6	8.5	9.5	9.4
Feb	-	10.1	11.9	11.8	11
Mar	-	-	11.6	13.4	12.5
Apr	9.7	10.5	11.9	13.3	13.5
May	10.1	11.3	11.7	12.4	16.3
Jun	10.4	10.6	11.5	12.3	13.5
Jul	9.7	10.4	10.9	10.1	12.7
Aug	10.6	10.2	11.2	11.4	14.2
Sep	10.4	11.4	12.5	12.8	13.4
Oct	11.5	12.7	12.5	13.7	14.8
Nov	10.9	12.6	12.5	14.1	14.7
Dec	-	12	12.2	13.1	12.7

Source: SIS

Table 20 – Economic Indicators

	1998	1999	2000
Durable Consumer Goods Output	10.3	7.6	22.5
Durable Goods Sales	9.5	8.1	23.7
Consumer Goods Imports	-0.1	-5	42
Capital Goods Imports	-3.5	-18.1	29.1
Auto sales	-8.5	-8.5	61.7
Cement Output	1.5	-6.5	5.9

Source: SPO

Table 21 - Balance of Payments Breakdown

	CA	TB	FDI	FPI	Other LT	Other ST	Errors	Total Reserve Change	IMF	Official Reserves
Jan-00	(131)	(837)	(62)	974	30	543	(1,409)	55	(13)	68
Feb-00	(1,077)	(1,366)	(18)	556	(150)	705	365	(381)	0	(381)
Mar-00	(1,063)	(1,580)	60	561	367	(131)	435	(229)	(25)	(204)
Apr-00	(915)	(1,647)	(1)	622	235	1,068	(1,086)	77	(13)	90
May-00	(1,048)	(2,052)	(78)	(142)	487	(125)	1,037	(131)	292	(423)
Jun-00	(1,301)	(2,282)	269	1,128	1,233	(161)	177	(1,345)	(25)	(1,320)
Jul-00	(359)	(2,059)	(702)	2,310	435	(1,384)	(241)	(59)	295	(354)
Aug-00	(746)	(2,515)	65	(247)	477	2,255	(1,368)	(436)	0	(436)
Sep-00	(254)	(1,837)	210	270	(200)	(523)	445	52	(12)	64
Oct-00	(704)	(2,319)	95	27	287	1,127	(905)	73	0	73
Nov-00	(1,512)	(2,386)	291	(4,799)	615	958	(556)	5,003	0	5,003
Dec-00	(709)	(1,497)	(17)	(238)	460	(297)	483	318	2,852	(2,534)
Jan-01	(679)	(1,421)	54	1,169	(121)	1,761	474	(2,658)	0	(2,658)
Feb-01	(94)	(566)	1,544	(3,577)	(121)	(1,106)	(1,349)	4,703	1,415	3,288
Mar-01	226	(106)	(26)	(71)	(265)	(1,314)	(1,058)	2,508	0	2,508
Apr-01	503	5	48	(550)	(575)	112	70	392	0	392
Jan-Oct	(7,598)	(18,494)	(162)	6,059	3,201	3,374	(2,550)	(2,324)	499	(2,823)
Nov-Apr	(2,265)	(5,971)	1,894	(8,066)	(7)	114	(1,936)	10,266	4,267	5,999

Capital Account Components as a % of Current Account Balance

	CA	+ outflow	- inflow	- inflow	- inflow	+ outflow	+reserve hike
		FDI	FPI	Other LT	Other ST	Errors	FX reserves
Jan-Oct	100.0	2.1	-79.7	-42.1	-44.4	33.6	30.6
Nov-Apr	100.0	-83.6	356.1	0.3	-5.0	85.5	-453.2

Source: CBRT

A negative figure for total reserve changes indicates a rise in Central Bank international reserves. Official reserve movements includes IMF funding. Total reserve changes is a net figure.

Table 22 - Turkey's External Debt Profile

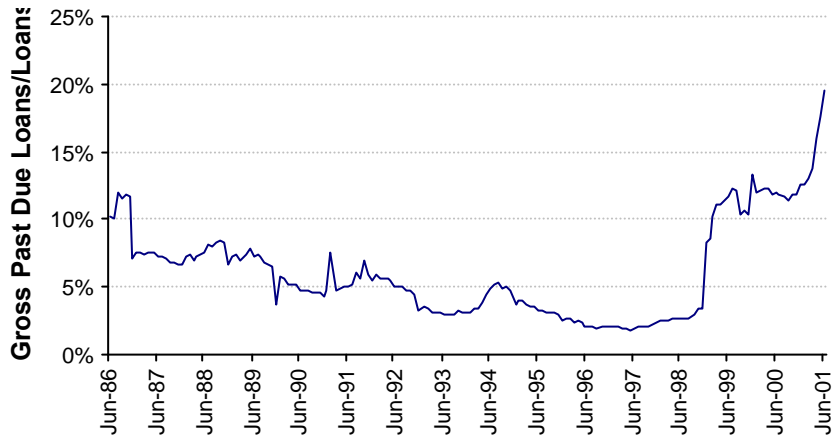
(US\$ million)	1996	1997	1998	1999	2000	2001 Q1
TOTAL OUTSTANDING EXTERNAL DEBT (DOD)	79,642	84,876	96,890	103,344	116,105	112,054
MEDIUM - LONG TERM DOD	62,297	66,829	75,673	79,872	87,193	85,418
PUBLIC SECTOR	51,616	50,228	52,568	54,078	61,141	60,139
PRIVATE SECTOR	10,681	16,600	23,104	25,794	26,052	25,278
SHORT TERM DOD	17,345	18,048	21,217	23,472	28,912	26,636
PERCENTAGE SHARE OF DOD	100.00	100.00	100.00	100.00	100.00	100.00
MEDIUM - LONG TERM DOD	78.22	78.74	78.10	77.29	75.10	76.23
SHORT TERM DOD	21.78	21.26	21.90	22.71	24.90	23.77
GNP						
GNP	183,577	192,376	206,559	185,249	201,188	
AVERAGE US\$ EXCHANGE RATE (BUY RATE)	81,386	152,071	261,045	420,126	623,704	983,450
EXTERNAL DEBT RATIOS (%)						
T.EXTERNAL DEBT / GNP	43.38	44.12	46.91	55.79	57.71	
PUBLIC SECTOR / GNP	28.12	26.11	25.45	29.19	30.39	
PRIVATE SECTOR / GNP	5.82	8.63	11.19	13.92	12.95	
T.EXTERNAL DEBT / T.FX REVENUES (1)	190.78	162.95	166.07	206.08	210.70	
T.EXTERNAL DEBT / T.FX REVENUES (2)	156.26	145.16	154.80	195.41	196.80	
T.EXTERNAL DEBT / EXPORTS (FOB) (1)	342.91	323.20	359.21	388.70	418.03	
T.EXTERNAL DEBT / EXPORTS (FOB) (2)	245.46	259.98	310.35	352.41	366.68	
EXTERNAL DEBT SERVICE / GNP	6.22	6.46	7.99	9.89	10.90	
EXT.DEBT SERVICE / T.FX REVENUES (1)	27.35	23.84	28.30	36.52	39.81	38.45
EXT.DEBT SERVICE / T.FX REVENUES (2)	22.40	21.24	26.38	34.63	37.18	38.52
EXTERNAL DEBT SERVICE / EXPORTS (FOB) (1)	49.16	47.29	61.22	68.89	78.98	61.86
EXTERNAL DEBT SERVICE / EXPORTS (FOB) (2)	35.19	38.04	52.89	62.46	69.28	62.04
INTEREST / GNP	2.29	2.38	2.33	2.94	3.13	
INTEREST / EXPORTS (FOB) (1)	18.08	17.47	17.88	20.50	22.68	22.29
INTEREST / EXPORTS (FOB) (2)	12.94	14.05	15.45	18.58	19.89	22.35
INTERNATIONAL RESERVES (NET) / T. EXTERNAL DEBT	22.12	22.99	21.39	23.40	19.94	17.34
INTERNATIONAL RESERVES (NET) / SHORT TERM DEBT	101.55	108.12	97.68	103.03	80.08	72.94
INTERNATIONAL RESERVES (GROSS) / T. EXTERNAL DEBT	20.43	21.70	20.35	22.43	19.10	16.46
INTERNATIONAL RESERVES (GROSS) / SHORT TERM DEBT	93.82	102.06	92.95	98.74	76.69	69.25
TCMB RESERVES (GROSS) / IMPORT (FOB)	37.82	38.37	43.40	58.28	41.03	
TCMB RESERVES (NET) / IMPORT (FOB)	40.94	40.65	45.61	60.81	42.84	
CURRENT ACCOUNT BALANCE / TCMB RESERVES (GROSS)	-14.98	-14.32	10.06	-5.87	-44.29	-2.97
CURRENT ACCOUNT BALANCE / TCMB RESERVES (NET)	-13.84	-13.52	9.57	-5.62	-42.41	-2.82
CURRENT ACCOUNT BALANCE / GNP	-1.33	-1.37	0.96	-0.73	-4.88	

Source: Treasury Undersecretariat

(*) Excluding Shuttle Trade and Transit Trade

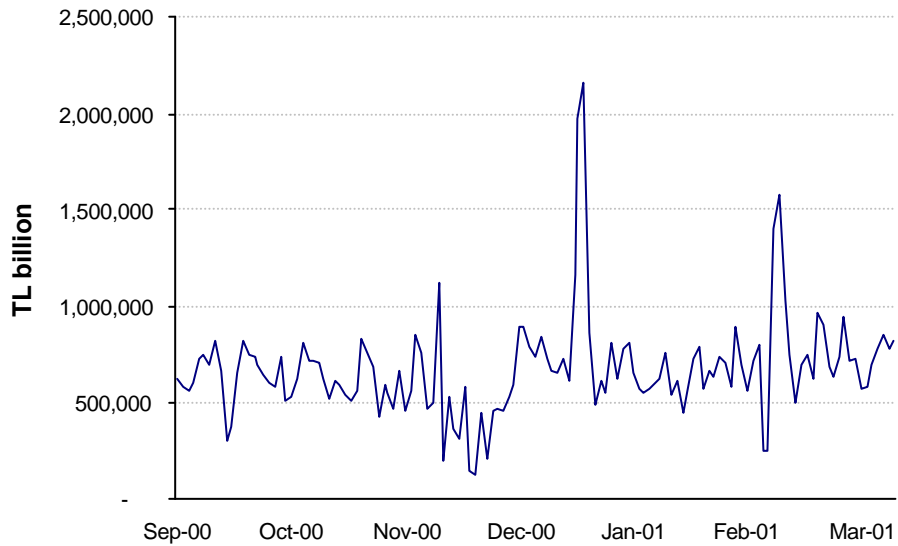
(**) Including Shuttle Trade and Transit Trade

Figure 9 – Past Due Loans of Deposit Banks



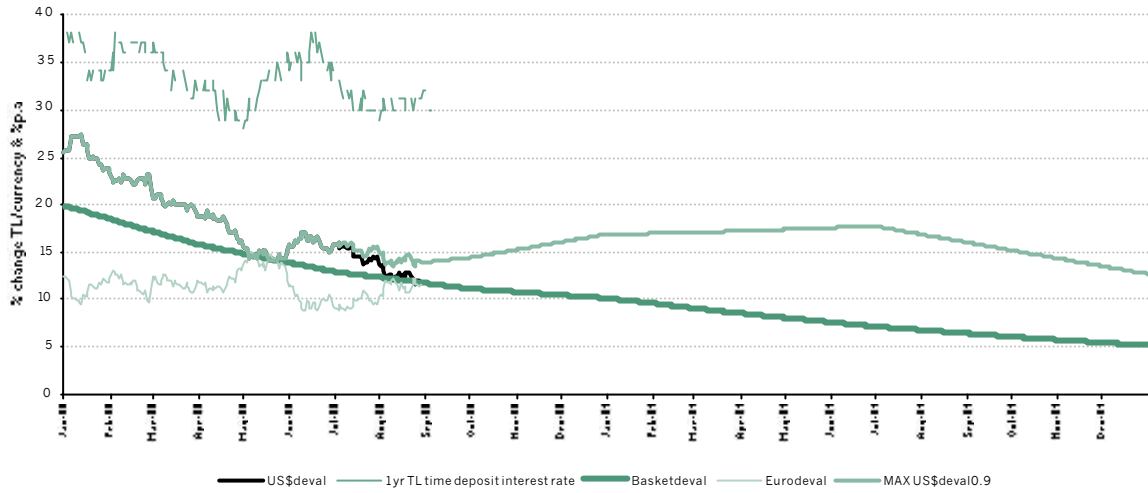
Source: CBRT

Figure 10 - Free Deposits at the Central Bank



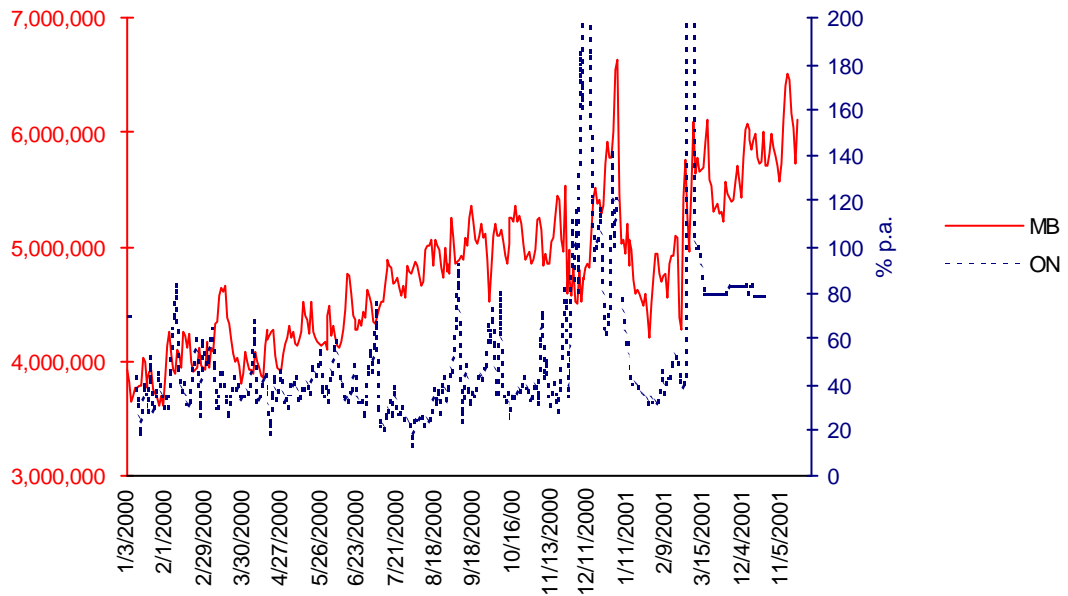
Source: CBRT

Figure 11 - TL Interest Rate Path under Interest Parity Condition



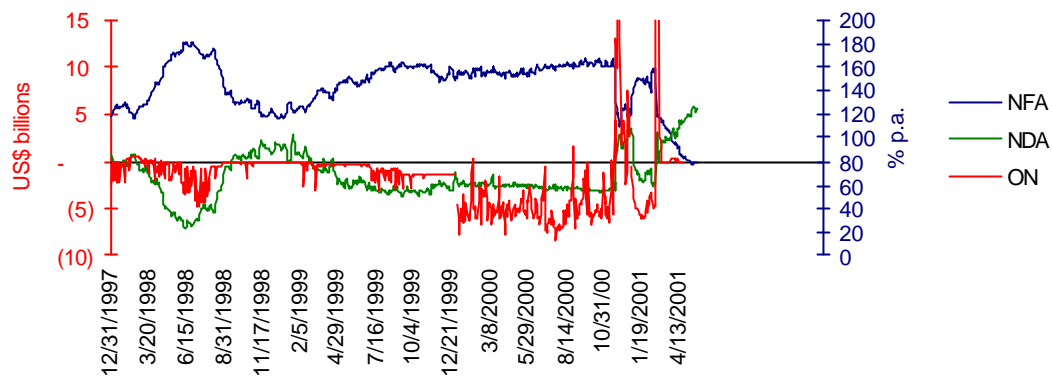
Source: CBRT

Figure 12 - Monetary Base & Interbank Overnight Interest Rate



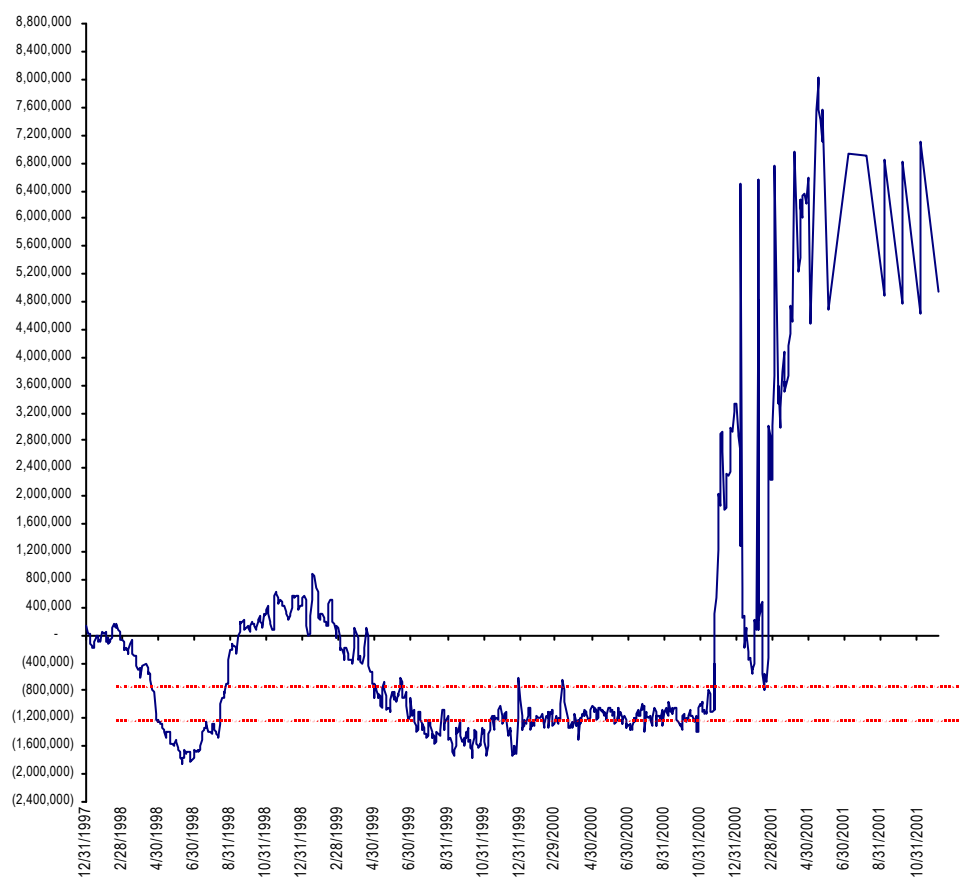
Source: CBRT

Figure 13 - Central Bank Net Foreign & Domestic Assets versus Overnight Interbank Interest Rate



Source: CBRT Note that conversion to US\$ terms following the float of the Lira on February 22nd creates an inaccurate impression with regards to monetary base shrinkage.

Figure 14 - Central Bank Net Domestic Assets

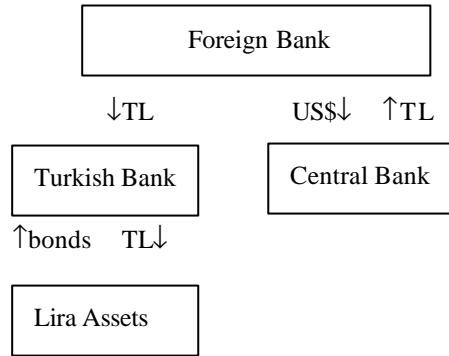


Source: CBRT

Note that the net domestic asset band widened slightly each quarter in 2000.

Structures to circumvent FX open position regulation

a)



b)

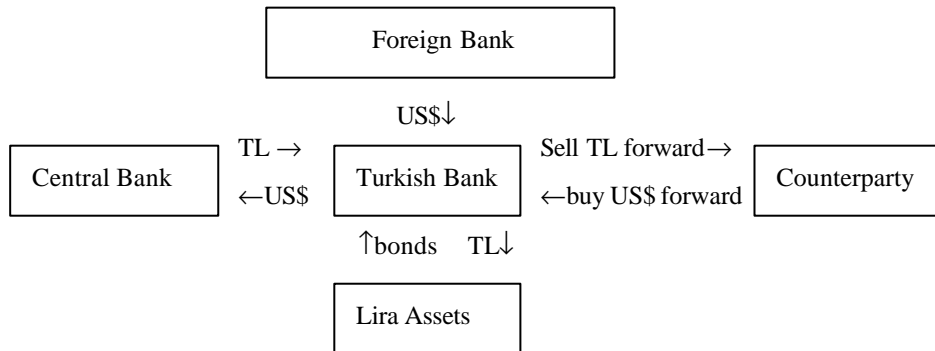


Table 23 - Painful Steps in Banking Sector Reform

(TL trillion)	Esbank	Yasarbank	Sümerbank	Egebank	Yurtbank
Assets	869	844	550	319	190
After tax profits	3.1	7.2	6.1	0.6	0.02
#of branches	94	84	84	73	28
Personnel	2,241	1,755	1,400	1,464	552

Source: TBA (Egebank & Yurtbank data are for 1998 year-end. Others are Sept 1999).

Table 24 - Financial Services: Growth & Share in GDP

1987 prices TL billion	Financial Sector*	GDP	% Share in GDP	Banks % D	GDP % D
1987	4,284	74,722	5.73%	-	-
1988	4,467	76,306	5.85%	4.27%	2.12%
1989	4,568	76,498	5.97%	2.26%	0.25%
1990	4,657	83,578	5.57%	1.94%	9.26%
1991	4,681	84,353	5.55%	0.52%	0.93%
1992	4,579	89,401	5.12%	-2.20%	5.98%
1993	4,557	96,591	4.72%	-0.48%	8.04%
1994	4,483	91,321	4.91%	-1.62%	-5.46%
1995	4,484	97,888	4.58%	0.02%	7.19%
1996	4,549	104,745	4.34%	1.45%	7.01%
1997	4,686	112,631	4.16%	3.01%	7.53%
1998	4,991	116,114	4.30%	6.52%	3.09%
1999	5,308	110,646	4.80%	6.34%	-4.71%
2000	5,351	118,560	4.51%	0.81%	7.15%

Source: CBRT

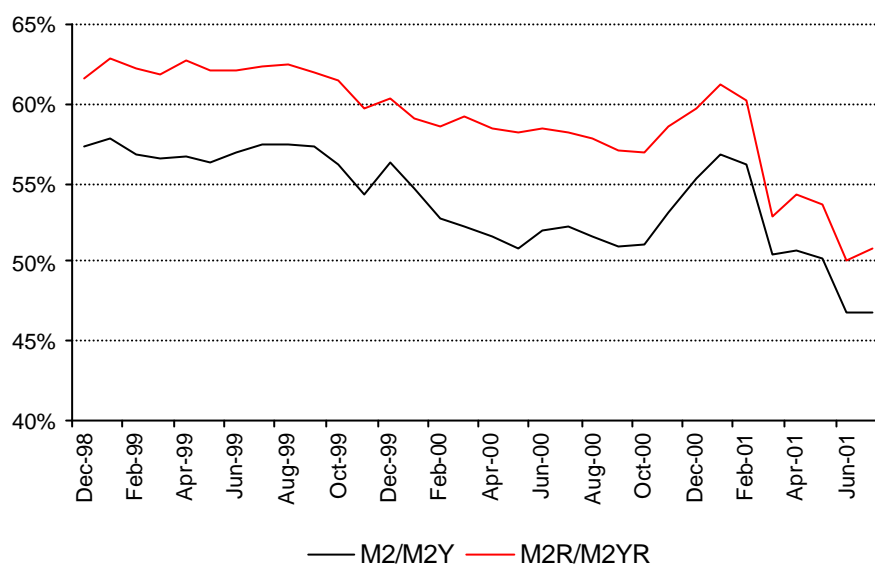
* National income data on financial institutions & relative banking services.

Table 25 – Currency Substitution

TL billion	M2	M2Y	Repo	M2R	M2YR	M2/M2Y	M2R/M2YR
Dec-98	11,577,582	20,216,371	2,254,731	13,832,313	22,471,102	57.3%	61.6%
Jan-99	12,063,026	20,881,273	2,888,100	14,951,126	23,769,373	57.8%	62.9%
Feb-99	12,348,282	21,733,799	3,121,000	15,469,282	24,854,799	56.8%	62.2%
Mar-99	12,864,623	22,733,818	3,131,500	15,996,123	25,865,318	56.6%	61.8%
Apr-99	13,719,051	24,229,076	4,001,300	17,720,351	28,230,376	56.6%	62.8%
May-99	14,252,574	25,342,766	3,864,200	18,116,774	29,206,966	56.2%	62.0%
Jun-99	15,218,594	26,746,066	3,614,000	18,832,594	30,360,066	56.9%	62.0%
Jul-99	16,720,897	29,150,743	3,906,100	20,626,997	33,056,843	57.4%	62.4%
Aug-99	17,488,564	30,481,768	4,186,100	21,674,664	34,667,868	57.4%	62.5%
Sep-99	18,774,684	32,780,996	4,020,600	22,795,284	36,801,596	57.3%	61.9%
Oct-99	19,667,283	35,032,813	4,777,700	24,444,983	39,810,513	56.1%	61.4%
Nov-99	20,108,606	37,049,810	5,032,700	25,141,306	42,082,510	54.3%	59.7%
Dec-99	22,596,061	40,119,310	4,079,826	26,675,887	44,199,136	56.3%	60.4%
Jan-00	22,760,205	41,607,380	4,528,307	27,288,512	46,135,687	54.7%	59.1%
Feb-00	21,990,507	41,706,854	5,896,378	27,886,885	47,603,232	52.7%	58.6%
Mar-00	22,491,499	43,010,517	7,320,710	29,812,209	50,331,227	52.3%	59.2%
Apr-00	23,259,098	44,986,222	7,202,995	30,462,093	52,189,217	51.7%	58.4%
May-00	23,217,907	45,568,940	7,836,442	31,054,349	53,405,382	51.0%	58.1%
Jun-00	24,680,949	47,445,762	7,480,352	32,161,301	54,926,114	52.0%	58.6%
Jul-00	26,103,790	49,907,705	6,914,011	33,017,801	56,821,716	52.3%	58.1%
Aug-00	25,979,000	50,341,802	7,355,945	33,334,945	57,697,747	51.6%	57.8%
Sep-00	26,409,896	51,750,944	7,243,405	33,653,301	58,994,349	51.0%	57.0%
Oct-00	27,140,919	53,006,507	7,051,247	34,192,166	60,057,754	51.2%	56.9%
Nov-00	28,803,422	54,242,649	7,242,133	36,045,555	61,484,782	53.1%	58.6%
Dec-00	30,088,807	54,366,545	5,977,113	36,065,920	60,343,658	55.3%	59.8%
Jan-01	32,434,281	57,090,869	6,483,022	38,917,303	63,573,891	56.8%	61.2%
Feb-01	38,321,267	68,258,722	6,987,542	45,308,809	75,246,264	56.1%	60.2%
Mar-01	38,067,094	75,490,305	3,868,185	41,935,279	79,358,490	50.4%	52.8%
Apr-01	38,056,560	75,122,693	5,850,124	43,906,684	80,972,817	50.7%	54.2%
May-01	38,827,715	77,326,010	5,720,299	44,548,014	83,046,309	50.2%	53.6%
Jun-01	39,729,638	85,057,712	5,795,387	45,525,025	90,853,099	46.7%	50.1%
Jul-01	39,729,638	85,057,712	7,297,983	47,027,621	92,355,695	46.7%	50.9%

Source: CBRT, ANKA End-period data CBRT weekly bulletin. Note that CBRT also provides time series data for repurchase agreements between financial institutions and their customers on its online database which differ from the end-month figures above. These are likely average figures, and do not alter the trend in deposit currency substitution depicted above.

Figure 15 - Currency Substitution



Source: CBRT

Table 26 -	Yield (%)	Maturity (days)	Net Borrowing in Auctions (TL trillion)	Net Borrowing Total (TL trillion)	TL/US\$ Average (buy rate)
1999	109.5	479	20,376	22,566	420,126
2000	38.1	411	21,226	24,653	623,704
Jan-00	38.3	452	3,014	3,202	543,878
Feb-00	42.1	394	3,003	3,087	562,396
Mar-00	39.9	518	2,361	2,461	579,375
Apr-00	34.5	382	3,299	3,737	594,412
May-00	39.4	426	2,720	3,768	616,089
Jun-00	41.8	499	1,136	1,389	615,105
Jul-00	34.5	343	1,242	1,490	626,424
Aug-00	33.2	331	2,459	3,097	644,295
Sep-00	33.6	532	112	154	663,106
Oct-00	38.0	346	827	1,127	675,747
Nov-00	41.0	344	1,053	1,141	682,921
Jan-01	64.9	195	1,785	2,070	670,624
Feb-01	110.3	57	2,294	2,955	738,109
Mar-01	193.7	98	2,189	3,286	965,969
Apr-01	130.4	165	3,041	3,330	1,206,954
May-01	82.0	189	3,811	4,021	1,129,785
Jun-01	88.5	125	3,636	5,065	1,212,681
Jan-Jun 01	108.8	144	16,205	20,727	987,354

Source: ANKA

Table 27		BIDS		BIDS	EXTRA SALE	NON			COMP	COMP	COMP	Type
Maturity months	AUCTIONS	ISSUE	OFFERED	ACCEPTED	FOR PUBLIC	COMPETITIVE	BUY-OPTION	TOTAL	RATE	RATE	RATE	
	DATE	DATE	(NOMINAL)	(NOMINAL)	INSTITUTION	BIDS	ACCEPTED	INCOME	(tax	(tax	(tax	
					(NOMINAL)	(NOMINAL)	(NOMINAL)		inc.)	inc.)	inc.)	
									ave	max	min	
16	09.05.2000	10.05.2000	3,444,900,000	818,390,000	121,455,340	52,651,175	-	693,692,108	32.05	32.24	31.65	
3	15.05.2000	17.05.2000	1,332,275,500	748,235,980	-	-	-	688,000,004	39.89	40.48	38.11	
24	16.05.2000	17.05.2000	1,772,787,300	767,235,000	538,717,725	73,235,310	103,724,975	1,540,525,653	46.13	46.28	45.63	c
14	23.05.2000	24.05.2000	1,677,260,000	987,450,000	179,709,080	25,370,705	-	846,077,939	37.53	37.82	37.13	
16	06.06.2000	07.06.2000	3,456,135,610	1,332,753,015	274,521,575	25,966,240	-	1,088,144,556	39.82	40.19	38.56	
24	06.06.2000	07.06.2000	469,900,000	252,200,000	25,407,280	27,942,930	-	300,653,035	49.05	49.25	48.68	c
24	04.07.2000	05.07.2000	997,000,000	177,000,000	166,205,785	43,452,240	-	400,471,171	46.79	47.04	46.43	c
12	18.07.2000	19.07.2000	2,000,977,200	996,727,200	-	40,561,505	-	782,544,204	32.55	32.85	31.8	
3	25.07.2000	26.07.2000	990,549,800	329,042,670	-	-	-	307,000,000	31.96	32.89	30.78	
3	14.08.2000	16.08.2000	1,722,685,680	897,151,430	-	-	-	838,000,002	31.37	31.72	30.83	
24	15.08.2000	16.08.2000	722,400,000	81,500,000	137,688,820	24,943,640	-	244,683,899	36.13	36.21	35.86	c
12	22.08.2000	23.08.2000	2,430,031,000	920,164,000	429,085,530	69,176,285	-	1,105,834,030	33.41	33.65	32.66	
18	22.08.2000	23.08.2000	2,774,460,000	1,296,655,000	178,400,725	171,738,165	-	1,054,788,322	34.58	34.91	31.97	
18	05.09.2000	06.09.2000	736,029,000	171,300,000	18,321,445	45,803,635	-	154,197,178	33.58	33.8	32.93	
18	03.10.2000	04.10.2000	846,880,000	302,400,000	302,679,980	76,381,360	-	446,154,681	35.8	36.2	35.24	
3	23.10.2000	25.10.2000	571,170,000	248,385,990	-	-	-	228,000,008	40.85	41.81	39.95	
14	24.10.2000	25.10.2000	1,123,240,000	574,340,000	32,978,220	42,298,165	-	453,060,583	37.38	37.75	36.72	
3	13.11.2000	15.11.2000	502,975,000	258,941,155	-	-	-	238,000,002	40.12	40.7	39.13	
14	14.11.2000	15.11.2000	1,443,590,000	941,140,000	124,758,980	-	-	751,839,993	38.28	38.65	37.71	
24	21.11.2000	22.11.2000	246,143,000	161,143,000	79,508,420	-	-	232,396,208	54.2	56.04	52.74	c
12	27.11.2000	28.11.2000	713,000,000	275,000,000	-	-	-	220,021,660	41.9	45.66	40.14	
14	19.12.2000	20.12.2000	-	-	-	-	-	-	0	0	0	
6	05.01.2001	08.01.2001	2,361,066,030	1,488,787,000	-	-	-	1,147,174,577	67.47	69.85	62.9	
14	05.01.2001	08.01.2001	683,388,500	438,528,500	497,470,955	-	-	534,976,168	64.99	68.56	57.28	
3	23.01.2001	24.01.2001	830,018,600	434,546,335	-	-	-	388,000,000	57.33	59.19	54.42	
3	13.02.2001	14.02.2001	1,335,412,610	916,349,500	-	-	-	802,000,007	70.43	73.2	66.77	
1	20.02.2001	21.02.2001	1,770,367,785	1,598,407,170	464,928,265	-	-	1,927,699,858	144.23	200.06	33.37	
3	20.03.2001	21.03.2001	7,391,480,525	2,926,151,165	1,236,952,185	228,545,475	-	3,285,875,567	193.71	193.71	193.71	
4	03.04.2001	04.04.2001	1,829,937,905	1,393,767,165	89,119,295	-	-	1,079,693,715	150	150	150	

a :inflation indexed

b :fixed coupons

c :FRNs

Source: CBRT

Crisis Chronology

November 15, 2000

- IMF and Turkish authorities hold a joint press release reaffirming 2001 targets, and announcing that IMF stand-by loans of approximately USD 600 mn will be released in December.
- Authorities announce a 3 year timetable for privatizing Emlakbank, Halkbank, and Ziraat bank.

November 16, 2000

- Repo rates reach 90% ostensibly on the back of mid-month wage payments. Compound rates on the benchmark June 20, 2001 bill rose 200 basis points, exceeding the 40% level.
- New legislation for central bank independence slated for 2001H1.
- Legislation granting autonomy to public sector banks passed through parliament.
- Sale of 20% of Vakıfbank approved by parliament.

November 17, 2000

- Newspaper reports state that high interest rates of the past few days inexplicable by liquidity requirements, wage payments. Graft clean-up in the banking sector, early arrival of year-end FX open position closures cited as the true source of higher rates. It is, however, believed that the fact that bonds were bought at the 34% level will provide an incentive to market players to keep rates down.

November 19, 2000

- Rumors cited as an adverse factor for banking sector.

November 21, 2000

- Sharp fall in ISE-100, closing at 11,313.97. Credit links with failed banks cited as source of concern.
- CBRT governor announces a reduction in reserve requirements from 6% to 4% effective from January 12, 2001, releasing roughly TL 500 trillion to banks.
- January-October budget figures released showing a record primary surplus of TL 7.996 trillion, and a budget deficit of TL 11,010 trillion.
- Large banks raise TL deposit rates
- Benchmark June bill closes at 44.27%.
- Interbank rates hover around 80%.
- Treasury issues FRN maturing on May 15, 2002.
- Government issues statement disparaging EU stance on Turkish entry conditions.
- USD per Euro at 0.8473, US trade deficit reaches record high of USD 34.3 bn in September.

November 22, 2000

- Life standard tax on the self-employed proposal discussed in parliament.
- Heavy foreign currency demand after investors sell Turkish assets. Banks bought USD 1.3 bn and Euro 67 million from the CBRT. High current account deficit, banking sector problems, possible investigation spillovers to quoted firms, rumors of new taxes on financial instruments blamed.
- Overnight money market rates shot over 200%, with one night repo rates at 230%. Average rates for the day were 66.5% and 80.5%, respectively.
- CBRT, Treasury, BRSA in touch on market developments. Bond buyback touted to provide liquidity. CBRT holds morning repo auction funding TL 380 trillion at an average rate of 457%. Adverse rumors and Moody's Argentina downgrade blamed for concern.
- CBRT provides TL 1,308 trillion at 210% at an unusual 1640-1700 repo auction. This breaches the stand-by net domestic asset ceiling

November 23, 2000

- CBRT, Treasury, BRSA release statement to calm markets.
- ISE continues to fall ending the day at 10,333.
- UPS systems fail at Demirbank, rendering the bank unable to send EFTs. Rumors hint at illiquid bank.
- CBRT funds Demirbank to the tune of TL 250 trillion to prevent sale of bonds.

November 24, 2000

- Minister in charge of privatization announces that most sale revenues used for plugging losses.
- Sayistay releases report demanding greater fiscal transparency.
- Continuation of certain quake taxes expected to yield TL 2.7 qtr in 2001.

November 27, 2000

- CBRT and Treasury conduct buybacks amounting to TL 410 trillion. With Treasury providing TL 190 trillion.
- Temporary change in liquidity requirement rules provide temporary relief.

November 28, 2000

- ISE falls to 9,641.

November 29, 2000

- Newspaper reports daily FX outflow from CBRT total of US\$ 4,454 mn between November 17 and 28.
- Newspaper reports hint at authorities applying for SRF help from IMF.

December 4, 2000

- ISE-100 drops by 8.13%

December 5, 2000

- ISE-100 rises by 19.45%, but interest rates still at triple digits.

December 6, 2000

- Authorities bring Demirbank, Turkey's 9th largest bank in terms of assets, under SDIF , and announce timetable for delayed reforms including 33.5 % sale of Turk Telecom.
- BRSA revokes Park Yatırım's – an investment bank – license.
- World Bank considering an additional US\$ 500 mn in financial sector loans.
- IMF announces US\$ 10.4 bn SRF package to help Turkish stabilization program

December 7, 2000

- Official FX reserve figures for December 1, 2000 announced at US\$ 18,942 mn. FX outflow between November 20 and December 5 announced at US\$ 7.1 bn. FX sales to CBRT reached US\$ 1.07 bn and Euro 14 mn on December 7th mirroring a 20% surge in ISE index.

December 8, 2000

- Withholding tax raised from 14% on repos and 15% on time deposits to 16% on both.
- Treasury issues TL special bonds to BRSA to fund banks under SDIF.

February 8, 2001

- Ihlas Finans loses license after decision by BRSA

February 19, 2001

- President and Prime Minister's squabble sparks a currency crisis

February 22, 2001

- Crawling peg regime abandoned, and Lira allowed to float

April, 2001

- SDIF takes over two more banks: Iktisat and Ulusal.

July 10, 2001

- SDIF takes over five more banks: EGS, Kent, Site, Tarı̇ and Bayı̇ndı̇r.

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