

Chronicle of the Turkish Financial Crises of 2000-01

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Chronicle of the Turkish Financial Crises of 2000-2001

By
Caroline Van Rijckeghem and
Murat Üçer

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Preface

The Turkish crisis of November 2000, while not entirely unexpected, caught the world by surprise. It was only 10 months into an IMF supported disinflation program, which was working generally well despite several shortcomings, and the political backing for the program was stronger than anything Turkey could hope for. But the crisis hit violently, with interest rates breaking world records, and much earlier than experienced in other “exchange rate-based” stabilization programs. Despite a rapid rescue by the IMF, a sequel followed only a few months later, on the back of an awkward fight between the President and the prime minister, leading to the float of the lira in February. The crisis cost Turkey the most severe contraction of its modern history since the 1940s.

Our objective in writing this monograph is four-fold. First and foremost, we wanted to enquire into the causes of the crises in the hope of drawing broad lessons. Since the 1994 crisis, Turkey avoided a serious fix of its macro imbalances and adopted instead a “muddle-through” approach, and many commentators warned, year after year, that there would be a crisis “next year.” Yet Turkey managed to withstand the pressures, including contagion from the Asian and Russian crises. When it finally experienced its crisis, it was, quite ironically, in the very first year of a serious, IMF-supported effort at stabilization.

Second, much of the research on currency crises focuses on identifying broad macroeconomic regularities, in the run-up to a crisis and dismisses the details of the crises themselves. Detailed chronologies are often not to be found. Yet, crises, no doubt, are very rich and unique processes that macro indicators do very limited justice. Mindful of this, this book departs from the macro tradition and provides a nitty-gritty account of the context, daily developments, as well as the “views” of various players that lived through the crises.

Third, although much of the material inevitably remains still sensitive, we wished to provide a full account of what exactly

happened in the crisis, while taking into account the different perspectives of the players who took part in the crisis. For one thing, it appeared to us that people were fast forgetting about the events that had traumatized them only a year earlier, with not much on record to date. For the November crisis there is a chronology as well as an account of the crisis in Turkish, based on interviews by Reuters.¹ The NBER crisis project that took place in Boston in July 2001 provides a number of views by Turkish policy makers, economists, and IMF staff.² There are also a number of academic papers, written by Turkish economists.³ But none of these give a complete account of the crisis, and some explanations, as we came to notice after our interviews, were either too simplistic or just pure “myths”. In that regard, we sought to set the chronology straight and also provide a richer account of the crisis from alternative perspectives, notably that of market participants and policy makers.

Finally, we wished to trigger a general interest in the Turkish case, which we believe always gets much less attention from academic and policy circles abroad, compared to the other emerging markets of Asia, Latin America, and Eastern Europe. The 1994 crisis, for instance, was studied very little and mostly by Turkish economists, and at the end the lessons of the crisis remained not fully understood and/or not widely disseminated. In some sense, this book is an ambitious attempt to change this and hence contribute to a better understanding of currency crises.

The project took a formal life after both authors, who happen to be married, relocated to Turkey in July 2001 and decided to combine their comparative advantages. Caroline Van Rijckeghem has done academic work on contagion and currency crises, and at the time of the crisis, was part of the IMF’s Capital Markets Mission to London which focused on the Turkish crisis, while Murat Ucer has followed Turkey in various capacities for several years.

As for our methodology, after reviewing published materials, including IMF documents and newspaper articles, we conducted interviews in the fall of 2001 with some 30 top policy makers, bank executives, treasurers, and economists, as well as market analysts with the purpose of establishing a chronology of the November and February crises. We were able to meet with most relevant institutions, the Banking Regulation and Supervision Agency, being one notable and unfortunate exception. The names of persons interviewed are listed below, with the exception of quite

a few participants who chose not to have their names appear. But the list by no means is exhaustive, as we also had a large number of informal discussions with several friends and acquaintances on the topic. When we report our findings, we distinguish the facts – the exact chronology, from “the evidence” – material provided during our interviews, and our own interpretation.

On request of our interviewees we often did not provide bank names or specific attributions for the material in the book. We were extremely careful however to double-check our material, as we found out early on, that the known history of the Turkish crises was largely based on rumors and guesswork. In the chronology we were also very careful to only relay the facts and rumors, as they were told to us, rather than provide our own interpretation of the facts.

The book, like all accounts of the crisis, had the benefit of hindsight. We hope the readers who played a part in the crisis do not find us arrogant for at times finding fault with the design of the disinflation program and management during the crises. We were initially excited just like everyone else when interest rates rallied beyond expectations, not seeing the seed of destruction this carried. Similarly, good crisis management relies on good information, which was not available, as witnessed by the continuing controversies, such as on the size of open foreign exchange positions, and circulation of false rumors to this day. Because of the style chosen, the book does not do justice to the effort by all involved. The crises were emotionally devastating to all the participants we interviewed. Bankers had to face panicky depositors rushing to get their funds out and a payment system collapse. Many commented to us how they were depressed for months because of what happened to their country. IMF and Ankara bureaucrats alike fought very hard to save the program they had created. They called on their political connections in Europe and the U.S. and succeeded in getting a new IMF program in record time during the November crisis. The IMF team flew in for monthly reviews of the program after the November crisis, and spent, along with its Turkish counterparts, several sleepless nights. Admittedly, these hardships and personal efforts do not come across in our manuscript, which focuses on dry policy actions and press releases.

In an introductory chapter, we start with reviewing the general context in which Turkey and the IMF signed up to a very ambitious disinflation program in late 1999. In Chapter II, we

provide a brief overview of the design of the disinflation program. The IMF, having the benefit of extensive experience with exchange rate-based stabilizations, sought to address some of the risks of such stabilizations in its design. But it turned out that some of these well-known risks materialized out of proportion to all expectations (e.g., a lending frenzy and short-term external borrowing) and were compounded by others that were neglected from the very beginning (e.g., the vulnerability of the banking sector to a currency board type arrangement and a severe lack of political “ownership”). We follow this chapter with a discussion on the development of vulnerabilities (Chapter III) and what we call the “mini-crisis” in September (Chapter IV).

In Chapters V and VI, we establish the chronology of the November and February crises, as well as the lull in between, including a discussion of the false rumors circulating during the crisis, most notable among these, the rumor that a medium-sized bank (the infamous “Demirbank”) lost market access causing it to liquidate its government securities thereby starting the crisis. These chronologies are followed by Chapter VII, which provides a flavor of the disagreements in interpretation between Istanbul, Ankara, Washington, and London, perspectives being most different when it comes to the role of the credit ceiling under the IMF program. Chapter VIII takes a look at the Turkish crises from the perspective of the academic literature on currency crises. In Chapter IX, we offer our main conclusions. We submit that the Turkish story has striking similarities to that of Agatha Christie’s “Murder on the Orient Express”⁴ – a classic detective story of a not-so-innocent victim and of multiple murderers: Turkey, marred with lack of effective banking supervision and corruption in the banking sector, came tumbling down, as the IMF, the Turkish government, foreign investors and local banks all played their part.

The chapters are followed up by a list of references, three annexes, and a glossary on key economic and financial terms. The annexes include a table on selected economic indicators for general reference on macroeconomic developments immediately before and after the crisis (Annex I); a table on daily developments in a number of key market indicators during the November and February crises (Annex II); and a brief note on “financial structures” in use before the November crisis (Annex III).

We thank our interviewees for their generosity and the lengthy and very interesting discussions we had. Our interviewees included, with their position at the time of the November crisis or

shortly after in parentheses, Stan Fischer (First Deputy Managing Director, IMF), Gazi Ercel (Governor Central Bank of Turkey), Vural Akisik (Chairman of the Board of State Banks), Ferhat Emil (Deputy Undersecretary of the Treasury), Ali Ihsan Gelberi (Deputy Director of Public Finance Department, Undersecretary of the Treasury), Burhan Karacam (Chairman of the Board, Kocbank), Ekrem Keskin (Secretary of the Banks Association of Turkey), Ercan Kumcu (President Macro Consulting), Huseyin Imece (EVP in charge of Treasury, YKB), Namik Aksel (senior trader, YKB), Hakan Kalkan (Treasurer YKB), Yavuz Canevi (CEO TEB), Resit Toygar (EVP in charge of Treasury, Akbank), Nezihi Alpturk (Board member, Korfezbank), Tayfun Bayazit (Acting CEO Disbank), Uruz Ersozoglu (EVP in charge of Treasury, Osmanli Bank), Emre Timurkan (Head of Capital Markets, Korfezbank), Serkan Turk (Eurobond Trader, Korfezbank), Emin Ozturk (Senior Economist, JPMorgan), Ceyla Pazarasioglu (Senior Economist, ABN Amro), Matthew Vogel (Analyst, Merrill Lynch), Servet Yildirim (Chief Editor Turkish News, Reuters), as well as a number of interviewees from Turkish and foreign banks, the Turkish bureaucracy, and the IMF who chose to remain anonymous given the sensitivity of the material. We also thank IMF Chief Carlo Cottarelli, Central Bank Governor Sureyya Serdengeçti and Deputy Governor Sukru Binay and their staff, Hasan Ersel, Ali Tukul and Christian Mulder for comments on an earlier draft. Thanks are also owed to Berna Bayazitoglu and Pinar Kucukfidan for providing us with a full set of their daily reports done for CSFB Istanbul and Yapi Kredi Bank, respectively, and to Burhan Karacam for helping us obtain relevant data. Murat Seker provided research assistance and Ozlem Derici assisted with the graphs.

Introduction

In the summer of 1999, Turkey was at a delicate juncture. The latest bout of emerging market crises – the contagion from the Russian crisis and subsequent float of the Brazilian real – had been managed without a currency crash but at a high cost and vulnerabilities had grown significantly. Despite a strong rally around the time of the April elections, real interest rates were running at over 20%, the economy was on its way to a steep contraction, likely to be the sharpest since the 1994 crisis, and inflation was hovering around 65%. It seemed as if Turkey's much boasted "high inflation/high growth equilibrium" had been lost.

The government, which had taken office in May, was a pleasant surprise in many respects. A 74 year-old social democrat, Bulent Ecevit, had ranked first in the elections, thanks largely to his involvement, partly by coincidence, in the dramatic capture of Turkey's most wanted man, PKK leader Abdullah Ocalan. He had managed to pull together a coalition government comprising the right-wing nationalist MHP, which, to everyone's surprise, had emerged as the second most popular party and the center-right ANAP, which had barely entered Parliament, surpassing the 10% threshold.

In the summer months, while most observers agreed that the coalition had turned out much more cohesive than expected, widespread skepticism prevailed as to whether it could last, given its awkward composition. Perhaps more importantly, the government's resolve to undertake a substantial fiscal adjustment and start implementing Turkey's long overdue structural reforms, key conditions to sign up a full-fledged IMF program, were in serious doubt. In July, Hikmet Ulugbay, a well-liked figure close to the prime minister and the only hope for senior bureaucrats at the Treasury and the Central Bank (CBT) to put the heavy IMF conditionality in a language that the government, most notably its social democrat leader could understand, attempted suicide, dealing a serious blow to the program hopefuls. His suicide attempt, which was formally stated to have resulted from

something like a “depression caused by excessive workload”, reflected, in a way, the tensions of the times and still remains a mysterious event.⁵

It was against this backdrop that the country would be shaken by a devastating event. On the morning of August 17, at 3:05, a massive earthquake, with an epicenter only 100 kilometers away from Istanbul shook up the entire Marmara region, leaving behind thousands of people dead and homeless. The outcome was truly tragic. In the eyes of many, the politicians, and in fact the whole system, were to blame for decades of neglect and corruption (e.g., in enforcing building codes), as well as for the incompetence in the handling of the rescue efforts, and even denying the scale of the tragedy for a while.

On the somewhat brighter side of things, the earthquake acted as a medium for the public to express its deep-seated distrust and frustrations toward the state and led it to demand unanimously, and perhaps for the first time this powerfully, a wholesale change in the way the country was being run. The effect that the earthquake had on the Turkish people is perhaps best described in a book by Stephen Kinzer, a former New York Times correspondent to Turkey:

For those interested in the fate of nations, disasters are only distractions. The Turkish earthquake, however, shattered that cliché just as completely as it devastated towns, cities and human lives. Few natural disasters in modern history have had such a profound political, social, and cultural effect...The quake led millions of Turks to question institutions they had never questioned before, and to accept the necessity of changes they had resisted for years...A flood of images conveyed the Turkish state's failures.⁶

A. An Atmosphere of International Support

This dramatic transformation in the nation's psyche would be coupled by an unprecedented wave of international support for Turkey. In the very first few hours of the earthquake, hundreds of aid crews arrived from all over the world. Perhaps most interestingly, this powerful wave of support included Greece, Turkey's long-time foe, with more aid arriving from there than from any other. A few weeks later, when Greece was hit by an earthquake, this time Turks would be flying over to help. The rapprochement between the two old enemies was truly moving,

and spectacular, partly thanks to the genuine efforts by the foreign ministers on each side, Ismail Cem and Yorgos Papandreu.

Meanwhile, the bureaucrats continued their efforts doggedly, to secure an IMF program. The chances had improved because of the prevailing sentiment, but obtaining U.S. support for an IMF program was critical. In late September, a large Turkish delegation headed by the prime minister went to Washington D.C., on occasion of the IMF/World Bank Annual Meetings. During the visit, Ecevit met with President Clinton, which was followed up in November by a visit of the Clintons to Turkey. During his trip to the earthquake zone, the U.S. President promised to increase aid to Turkey, amid a massive outpouring of genuine affection for the President by the locals, and later gave a talk at the National Assembly, carrying the popularity in U.S.-Turkish relations to a level perhaps unprecedented since the 1950s when Turks were trying to anchor themselves to the West. Meanwhile, the Americans openly lent their support for the construction of the polemical Baku-Ceyhan oil pipeline project, and an agreement was struck in October among the relevant parties.

The air of international support would reach its peak in December, when the European Union recognized Turkey as an official candidate in Helsinki, breaking the deadlock in relations since Turkey had unilaterally suspended its political dialogue two years earlier.⁷ This was just the beginning of a long journey to actual European membership, but it was nevertheless a very important step, raising hopes that Turkey could soon start accession talks with the Union and finally jump leagues.

Around the time of the breakthrough in E.U. relations, it became quite clear that the IMF would go ahead with a stand-by agreement, thanks to a number of critical steps by the Government. First, a law that allowed international arbitration was passed only a few days before the earthquake. And later, despite the social upheaval it created, the Government managed to approve a politically difficult social security reform, a tough austerity budget, and a demanding tax package. The IMF was nonetheless skeptical, but there was little doubt that the pressures were also mounting on both the IMF and the World Bank to assist Turkey. Meanwhile at the IMF, Stan Fischer, the IMF's brilliant Deputy Managing Director as well as its new Chief of the Turkish Desk, Carlo Cottarelli, were extremely fervent and challenged by the prospect of a program with the Turks.

All in all, in the last few months of 1999, hopes were running high that, against all odds, these tough and tragic times could lead to a happy ending, and that the crisis could present itself as a historic opportunity.

B. The “Debt Scare”

Amid this mixed but generally positive mood, things were looking pretty bad on the technical side with low growth and high real interest rates taking their toll on Turkey’s fragile debt dynamics. True, debt compared to GNP was not too high and the economic team, against all odds, had managed to roll over debt after the Russian crisis. In fact, despite a series of emerging market crises, from Asia to Russia, and then to Brazil, Turkey had muddled through – yet again – without letting the exchange rate go.

But the debt burden nevertheless kept growing and rollovers looked increasingly unmanageable, especially looking ahead. At the time of the Russian crisis, the debt management team had made a critical decision to extend the maturity of debt to reduce rollover risk. Banks were talked into holding these two-year instruments during monthly “domestic debt consultative group meetings”, an ideal platform for moral suasion and/or promoting cooperative play in the management of debt, but in essence, the new instruments only postponed the problem, creating a serious hump in debt payments for the year 2000.

When the August earthquake sent interest rates up to 115% (against an inflation of around 60%), it became quite clear that time was running out. The bureaucrats at the Treasury did their best to convince international investors that Turkey had no rollover problem, but they shared their worries privately that Turkey needed a “big event” to turn things around. This was nothing but a comprehensive disinflation program with the IMF. And, there was one way to convince the politicians to sign up for it: to scare them that the “debt game” would otherwise be over and that the great Atatürk’s Republic would be unable to pay wages to its workers – something unprecedented in history.⁸

C. Live and Let Live

Roughly from the time of the 1994 crisis, Turkish financial markets had come to settle in a fuzzy equilibrium with a large nominal stock of debt carried by a handful of banks in a lucrative “carry trade”; and a large number of lemon banks involved in

tunneling bank deposits to shareholders through connected lending.

The first process entailed banks borrowing from abroad or taking foreign exchange deposits and investing the proceeds in government paper (read “opening foreign exchange positions”), thanks to an “implicit” guarantee by the monetary and fiscal authorities that the “debt game” would continue undisrupted. The growing debt stock forced the central bank to adopt an accommodative monetary policy whereby it provided banks the necessary liquidity on demand through open market operations, so as to enable them to carry the growing debt. The exchange rate was predictable, thanks to a rough “real exchange rate rule” whereby the exchange rate depreciated about as much as wholesale price inflation. In the process, banks made money, the Treasury rolled over debt, and the public sector’s ever-larger borrowing requirement was met.

On the systemic side of things, as we elaborate in the following chapters, banking supervision being in the hands of the Treasury politicized the process, creating a classic case of conflict of interest between supervisory responsibilities and the borrowing needs of the Treasury. In a nutshell, bank supervisors had an incentive to tolerate banks’ exceeding limits on open foreign exchange positions, as this facilitated borrowing from abroad, which could only be done in foreign currency. In parallel to the debt game, the state banks were used as quasi-fiscal machinery to finance off-budgetary spending, and being systematically short in liquidity, tapped the money markets and kept pressuring interest rates. In practice, state banks were competing with the Treasury, but no one wanted to see it that way, as borrowing outside the auctions was sort of sweeping the problem under the rug.

The second process related to personal benefits politicians reaped from the banking sector. The politicized implementation of banking regulations meant politicians could benefit from connected lending and allowing defunct banks to continue operating. Furthermore, the granting of banking licenses was a lucrative business, and many were granted to “bankers” without the proper credentials. Meanwhile, a blanket deposit guarantee, in place since the 1994 crisis, helped a lot of the “lemons” to survive, allowing them to bid up deposit rates, and killing incentives for depositors to be selective.

Naturally, in this high real interest rate environment very few banks had the incentive to engage in, or could profit from, “real

banking”. Even if some banks managed to groom themselves into solid franchises, at the end of the day, “banking” was all about investing in government paper and hiding losses incurred elsewhere, be it for good (investment in technology) or bad reasons (disguising bad/related party lending). There was stability in a context of overall instability, or an illusion in fact, with a gradual rotting from within. But, in the absence of political support for a major reform of the system, every one involved – banks, the Treasury, as well as the central bank – played its part, and no one dared to take the punch bowl away, as long as the party was still on.

The Design of the 2000 Program

The IMF had been willing to help Turkey for the longest time, but never received the kind of commitment needed to proceed with an ambitious program, loaded with fiscal and structural measures. It knew well enough that Turkey was vulnerable and that the Turkish model of growth with high inflation, contrary to the local rhetoric, was not quite sustainable. But in late 1999, the situation was even worse, and Turkey was clearly heading for the wall. From the IMF's point of view, the program was worth a try just because of that, despite the risks.⁹

Interestingly though, the Turkish program was clearly not so much about fighting a financial crisis or a balance of payments need, as it had typically been the case in IMF programs. The IMF's principal focus in this program was debt dynamics and disinflation, and a wholesale transformation of the supply side of the economy, to promote sustainable growth. Debt dynamics could be fixed once and for all, only after success was ensured in these areas. In this particular sense, the Turkish program was uncharted territory for the IMF as well. It was the first time the IMF would be taking such a major lead in fixing "chronic inflation" in a relatively developed market economy, in the absence of a clear balance of payments need.¹⁰ Excluding the IMF programs in transition economies, which had successfully stopped hyper- and high inflations back in the early 1990s a typical IMF program design had little to do with disinflation from "chronic" levels. Instead, many countries that managed to reduce inflation from chronic or hyperinflationary levels had initiated their own programs, and the IMF had been gradually talked into them (e.g. Brazil's Plano Real in 1994; Argentina's Convertibility Plan of 1991).

The 2000 program was well thought out in its design.¹¹ It sought to ensure debt sustainability and attack Turkey's high and chronic inflation, with the use of the exchange rate as a nominal anchor, a strong fiscal adjustment and several structural reforms. The exchange rate was the most effective anchor in Turkey's

circumstances, given inflationary inertia and Turkey's highly dollarized economy. The adoption of a crawling peg with a relatively low rate of exchange rate depreciation was supposed to reduce inflationary expectations, guide decision makers in price-setting, and to directly reduce inflation through the low cost of imports. The anchor, in turn, would be supported by a strong fiscal adjustment, a whole list of structural reforms, and an ambitious privatization program, and would entail an "exit strategy", to cope with real appreciation in due course.

It was also well recognized that the banking sector would have to go through a wholesale transformation. The program sought to fix the problem banks by a "gradual" strategy, whereby an independent supervisory authority would be formed and the regulatory environment tightened. This would mean that banks, which were not able to do true banking, would be washed out, while others, partly thanks to windfall profits from the sharp rally in interest rates on the inception of the program, would be able to re-capitalize themselves and adjust to the new regulatory environment. The program involved a relatively small amount of financing of less than \$4 billion, to be disbursed over three years. The key reason was that the Turkish problem was about "credibility" rather than financing, as there was no foreign exchange crisis, and the measures under the IMF program could be expected to do most of the job.

In essence, the Turkish program was an example of excellent textbook design that reflected an accumulated wisdom in "emerging market macroeconomics," a good chunk of which had been developed around 19th Street in Washington D.C. in the first place. Unfortunately though, it was a textbook design after all. The program was "too brittle" for Turkey's circumstances, as the IMF's European Department Director Michael Deppler would later put it,¹² which needed superb management and luck! In fact, soon after the program was launched, it turned out that Turkey had neither; and it all started to look like a very risky adventure instead.

A. Cleaning the Fiscal House

In late 1999, everyone was pretty much convinced that fiscal excesses lied at the heart of Turkey's ills. But the problem was not quite obvious at first sight, as the "central government finances" did not look particularly bad. The non-interest balance, a key

indicator that showed fiscal efforts, was generally in surplus, helping the Treasury manage its cash position, and keeping borrowing levels in the auctions relatively under control. Public debt, as measured in the official statistics, was not climbing too fast either, compared to national income, thanks to inflation and economic growth compensating for a large chunk of the nominal growth in debt.

But something was missing in this picture: the central government budget was only part of the story. A whole lot was going on outside it, with the other public sector components, notably state banks on account of their “duty losses,” but also social security, extra-budgetary funds, and state economic enterprises running wild deficits. A striking example of how things could look sharply different by two definitions was the “fiscal adjustment” in 1998, which was undertaken in the context of an IMF staff-monitored program. Based on the numbers later calculated by the IMF, the government managed to generate a non-interest (primary) surplus of over 3.5% at the level of the central government, but the surplus remained modest (about 0.5%), at a broader public sector level (Table 1).¹³ The situation was similar with the debt figures, with official statistics showing only part of the picture. The so-called unsecuritized “duty losses” by state banks, i.e. Treasury liabilities resulting from mandated off-budget expenditures buried in state bank balance sheets, amounted to some 13% of GNP.

The un-transparent financial relationship between the Treasury and the state banks would eventually strike back in a different form, as state banks, often short in liquidity, would tap the money markets to finance these losses at punitive interest rates. In late 1999, for instance, state banks had to rollover every day around \$4-5 billion, in the money and deposit markets. It was a very well known and accepted fact that they would offer higher interest rates than private banks, but no one necessarily bothered to think too seriously about its wider implications for the system’s health. State banks were also the most common visitors of the central bank’s money market facilities.

Both the IMF and a number of senior bureaucrats at the Treasury were aware of this proliferation on the fiscal side. The IMF had been regularly talking about the duty losses in its letters of intent, while the bureaucrats were doing analytical papers to draw attention to the problem.¹⁴ In fact, the IMF staff, in its internal work, had calculated a fully comprehensive and con-

Table 1 - Public Sector Primary Deficits and Consolidated Net Debt of the Public Sector (as % of GNP)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Public sector primary balances 1/ | -3,6 | -6,2 | -7,0 | -5,6 | -0,2 | 2,7 | -1,2 | -2,1 | 0,5 | -2,0 |
| Central Government 2/ | 1,3 | -0,6 | -1,7 | -0,6 | 3,4 | 3,4 | 1,2 | -0,2 | 3,6 | 1,5 |
| Extrabudgetary funds | -0,6 | -1,0 | -0,8 | -1,5 | -1,5 | -0,6 | -0,2 | 0,1 | 0,0 | -0,5 |
| Local authorities | -0,1 | -0,3 | -0,1 | -0,6 | -0,1 | 0,0 | -0,1 | -0,1 | -0,4 | -0,8 |
| State economic enterprises | -4,2 | -4,0 | -4,0 | -1,9 | -0,3 | 1,3 | -0,1 | -0,4 | -1,1 | -1,2 |
| Social sec. Inst & revolving funds | 0,0 | -0,3 | -0,3 | -0,6 | -0,6 | -0,6 | -0,2 | 0,0 | -0,4 | -0,1 |
| Duty losses for subsidized credits | 0,0 | 0,0 | 0,0 | -0,3 | -1,1 | -0,8 | -1,9 | -1,4 | -1,2 | -1,2 |
| Seignorage 3/ | ... | 2,0 | 2,2 | 2,0 | 2,1 | 1,7 | 2,0 | 1,8 | 1,8 | 2,3 |
| Real interest payments 4/ | -4,1 | -3,0 | -2,3 | -3,5 | -4,9 | -3,0 | -7,3 | -2,6 | -7,9 | -12,6 |
| Net debt of the public sector | 28,8 | 35,2 | 35,7 | 35,1 | 44,7 | 41,3 | 46,5 | 42,9 | 44,5 | 61,0 |
| O/w Central Government (Treasury data) | 32,2 | 35,5 | 37,6 | 38,4 | 50,6 | 41,6 | 44,3 | 43,3 | 40,6 | 53,2 |
| Unsecuritized duty losses of state banks | 0,0 | 0,0 | 0,0 | 0,7 | 1,8 | 2,1 | 4,2 | 5,2 | 7,5 | 13,3 |
| Rest of the public sector | 5,2 | 6,7 | 5,6 | 4,4 | 6,9 | 6,7 | 7,0 | 5,4 | 5,5 | 9,1 |

1/ Final data for the components is not publicly available for 1999, hence the total exceeds the sum of the parts. Central bank assets and deposits of central government account for the remainder.

2/ Excluding privatization revenues, transfers from the CBT, interest receipts, and recapitalization costs.

3/ Change in high-powered money divided by GNP.

4/ Interest payments over change in deflator, multiplied by preceding year's domestic debt.

Source: Van Rijckeghem (2003), based on IMF and Treasury data.

solidated concept of deficit and debt for the entire public sector, which would consequently enable the setting of program fiscal criteria at the level of the primary balance of the public sector.¹⁵ In contrast to this very careful approach to the “flows”, however, the IMF saw no urgent need to correct the “stock problem” which would have involved the Treasury paying its outstanding debt to state banks thereby alleviating the latter’s liquidity shortage.¹⁶

Of course, the Turkish fiscal problem was deeper than generating positive non-interest balances for a few years, and the whole fiscal side had to go through a radical transformation to sustain the surpluses and make the fiscal adjustment itself credible. As a matter of fact, the central government budget was a small road map into what Turkey needed to do most urgently on the structural side. The budget had remarkably little room for maneuver, given that a large chunk of revenues was allocated to interest payments, agricultural subsidies, social security transfers, and transfers to chronically loss-making state economic enterprises, with capital expenditures reduced to miniscule amounts. The program contained measures to tackle virtually every one of these issues. Most notably, the IMF (and the World Bank) asked that the government implement an immediate set of reforms to curb the losses of social security institutions. The program also called for gradual phasing out of extra-budgetary funds, barring a few, and replacing an inefficient and wasteful subsidy system with a direct income support scheme in agriculture.

As well, the program included substantial efforts on the privatization front, with some \$17.6 billion revenue envisaged in 3 years. The first year target of \$7.6 billion was to be reached by the sale of 20% stake of Turkish Telecom to a strategic investor, another GSM license, and a long list of smaller enterprises from the portfolio of the Privatization Authority. All this meant that a comprehensive effort was finally underway to clean up Turkey’s fiscal mess, which was central to the credibility of the program.

There was one problem left, however: Tackling the adverse impact of a sharply declining inflation on the fiscal accounts, or the resulting *operational deficit* (the primary deficit plus the real component of interest payments) because of high ex-post real interest rates. On that, the program included a novel and obviously very controversial element: a retroactive taxation. This meant that a tax on debt instruments issued before a certain date would be imposed, thereby trimming some of the windfall gains

accruing to banks from the rally in interest rates.¹⁷ The decision was obviously controversial, as it meant unilaterally reneging on a contract. On the day after its introduction, which was immaculately executed without any leaks to the media, quite unusual for Turkey, the markets were shell-shocked and felt completely betrayed.¹⁸ In many ways the retroactive taxation was like a step-devaluation. Interestingly though, soon enough, markets would come to terms with the tax and start seeing it, because of its contribution to tax revenues and hence to the non-interest surplus, as an essential component of the program.¹⁹

D.—B. The Choice of the Anchor

Given the worrisome outlook for Turkey's debt dynamics, much of the design of the program was guided by the desire to get interest rates down as soon as possible. The monetary framework, or the choice of a "nominal anchor", was of course an essential part of this. No doubt, lengthy discussions inspired by the history of failed stabilization programs preceded the introduction of the program.

It was quite clear from the beginning that, in Turkey's circumstances, organizing the framework around an exchange rate anchor or a pre-announced crawl as it turned out, would have important advantages, but it was much less clear what precise form the anchor would take. An exchange rate anchor would kill two birds with one stone – chronic inflation and high real interest rates – thereby contributing to improved government debt dynamics. According to the accepted wisdom, inflation would be reduced with a money-based anchor as well, but that would have associated with high interest rates, and a recession in the early phases of the program.²⁰ The country was already in a deep recession, because of the Russian crisis, which had affected Turkey both through trade flows and high interest rates, and later, by a series of earthquakes. A money-based program would thus likely generate resistance from the very beginning, and threaten the political sustainability of the program.²¹

But exchange rate-based stabilization programs carried some well-known risks as well. They often ended in currency crashes, with Mexico (1994) and Brazil (1999) being some recent fairly dramatic examples. In fact, at the time the Turkish program was being negotiated, the U.S. Treasury and its powerful boss, Larry Summers, had made up their minds, including the pegged regimes

in a “not to do” list for emerging markets.²² The recipe for disaster in exchange rate-based programs would typically run as follows. Inertial inflation would lead to low real interest rates and a lending boom, which in turn would lead, usually with a few years lag, to a large current account deficit and banking sector vulnerabilities. In parallel to all this, capital flows would increase, thanks to the implicit guarantee on the exchange rate, bolstering the lending boom.

The IMF (as well as some bureaucrats) was well aware of many of the risks and vulnerabilities that would emerge in the Turkish case. As we elaborate on below, there was much debate about whether an upfront devaluation could help given the known risk of real appreciation once the rate of crawl was reduced. There was less worry about the possibility of a lending boom, given the low initial levels of lending ratios in Turkey. And hence capital controls and administrative measures to limit a lending boom were not considered very intensively. If there were to be a demand boom, there was an agreement to rely on fiscal policy, as the conventional wisdom called for. A top IMF official discusses the risks:

There was no doubt that the exchange rate peg and soft pegs in particular involved some risk. But to bring interest rates down, which previous programs failed to do, this seemed the only option. It is also true that there was a lot of Turkey specific uncertainty on what effect a peg would have on interest rates, demand, and inflation because there was no previous experience and because of the peculiarities of inflation in Turkey, namely its long duration, the fact that inflation never reached hyperinflationary dimensions, and the presence of informal, low frequency indexation. (In the end it turned out we underestimated the inertial component of inflation). This uncertainty meant one would have to maintain flexibility in response to shocks and unanticipated developments. For this, the program envisaged the fiscal tool would be used.

Mr. Fischer expressed a similar view:

The question was how Turkey would get out of trouble if they got into it. There was an understanding that fiscal policy would be tightened if the program went off-track.

As a way of assigning extra credibility to the peg, the IMF considered a full-fledged currency board from the outset, but the Turks resisted the idea, partly because of the troubles Argentina was already going through at the time, and partly because it was a foreign concept. The bureaucrats at the CBT also opposed the idea on the grounds that they needed more flexibility in the exchange rate, and that Turkey's large non-tradable sector would have difficulty in withstanding adverse external shocks. The IMF itself was not uniformly in favor of a currency board arrangement either. While it would be the most powerful mechanism to give credibility to the peg, "preconditions", notably as regards the banking sector, had not been met in full.²³

A compromise solution emerged to "mimic" a currency board as much as possible. In a currency board, the monetary base is backed by foreign exchange reserves, so as to lend credibility to the domestic currency.²⁴ Maintaining such backing by foreign exchange reserves means monetary financing of government deficits is ruled out, as this would create an increase in money supply, without a corresponding increase in foreign exchange reserves. "Mimicking a currency board", in turn, meant a monetary policy framework whereby all additional base money would be created through balance of payments inflows and thus foreign exchange purchases of the central bank, i.e. increases in net foreign assets (NFA) rather than through domestic credit to the government and the banks, i.e. net domestic assets (NDA).²⁵

In the Turkish case, NDA would be roughly constant within a narrow corridor established to take into account short-term fluctuations. Reflecting the "perils of sterilization," experienced in the Latin programs of the early 1990s, capital inflows would not be sterilized (that is, the increase in the money supply resulting from capital inflows would not be mopped up through sales of government bonds). This would allow a rapid decline in interest rates and avoid an excessively large interest rate differential, which would have perpetuated the inflows and imposed quasi-fiscal costs.²⁶ Similarly, capital outflows would not be sterilized either (that is, the shrinkage of the money supply as a result of capital outflows would not be offset through purchases of government bonds), so as to lead to a prompt increase in money market interest rates, to ensure that foreign exchange reserves would be protected.

These “currency board rules” were in sharp contrast to a more common IMF program design, which would merely involve a ceiling (and not a floor) on NDA. As a top official at the IMF explains:

The term currency board by itself had some magical powers, but more fundamentally, this design meant there would be no slack in monetary policy to accommodate outflows. The currency board could not accumulate room as under a standard NDA ceiling and use this in the case of pressure on the exchange rate.²⁷

An advantage of the scheme according to its designers was again its anticipated effect on interest rates and thus government debt dynamics, but some important technicalities, it appeared, were overlooked in the meanwhile. Mr. Fischer noted:

The program was designed to get interest rates down. In the beginning the inflows were fine. There were discussions about what to do when flows left. The Turks argued that it would be symmetric. There was no appreciation of how much interest rates would increase as outflows started, that there would be such an asymmetry in interest movements.

In fact, simple balance of payments arithmetic suggested that, given that inflows would unlikely be “saved” as international reserves and likely associated with a widening in the current account deficit, there would be a major squeeze in the event of significant outflows. In addition to this technical rigidity, which, as we discuss below, turned out to be fatal in November, a rapid reduction in interest rates was a double-edged sword, helping debt dynamics, but at the same time fueling a lending boom. Thus the non-sterilization policy of *in*flows added to the typical problems of exchange rate-based stabilization programs. Measures to counter a boom were not part of the initial program design, and all adjustment was thereby squarely put on the shoulders of fiscal policy. Direct controls on banks to curb lending were apparently not discussed at all at the design stage of the program, but only later after the lending boom got underway.

But as Mr. Fischer put it, this was tolerable in Turkey’s circumstances to a large extent:

On controlling a lending boom, there is no good theory on what to do except for direct limits on the banks. Increasing interest rates wouldn’t help with capital inflows. Lending booms are difficult to control, as shown for example in the case of Brazil. Plus, Turkey

was in the process of creating business ratios that are more normal. Consumer credit was low to begin with. We could have been seeing a stock adjustment.

Capital controls, which would indirectly help control lending, often referred to as “throwing sand in the wheels”, were discussed, but discarded. A top official at the IMF explains:

There were discussions about “throwing sand in the wheels” at various points. But there were concerns that enforcement would be difficult on the side of the Turks. They had dismantled the controls apparatus at the end of the 1980s and were not too interested in putting them back.

Mr. Fischer added:

On hot money flows, small taxes might have helped. But the main aim of the program was to avoid a debt crisis by getting interest rates down. Hence there was no attempt to slow hot money inflows. There was no great willingness to do this by the central bank, which was very pro-market.

As noted above, there was much internal debate on the need for an upfront devaluation. This need was a function of initial competitiveness and the envisaged deterioration therein over the course of the program. In the end, the Letter of Intent concluded that a real appreciation of 10% over the life of the program should be sustainable. An econometric exercise by IMF staff suggested that as of end-1998, the various real exchange rates were 0-5% undervalued compared to their long-run equilibrium values, though there was some controversy about this within the Fund²⁸ as well as in Turkey.²⁹ The final decision also apparently reflected concerns about the risks that an upfront devaluation would entail for the banking sector.³⁰

Having dropped the option of an upfront devaluation, the exchange rate crawl anchor was augmented with both an accelerated rate of crawl in the months leading up to the start of the program and an “exit” strategy to assuage concerns about competitiveness, essentially reflecting the wisdom then prevailing at the Fund.³¹ Specifically, in July 2001, the pre-announced rate of crawl (a monthly rate of depreciation of 2.1% in January 2000, gradually falling to 1% in December 2000) was to be replaced by a gradually widening band, with a width of 7.5% at mid-2001 which would increase a further 7.5 percentage points each half year until the lira was fully floated at the end of 2002. Still, Stan Fischer

apparently had worries about the exit mechanism, that it was too slow, and that the transition period to a full float was too long.³²

The other side of the coin of currency board rules, non-sterilization of *outflows*, had different risks associated with it than non-sterilization of *inflows*, i.e. a severe restriction on the lender of last resort function of the central bank. While the rules placed no limits on providing credit to individual institutions, the effect on NDA of which could always be offset through open market operations, it did restrict the provisioning of liquidity overall, say, in the case of loss of confidence in the banking system.

The limited availability of the lender of last resort function under currency board rules was part of the reason for the emphasis on structural measures taken in the banking area in the design of the program. According to a top official at the IMF:

The structural measures in banking were needed anyway to eliminate insolvent banks and increase the credibility of the banking system, but we hoped that they would also be helpful in other respects. Incidentally, lending to specific banks was allowed under the currency board rules, as there was no ceiling on lending to individual banks, as long as the liquidity was mopped up through open market operations.

The Turkish side was somewhat concerned about the risks in case of systemic liquidity needs of operating a quasi-currency board. The view of a top bureaucrat in Ankara, which was expressed to the IMF team during program negotiations back in 1999, was that as long as there was a sizeable amount of short-term repos with the central bank, i.e. with banks being dependent on liquidity provision by the central bank, one should not have a quasi-currency board. Short-term repos should first have been gotten down to zero from the then TL1.2 quadrillion or some \$2.2 billion. In response, the IMF reportedly countered that if the central bank reduced liquidity provision this would lead to higher interest rates on government securities.

Another suggestion floated by the central bank in the discussions of the management of capital outflows under quasi-currency board rules, was that of contingency funding by the IMF (as was done in Poland in the early 1990s). While the IMF staff appeared in favor, delays by the government in making its commitment to the IMF left Turkey in a bad negotiating position and a final agreement was rushed without the contingency

mechanism.³³ Instead, Carlo Cottarelli reportedly indicated that if the need arose, the Fund had the possibility of “coming to the rescue.”³⁴ In the end, the way the monetary framework was put in practice was a compromise, reflecting the advantages of the exchange rate as a nominal anchor especially in Turkey’s circumstances, the accumulated experience to date about certain weaknesses of exchange rate-based programs and the Turkish bureaucrats’ ardent opposition to a strict and orthodox currency board.

One last crucial point regarding the choice of an anchor involved the role of “incomes policy”. It appears that, while recognizing its importance, the IMF did not succeed in pushing the implementation of incomes policy outside the public sector. Civil service sector wages and prices were aligned broadly in line with future inflation, but private sector pricing decisions were left in a vacuum, while public sector wages were suffering from the overhang of a two-year contract signed before the program started. The idea of gathering the Economic and Social Council was suggested by Dani Rodrik of Harvard University, who was then acting as advisor to the Governor of the CBT, as a forum to control wages and sign up an implicit contract, but unfortunately it was never put in practice.³⁵ One major problem in that connection was the absence of a strong political figure who could pull various parties, the business community, unions, and bankers, around the same table and get them to agree on an inflation target and avoid “overburdening” the exchange rate anchor. The PM was too frail and detached from the program and the Minister in charge of the Treasury, who would be the natural candidate for such a role in the Turkish context, was not up to the job. Instead, as we discuss later, the program implementation was left to two senior bureaucrats – Governor Ercel and the Treasury Undersecretary Demiralp – who would see their support slowly but surely erode, as the going got tougher in the summer months.

E.—C. Tackling “Live and Let Live”

Perhaps one of the biggest challenges in program design was the management of a subtle trade-off between ensuring lower interest rates (for purposes of debt dynamics) and regulating (or when needed cleaning up the system of) Turkey’s weak banks in an environment of shrinking bank profitability, *because* of the decline in interest rates. High interest rates and profitability, based on a

T-bill carry-trade, were closely linked in a “Live and Let Live” game of the kind discussed in the Introduction. With the Turkish Treasury borrowing locally in lira and local depositors’ preference for dollar-deposits, Turkish banks had always maintained sizeable open foreign exchange positions. Of course, interest rates could have been increased to entice depositors to hold lira deposits, but this would not be profitable for banks, nor desirable for the Treasury, as it would have led to higher T-bill rates.³⁶ Thus, the Turkish Treasury, which at the same time held the supervisory responsibility for banks, preferred to close its eyes to transgressions on open position legislation. As a result, banks relied heavily on un-hedged open positions, the most profitable source of financing, which was also perceived as relatively risk-free under the real exchange rate rule pursued before the IMF program. This was a well-known game that no one dared to do much about. As a top bureaucrat put it,

The last 10 year’s fiscal problems led to an almost active neglect of supervision by governments so as to facilitate large open positions. The bureaucrats knew the dangers. Back in 1997, the idea of an independent banking agency was floated by the then Undersecretary Egilmez, but the government was not at all responsive.

In principle, the IMF program had a clear strategy as to how to finish off this game. It called for a reduction in the domestic debt stock, through fiscal adjustment, privatization, and more external borrowing by the Treasury, all of which would reduce the Treasury’s dependence on banks. Furthermore, domestic depositors were expected to shift in part from foreign exchange to lira deposits in line with the increasing stability of the lira, which would mean a reduction in open positions. At the same time, reforms strengthening banking supervision were introduced under the IMF program, including, most importantly, the introduction of a new supervisory agency with operational independence, regulations on consolidated reporting (which would make it more difficult to hide open positions abroad), market risks, and related party lending and penalties for open positions in excess of legal limits.³⁷

The strategy made sense, but perhaps in the long-term, and with perfect program credibility. In fact, the so-called “reverse currency substitution” by households from foreign exchange to TL expected in the program never materialized.³⁸ This may have

reflected lack of credibility of the program in the public's eyes, but also the high cost to banks of taking TL deposits.³⁹ Furthermore, capital inflows were in large part intermediated by the banking sector, contributing to a further increase in banks' open positions, rather than directly invested in the bond market.

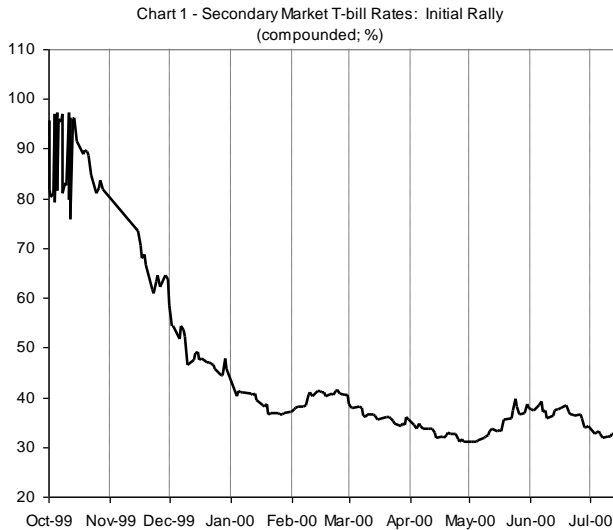
With hindsight, many, and to be fair, including IMF top officials, believed that the Banking Regulation and Supervision Agency (BRSA) should have been made operational earlier. This would have helped control open foreign exchange positions and other risks in the banking sector even if the flipside would have been higher interest rates. Economist Mr. Ozturk put it as follows:

Independent banking supervision should have been introduced at the beginning. When it geared up it was too late. The November sequence could have been avoided. With a weak banking sector based on funding T-bills with overnight borrowing and foreign exchange open positions, the program was inherently risky. However, everyone was interested in tolerating the risks. The Treasury was in a conflicting situation as the supervisor of banks, yet the borrower in the market.

It would also be fair to say that when the program was being designed, no one thought that the "transition" would become such a mess and the risks would grow to such proportions. Though an illusion in hindsight, it seemed that an intermediary path, no matter how thin, was possible whereby a gradually declining debt stock would be carried, in due course, by a deeper and stronger financial sector, thanks to the benefits of disinflation. Alas, things went in a completely opposite direction!

Initial Success Leading to Twin Vulnerabilities

In the early months of the program, implementation was strong, and interest rate developments were much better than expected. Rates rallied rapidly from the mid-70s in November down to 40% in February, and even reached a low of little over 30% around April (Chart 1), which compared extremely favorably to the budget assumption of about 50% on average for the year as a whole.



This was all great news. In its March Letter of Intent, which marked the successful conclusion of the First Review, the IMF would confirm that the program was fully on track and praise the government for undertaking a number of policy actions including, among others, “the passing of the Telecommunication Law and a strong Budget; a prudent wage policy; and the cutting of discretionary spending.” January-February inflation had been a negative surprise, the IMF said, but added that this reflected, in

addition to inflation inertia, several other factors that were likely to fade away.⁴⁰

As is typical for Turkey, the market was overoptimistic and initially priced in perfection, ignoring possible delays in implementation. If the past were to be a guide, a correction to interest rates would be inevitable at some point, leading to serious problems in bank balance sheets. The excessive rally in interest rates thus constituted a first vulnerability in the banking sector resulting from the success of the program. Meanwhile, banks massively opened foreign exchange positions, way beyond prudent limits. This was fostered by a “supply boom,” or an eagerness by foreign banks to lend to Turkey. Bank supervisors closed their eyes initially, happy about the interest rate rally associated with foreign inflows. According to one estimate, open positions had reached a striking \$15 billion already by March-April, compared to a permissible \$2-3 billion.⁴¹ The large open foreign exchange positions were a second vulnerability in the banking sector. In conjunction with the opening of positions came a boom in consumer lending. While this led to a better than expected growth performance, which came as a relief to a country coming out of a deep recession, it also contributed to the massive widening of the current account deficit. This was a third source of vulnerability. These negative effects on the banking sector and balance of payments were a source of concern and hence vulnerability to financial crisis. All this was happening against the backdrop of a deteriorating international environment. Oil prices had reached \$30 per barrel by mid-2000 from the lows of \$15-20 a year earlier, and Europe’s new currency was struggling against the U.S. dollar. Being a net importer of energy, and given the lira’s peg to a “basket” of euro and U.S. dollar, with a somewhat larger weight assigned to the dollar, they both mattered greatly. Nevertheless, none of these vulnerabilities were unmanageable and some of them, such as the widening in the current account and lira “overvaluation”, were partly transitional. They nonetheless had to be tackled from the very start.

A. The Scramble for Assets

The launch of the IMF standby program meant the beginning of a new era for the markets and the Turkish banking sector. With few exceptions, banks believed in the program and soon came to the conclusion that to survive, they would have to diversify away from

traditional T-bill purchases and the “carry trade.” They aggressively positioned themselves in a “scramble for assets,” and began to compete for what was a limited non-traditional asset base. Foreign financing was amply available, as the program, combined with improved prospects of E.U. accession, had boosted the confidence of foreign investors.

The deposit “carry trade”, whereby banks funded T-bills through lira and U.S. dollar deposits and repos, was considered “passé.”⁴² While the decline in interest rates had been initially associated with large windfall gains for the sector even after the retroactive tax, the profitability of T-bills would be much reduced looking ahead, because of a lower risk premium, as well as lower inflation that would reduce float revenue on demand deposits.⁴³ At the same time, as noted above, the IMF program envisaged a shift from domestic to foreign financing mainly through eurobond issues, and a reduced financing requirement as a whole. The latter also meant a lower lira-denominated government bond supply, in real terms.

Thus survival was predicated on the ability to move to real banking from financing the government and Turkey’s “over-banked” environment spelt consolidation. The following quotes, before and around the time of the crisis, sum up the sentiment:

A lower inflation and lower interest rate environment will eventually remove much of the foreign exchange/interest rate arbitrage activities and the yield benefits from investing in government securities. Banks will have to develop “real” business franchises—commercial loan portfolios and other business lines.⁴⁴

In the next 18 months, the Turkish banking sector will be undergoing painful changes in its structure, in the strategies of banks and their performances. [...] Consolidation within the Turkish banking sector is inevitable in the long-run, with smaller banks finding it more difficult to adapt to the new environment.⁴⁵

The expected transition to an era of “real banking”—including tougher regulation, lower inflation and shrinking interest margins — has already pushed 10 out of 40 Turkish commercial banks into state administration.⁴⁶

If the experience of other countries is any indication [banking] could prove to be the Achilles heel of the Turkish adjustment effort.

The smaller private banks and the state banks are likely to prove the main challenge in the second [2001] and third years of the program.⁴⁷

This is the Darwinian age of Turkish Banking. [...] The big four are fine. They have enough capital, people, technology. [...] But for the rest: who knows?⁴⁸

Turkey has 81 banks. The reason there are so many is that in a high-inflation, high interest-rate economy, the government has habitually run big budget deficits. In its desperation to finance this borrowing requirement, successive administrations liberally granted banking licenses knowing that they would have a captive audience for bond issues. The result, today, is that roughly three-quarters of Turkey's banking institutions have no business being in business. If the IMF-sponsored anti-inflation program succeeds, at least half of them will have to be closed down over the next three to five years. Hopefully, some will be acquired or merged with stronger institutions; but the remainder will have to be taken over by the government's deposit insurance fund.⁴⁹

These prospects prompted many Turkish banks thinking about developing alternative asset bases as quickly as possible in order to ensure market share. As a result, during February-April, the Turkish banking system rushed to transform itself from a system revolving around T-bills, deposit taking, and repos, to mature market finance (e.g., venture capital, private equity, e-commerce, mortgage finance).⁵⁰ Bank lending shifted to consumer lending, including credit card and mortgage lending, while banks also buried themselves enthusiastically in Turkish eurobonds.⁵¹

Turkish banks obtained credit easily and cheaply from abroad. Such credit took the form of syndicated loans, but also structures with London and New York-based banks. Total syndicated loans in 2000 were about \$6 billion, or double 1999 levels, with almost \$4 billion of that going to the largest 4 banks. Perhaps more striking, major banks obtained syndicated loans at 50 basis points (bps) over LIBOR (excluding origination fees), while smaller banks managed to pay only 75 bps over LIBOR. Foreign currency financing of structures could be obtained at 200 bps over LIBOR. Foreign banks were very eager to engage in such structures as late as summer. Local currency structures funding T-bill positions were also of a large magnitude, about \$5 billion.⁵² As eurobond trader, Mr. Serkan Turk, put it:

In June-July, one or two banks were visiting us every week to offer us eurobond repos. In total, eurobond repo lines in the country were well over \$1 billion.⁵³

This strong supply of funds, in conjunction with the aforementioned reduced local supply of T-bills, left the banking sector with ample liquidity to finance consumer and business lending, which rose by over 50% from about \$18 billion at end-1999 to over \$29 billion at end-2000. Consumer loans more than doubled from some \$4 billion to almost \$10 billion.⁵⁴

But there were two major downsides to all this: first, an increase in both interest rate and foreign exchange risks on bank balance sheets; and second, credit growth fueling an already burgeoning current account deficit. A number of banks were onto the idea that “exchange rate-based stabilization programs often fail” and adopted a more cautious stance as early as during the summer months. A banker at one of the top 4 banks explains how his bank paired down its T-bill portfolio during July, switching to floating rate notes to control for interest rate risk in its balance sheet:

The banking sector was overloaded with fixed income securities without matching liabilities and I worried about the sustainability of the program because exchange peg based programs generally fail. The program had no cure for the financial system, monetary policy was not calling for a contraction and the current account was expanding. The system was carrying huge risks and not making money as overnight rates exceeded yields. We switched our T-bill portfolio in June and July to floating rate notes. However, markets were fine, auctions were well bid, interest rates fluctuated in a narrow band from 36-37% to 33-34%, and our reducing our portfolio was not a great concern. Many other major players were still buying T-bills in July.

A banker at another top bank explained how its bank switched from T-bills in June to the money markets:

Though we never believed in fixed exchange rate arrangements such as crawling pegs or currency boards, we played along and bought T-bills like others in the first half of 2000. We started to sell T-bills heavily in June and became more conservative on consumer lending, offering higher interest rates than others. We placed funds overnight and with state banks.

Mr. Bayazit, a top executive of a medium-sized bank, explained how its bank too started pairing down its T-bill portfolio in late summer.

We had been enlightened by a J.P.Morgan presentation on how similar programs worked and the risks thereof. We had been struck by the cycle of exchange rate-based stabilization programs. At some stage, because of credit expansion and reduced margins, troubles would emerge. While we too increased consumer lending, we watched for signs of trouble. The first sign of trouble was that interest rates on consumer loans fell to 2-2.2% monthly in May-June, as T-bill rates were still higher. A more serious sign came in August/September as T-bill rates started to rise. We then started to reduce our T-bill portfolio.

F.—B. Overheating and the Current Account

The rapid widening in the current account deficit, largely driven by the fast pace of imports, became apparent early on. The lending boom, recovery in economic activity, and the real exchange rate appreciation (especially vis-à-vis the euro), as well as the hike in oil prices, all combined to yield a sharp swing in the current account from the previously depressed levels. By early July, the IMF projected that the current account deficit would be 5-5.5% of GNP for the year as a whole, compared to initial program projections of 3%, on account of stronger economic growth than initially projected.⁵⁵ IMF early warnings and recommendations for measures to contain demand were ignored, while Ankara started to drag its feet on its earlier commitment of implementing counter-cyclical fiscal policies when needed.

Mr. Fischer commented on how, “in June-July, the officials with whom the Fund had been dealing were unable to deliver the agreed fiscal tightening that was then becoming necessary.” Local banks also saw the current account deficit as dangerously large and became concerned about the delays in measures to reduce it. According to a top bureaucrat at the Treasury, Mr. Emil:

If we, in mid-2000, had taken steps to alleviate concerns about the current account, through demand management policies, discouraging imports, we would have been OK. However, for politicians growth was important after the earthquake. At a panel discussion in later in September 2000 in Antalya, Cottarelli was quoted by newspapers as having asked for incomes policy, which elicited a sharp response from the PM stating that he

would not take directives from the IMF. This gave the appearance of a rift in policies between the IMF and the government.

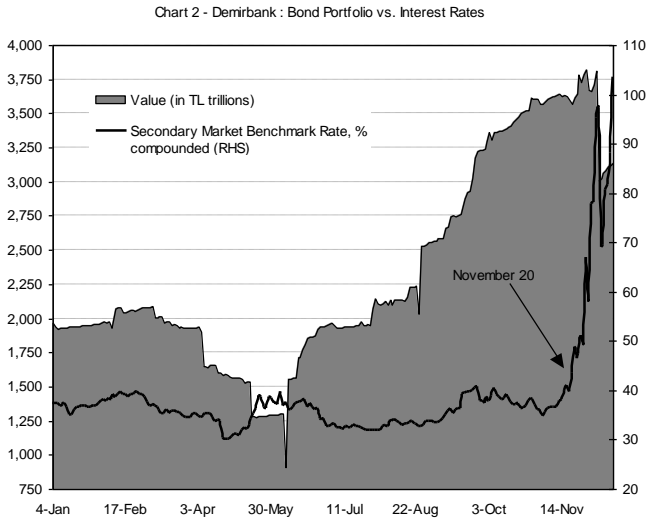
Interestingly though, a good chunk of the widening in the current account reflected elements which would unlikely prove permanent, notably the rise in energy prices. Specifically, of the 5½% projected current account deficit, about two percentage points reflected the impact of higher oil prices on imports. Thus, adjusting for oil prices, the IMF's 3% target would only be overshoot by ½% of GNP.⁵⁶ Meanwhile, although the lira lost competitiveness with the \$/Euro rate moving from around one at the beginning of the year to a low of 0.84, before ending the year at 0.94, exports, a traditional early warning variable for currency crises, kept growing, albeit at a slower rate. On the whole, eleven-month cumulative export figures were unchanged in 2000 compared to the average for 1996-1999 (at around \$29 billion).⁵⁷

Moreover, as we elaborate in Chapter VII below, the overvaluation claims reflected, in good part, hasty conclusions drawn from experience elsewhere, notably failed Latin programs of the 1980s. True, the slow pace of inflation convergence to the pre-announced crawl made fighting public perceptions of overvaluation difficult, but overvaluation was not at all severe in the Turkish case – an observation shared by late Rudi Dornbusch who had a good reputation for smelling it in a number of Latin cases – especially after accounting for productivity increases that partly compensated for the real appreciation. In fact, one big mistake in the “selling of the program” to a skeptical public was exactly that: a lack of emphasis on productivity leaps that the program sought to achieve, along with a moderately appreciating exchange rate, thanks to a rigorous structural reform effort.

G.—C. Demirbank's Game

Among the Turkish banks, Demirbank, a medium-sized bank, with a reputation for being a risk-taker, started an expansion of its non-T-bill asset base aggressively, as it vied for market share under the leadership of its major shareholder, Mr. Cingillioglu.⁵⁸ Its credit card business expanded rapidly, from 30,000 to 550,000, along with an explosive growth in its branch network. Interestingly, as it positioned itself for “real banking”, Demir reduced its T-bill portfolio from over TL2 quadrillion to TL1.3

quadrillion from February through end-May 2000 (Chart 2) and became “long” in the money markets.⁵⁹



According to Demirbank staff,

Demirbank believed the IMF program would be successful and saw the main 2001 and 2002 risks as being asset creation. Corporate lending would not expand, as eligible corporates' needs were already fulfilled. Retail credit was booming in 2000 and that growth would not continue. The Turkish Treasury would be borrowing less domestically, under its policy of placing only 75% of redemptions domestically. In June, Demirbank decided for expansion and opened 100 new branches, its share in retail credits expanded from 2 to 10%. Demirbank aimed for the first or second largest market share in Turkey.

Naturally though, Demir's expansion involved large investments and, notwithstanding windfall profits on T-bill positions established before the stabilization program, it became apparent by May that prospects were for negative profits for end-June. This is when Demirbank reportedly decided to enter back in the game of government debt as a big player. On the first auction of June (June 7), it purchased TL650 trillion of the August 2001 paper, which, combined with the purchases of its sister-bank Ulusal, reportedly amounted to 80% of the auctioned amount. Interest rates at that auction were 41%, the highest since November 1999. According to Demirbank staff, it earned TL100

trillion in one month, which allowed it to report profits at end-June.

Mini-Crisis

Two massive privatizations, the sale of a third GSM license for a whopping \$2.5 billion to an Is Bank-Italian Telecom consortium in April and the sale of a large stake in the petroleum concern POAS to another consortium earlier, perhaps marked the peak of the government's program effort. As reform fatigue started to set in, following these partly impressive and partly euphoric developments, market morale started to deteriorate rapidly during the summer months. Politics was also a big part of this shift in sentiment, with the nomination of a new President turning up as a major fiasco for the coalition partners. The coalition's cohesiveness was tested for the first time as the two senior partners, DSP and MHP, opted for the incumbent Demirel to be reelected while the junior partner ANAP maneuvered to have its leader Yilmaz to take the post. On a last minute decision, engineered by PM Ecevit, the leaders managed to agree over the nomination of the chief of Constitutional Court, Necdet Sezer, as President.⁶⁰

Meanwhile, the former and much feared Minister of Finance Temizel, known for his relentlessly tough style, was appointed as the head of the newly established banking watchdog, BRSA, which was scheduled to start operations in September as called for by the new Banking Law. There were essentially two broad reactions to Temizel's appointment: Some believed he was the right man who would "clean up the mess and get all the crooks." Others believed it was a bad choice, sort of a situation of delicate surgery left to a non-expert.

Amid this mixed mood and slowing reform efforts, the summer months would proceed relatively quietly, except for a "mini-crisis" in September, with T-bill rates increasing by some 7 percentage points to almost 41% by late September, and eurobond spreads rising by almost 90 bps. This increase in rates was paired with a "flight to quality," notably a shift in investments to the CBT money market.

A. Reform Fatigue

About 6 months into the program, there were already signs of reform fatigue. The politicians were growing more complacent, and it would increasingly look like the program had no “owner”. The top bureaucrats continued to try, but to no avail. In fact, in one disturbing episode, the Minister in charge of the economy would even snap at them for breaching their domains.⁶¹

The IMF was fully aware, stating, “...in spite of these positive results, the work remains unfinished”, in its June Letter of Intent. Behind closed doors, IMF warnings on the macro-front were stronger, but were being ignored. Only in September were a few measures taken to curb domestic demand, an increase in the resource utilization support surcharge – a tax on bank loans to consumers – and an increase in the VAT rate on luxury cars. In August, several structural benchmarks in the 1999 Letter of Intent were not met, notably, the required number of “extra-budgetary funds” were not closed and regulations on internal risk management systems as well as an amendment to capital requirements to properly reflect market risk were not issued. Moreover, designing a strategy for restructuring the banks under the management of the Savings Deposit Insurance Fund (SDIF) dragged on, raising questions on the competence of the newborn agency, and compounding the uncertainties regarding the outlook for banking sector reform. Unsurprisingly given Turkey’s history of unconstitutionality declarations, and with a judge for President, there were a number of difficulties on the privatization front as well, with Turkish Telecom turning into a disastrous saga. As a consequence, the third review of the IMF program was not concluded.

The headline trigger in September – on September 26 to be exact – was President Sezer’s not signing the decree which was to enable the commercialization of state banks, a condition for the World Bank’s Financial Sector Adjustment Loan, which caused interest rates to move from 34% to 38%.⁶² September also saw problems with cashing in the revenue from the GSM license and mounting anxiety as telecom prices fell globally. On the political side, concerns about the viability of the coalition resurfaced because of the rising tension between the PM and the President, combined with Welfare Party closure talk. An economist at a large foreign investment bank sums up the sentiment as follows:

Up to June, Parliament passed certain laws and implementation of the program was impressive. From June to November almost all implementation stopped. In June 2000, sentiment started to change on account of concern about wrongdoing allegations against Deputy Prime Minister Yilmaz and tensions between MHP and ANAP. MHP started to emit negative signals, indicating that there would be a slowdown in reform efforts. Parliament was in recess and things were ok. In addition, in June-July there were signs of overheating. Credit expansion was huge especially at the retail level as banks shifted their focus from T-bills to retail. With overheating, a widening current account deficit and inflation not coming down soon enough, and in the absence of measures such as taxes, concern about the currency developed. No measures were implemented until fall when the resource utilization surcharge was raised. The IMF and World Bank seemed to have lost some excitement. By mid-October or so, foreigners' exposure had declined.

In the end, privatization shortfalls were substantial, amounting to more than half of the planned \$7.6 billion in revenues. Coming on top of the surge in imports, privatization shortfalls caused problems for the monetary program, as liquidity was squeezed under the constant NDA rule. In September-October, foreign exchange deposit rates increased to 13-15% and rates were seen as going to 22-25%.⁶³ "The balance of payments was hurt as we did not get the long-term financing as the privatization of Turk Telecom was delayed. The lack of liquidity as a result led to gradually increasing interest rates."⁶⁴

As the Treasury sought to offset shortfalls on privatization revenues by issuing more eurobonds, this was associated with a sharp decline in eurobonds in September. According to a eurobond trader, Mr. Serkan Turk:

In September, it became understood that telecom would not be sold, leading to a shortfall of \$3-4 billion in privatization revenues. The Treasury wanted to tap eurobonds as a substitute and did its first tap on the 2010s, which caused no problem. Two days later, our sales department received calls from London asking whether there would be a tap of the 09s. As there was news of a second tap in mid-September, price levels fell from 109 to 105. Then margin calls started at 105/104 for the 30-year bond. As 75-80% of liquid issues were held by local banks, this caused trouble locally.

H.—B. Bandits or Financiers? Banking Sector Under Fire

While reform was stalling in most areas, in the area of banking supervision by contrast, worries of stricter enforcement of rules came to dominate the market. The banking system had long had a variety of problems that needed fixing. In addition to an excessive dependence on government debt instruments, it was known for related party lending – and there was fraud in a number of banks reflecting a lax and politicized supervision process – and because of deposit insurance, troubled banks could continue to attract depositors, imposing unfair competition on healthier banks. Banking licenses were given very easily and decision-making was politicized. Furthermore, as noted earlier, balance sheets were very risky because of maturity mismatches, the very short-term nature of borrowing (notably repo with customers and banks), and large open foreign exchange positions.

The birth of the new banking supervision agency, the BRSA, whose mandate, in effect, was to clean up this mess, had not been easy. For months, coalition members tried to appoint their own people to head the institution, as well as to the seven posts that made up its board, politicizing the institution before it was born. Naturally, politicians were fearful of losing their grip on a very lucrative sector. But the World Bank and IMF pressure prevailed in the end, and the BRSA opened its doors at end-August 2000, on schedule. Yet, the long delay in appointing the board members and the political haggling that accompanied it sent the wrong signals regarding institution's effectiveness going forward.

Enter Zekeriya Temizel in early September, whose surname literally means “Clean Hands”, as the Head of the newly established BRSA. From his Ministry of Finance days Temizel had a reputation for being unyielding, and was known for his penchant towards introducing good legislation but with poor timing. Temizel had proposed imposing financial taxes in August 1998, when banks and the government T-bill market were already under severe pressure in the wake of the Russian crisis.⁶⁵ While many bankers had high hopes initially after the establishment of the BRSA, because they expected less politicized decision-making and an end to the easy granting of licenses, they became increasingly worried subsequent to Temizel's entry on the scene.⁶⁶

In his approach or general philosophy, Mr. Temizel, was a “Mulkiye” man to the bone, a graduate and later an honorary alumni of the so-called “Mekteb-i Mulkiye”, or Faculty of Political

Science of Ankara University. As one of the oldest schools of public policy education in the country, modeled after France's once mighty *Ecole Nationale d'Administration*, the School provided, for generations, a large supply of bureaucrats in public policy, who typically hold a "statist" or "top-to-bottom" approach to public affairs, with a large dose of skepticism toward free markets as well as toward the business-savvy and flashy life in the metropolises of the country, especially in Istanbul.

One of the first actions of Temizel, true to his name, was to jail a number of allegedly corrupt bankers.⁶⁷ In late September, as part of "Operation Hurricane", Murat Demirel, the nephew of a former President and the owner of Egebank, which had been taken over in December 1999, was arrested as the whole country watched the footage from a security camera showing Mr. Demirel lugging suitcases, allegedly filled with cash, out of Egebank. In late October, the BRSA took over two more mid-sized banks (Etibank and Bank Kapital), one of which was owned by the influential Medya Holding, one of the two largest media conglomerates in the country.⁶⁸

What was this strong Ankara man going to do next? Everyone started wondering... Who would be next banker to be jailed? What was the true extent of problems in the banking sector and how many more banks would be taken over, and what would be the budgetary cost of bank takeovers? Would banks be penalized for their large open foreign exchange positions? How large were these positions of banks and how would they be closed in an orderly way? According to a banker,

With the Demirel videos, the mood in the country transformed. There was a huge effect of the jailed Egebank people. Who would say who was a crook? In early November, a jet-set restaurant's waiter joked that the restaurant was empty because his clients were in jail.

In a speech to business leaders and academics, Mr. Tantan, the Minister of Interior and an ex-police chief declared, "the battle has just begun." "Thieves and exploiters who should be locked up are able to wander around us as respected people and are even greeted with bowing and scraping. Let no one tell us to stop the operations."⁶⁹ The actions, far from inspiring confidence, however, raised red flags including among foreign investors. As an EVP in charge of the Treasury of a large Turkish bank put it:

Publicity around the jailing of bankers (in newspapers, on TV) was like retaliation, and raised many questions among international creditors and investors. Creditors and credible institutions of the financial world could not believe bankers with whom they did business for so many years were involved in shady deals, and they started questioning even us. The whole system, the program, government, financial institutions, bankers, lost credibility.

Rumors of future bank takeovers were extremely widespread and casually shared by even the most-respected figures of the business community. Euromoney reported that between 6 and 10 other banks might soon be taken over and said the banking sector was, “going through the worst crisis in its history and is on the verge of a consolidation that will certainly leave many casualties behind.” Late Sakip Sabanci, head of one of Turkey’s largest conglomerates and a most respected businessman, would declare in his characteristically candid style, “If you take your binoculars out you will see another 20” and “There is no country in the world as corrupt as Turkey; in this we must be champions.”⁷⁰

Subsequent to their take-over, non-performing loans on the balance sheets of the banks taken over by the SDIF mushroomed, pointing to the fact that banks had successfully hidden non-performing loans prior to their take-over.⁷¹ In the most glaring example, the ratio of non-performing to performing loans of Yurtbank (which was taken over at end-November 1999) increased from 6% of the loan-portfolio in 1998 to 19-fold at end-1999 and 75-fold at end-2000 (Ozatay and Sak, 2002). This made observers realize that official statistics only reflected the tip of the iceberg and added to concerns about the ultimate cost of bank-takeovers to the budget.

Temizel’s entry also created anxiety about open foreign exchange positions, starting in September, and reaching its climax in November. Though the law stipulated a limit for open positions at 20% of equity, banks maintained open positions equal to a large multiple of this through a number of tricks. The entry of Temizel on the scene accelerated the exit from these open positions by banks that in many cases had planned to unwind these positions by July 2001 when Turkey was to exit from the crawling peg to a band. Some believed that even the entry of Temizel was a non-issue, arguing that banks could always find ways around regulations, but most were concerned. Lehman Brothers would later write in a research note:

The Supervisory Board urged the banks to reduce their net open foreign exchange positions—and bring them in line with permissible limits. This resulted in banks selling their T-bill and eurobond positions to repay their foreign obligations.⁷²

Mr. Timurkan expresses the markets' anxiety at the time as follows:

August saw the launch of Temizel with his message “I am in control and I won't tell you about my plans or what my punishment will be”. The natural inclination for banks was to start closing positions and selling off T-bills. Come September, Temizel was constantly complaining and banks did not know what to do.

By then open positions were too large to be closed in an orderly way. The Banks Association figures for on-balance sheet open positions in the second quarter of 2000, released in August, were shockingly high, at \$19 billion, well in excess of the 20% of capital legally permitted.⁷³ In principle, this was a “gross” figure and should not have been taken at face value, but it was nevertheless large enough to put the issue under the spotlight.⁷⁴ Nevertheless, Mr. Ekrem Keskin, Secretary of the Banks Association of Turkey, noted that, far from being shocked by the Banks Association figure of \$19 billion for June 2000, some bankers had commented on how this number was probably a tremendous underestimate.⁷⁵ This reflected the fact that the figures did not include an unknown amount of off-balance sheet structures with London specifically designed to mask open positions.

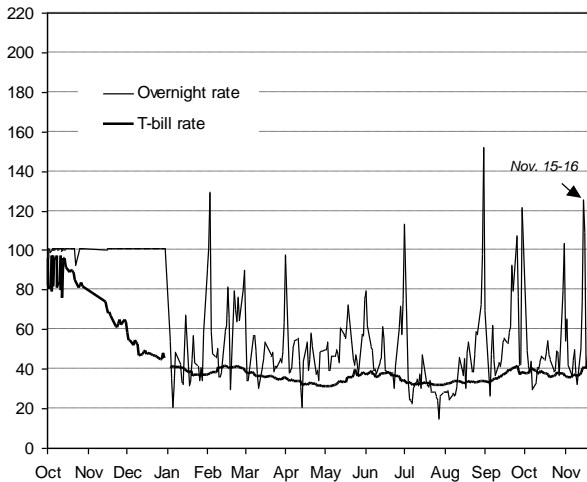
According to an EVP in charge of the Treasury of a Turkish bank,

The size of structures is difficult to know. The BRSA may have an idea as after the crisis they examined structures and illegal operations. Based on conversations with bank colleagues, corresponding to reasonable sized Turkish banks accounting for 80% of the total, open positions including structures were \$15-16 billion, excluding SDIF banks, before November.⁷⁶ There were two types of structures: those that involved dollar funding by an investment bank of a TL asset and those intended purely for window dressing. As for the latter, Turkish banks would place dollars with foreign institutions, which converted the funds to lira, and sold structured products.⁷⁷ These would show as a dollar asset but in fact be a local currency asset. This type of

structure did not have very strict covenants, as it was Turkish money.

In addition, banks managed to maintain large open positions in offshore subsidiaries, which were less closely scrutinized than local branches. There also appears to have been some window-dressing at the end of each month, as can be gleaned from Chart 3. The chart shows spikes in overnight interest rates at the end of each month, which is suggestive of the fact that Turkish banks required TL liquidity in order to buy foreign exchange from the central bank, and sold it back the next day.⁷⁸

Chart 3 - Secondary Market Yields and Overnight Rates
Oct. 1999-Nov. 2000



The genie was left out of the bottle. Bank creditors started asking about the banking sector open positions;⁷⁹ panic ensued among some foreign investors, with some foreign investment bank traders reportedly calling clients to exit Turkey⁸⁰ and during the IMF-World Bank annual meetings in Prague at end-September, a controversy erupted over open positions between Governor Ercel and the market analysts.⁸¹ After the meetings the CBT addressed analysts' questions by posting an explanation on its website, noting that part of the open positions referred to positions of banks taken over by the SDIF, that it didn't properly account for foreign exchange indexed assets (which were counted as lira assets), and that a large proportion of open positions were hedged by forward contracts. The \$19 billion, explained the CBT, included the \$6 billion open positions of banks under the SDIF, whose

positions were artificially inflated (because upon takeover dollar assets were converted into lira assets) and \$2 billion open positions in foreign banks. The Banks Association data of \$19 billion did not take into account \$11 billion in forward F/X contracts, which offset the open position.⁸² Excluding SDIF banks and taking into account forwards, open positions were only \$2 billion, or within legal requirements. While markets found the explanation relatively comforting, many remained skeptical.⁸³ This was not surprising given that Turkish bankers themselves were admitting that some the forward contracts were fake or, in their own words, they were merely “drawer contracts”.⁸⁴

That open positions were large in reality was verified with the February crisis, as local banks rushed to close their open positions during and after the crisis and there was a large demand for a swap of lira-denominated government securities into dollar debt. Direct evidence that the forwards with group companies were window-dressing was given when forwards were recontracted at higher exchange rates after the crisis and when banks, notably Akbank, announced that they would not insist on settlement of the forward contracts. Akbank announced that it had “benefited from the presence of these open F/X positions and thus should bear the resulting damage as well.” (BSI Turkish Research, “Turkish Banks”, April 12, 2001). Table 2 provides data on open positions for individual Turkish banks, as of end-December 2000.

Table 2 - Open positions, December 31, 2000

(in US\$ million)

| | Akbank | Garanti | Isbank | YKB | Alternatif | Disbank | Finans | TEB |
|---------------|--------|---------|--------|--------|------------|---------|--------|-------|
| Bank-only | 1.958 | 1.231 | 531 | 721 | 468 | 44 | 379 | 140 |
| Consolidated | 1.958 | 1.711 | 474 | 818 | 475 | 100 | 782 | 0 |
| FX contracts | 1.791 | 1.098 | 222 | 493 | 463 | 71 | 375 | 135 |
| Net bank-only | 167 | 133 | 309 | 228 | 5 | 27 | 4 | 5 |
| Equity | 1.615 | 1.220 | 2.447 | 2.483 | 104 | 306 | 329 | 139 |
| Assets | 10.983 | 9.866 | 11.635 | 11.208 | 962 | 1.715 | 2.994 | 1.537 |

Source: Bayindir Securities; April 12, 2001.

The IMF and BRSA started to pay closer attention. In October 2000, the CBT in cooperation with the BRSA sent a letter to all banks stating the criteria that would be followed in disqualifying

forward purchases of foreign exchange when calculating banks' net open position. These included non-market terms for the contract. The IMF team started to label the forward hedges as "doubtful" and to insist on measures to address the issue. Over the next 6 months three missions from the Monetary and Exchange Affairs Department investigated the issue of open positions.⁸⁵

According to an economist at a large foreign investment bank,

In November, the BRSA started to get serious. True, Turkish banks booked open positions offshore, but there was also a debate about that, the BRSA was going to check them. If the BRSA knew what banks were doing, they could threaten them. They are very powerful and can always find something. It wouldn't take much to estimate open positions.

Mr. Alpturk, then Board member at Korfezbank:

Concerned about open positions and a BRSA regulation which asked for closing of positions by early 2001, some bank share holders pushed management of banks with large open positions to aggressively reduce their open positions before year-end. Temizel was serious about closing of positions, and as at the time of the Russian crisis, insisted on good regulations but with the wrong timing. The prospect of the switch to a band in July 2001, which implied foreign exchange losses, also led to the strategy of reducing open positions during November-July. Around mid-November, local banks were closing positions. Temizel was later persuaded to reverse its insistence, which had some effect in the November crisis, and in December-January banks adopted a looser stance towards open positions.

Come mid-November, London banks were concerned that the IMF would insist on an early closing of positions before the usual end-December date and that the BRSA would track down structures in London, and hence find out investment banks' "dirty business".⁸⁶ Borrowing from abroad and in dollars on deposits kept interest rates low, so market participants figured that a reversal would lead to higher interest rates at home. This would spell problems for Turkish banks, and the sustainability of public debt.

I—C. Demirbank's gamble

As the situation deteriorated, Demirbank continued to increase its exposure to T-bills. It bought almost half of the February 2002 paper (TL500 trillion; Chart 2) at the August 22 auction. While foreign appetite was weak at the auction (reportedly \$2 billion was redeemed to foreigners but not rolled over⁸⁷), Demirbank remained enthusiastic given that August was the largest redemption of the year and that afterwards there would be little issuance, which would leave Demirbank in the position of the “sole” supplier of paper in the remainder of 2000.⁸⁸

As interest rates rose in September, Demirbank, among other banks, adopted a defensive stance to prevent interest rates from rising and to ensure that they would not have to write mark to market losses. This took the form of concertedly high bids at auction by some big banks. Demirbank bought large amounts of T-bills in the secondary market.⁸⁹ According to Demirbank staff, it was confident in the success of the stabilization program and believed that, should the program fail, all banks would go under anyway.⁹⁰

It financed this expansion of its securities portfolio with overnight borrowing. As a consequence, from May to September, the volume of repo transactions on the ISE by Demirbank more than quadrupled⁹¹ so that Demirbank borrowing together with that of its sister bank Ulusal,⁹² amounted to some 50% of the total overnight borrowing there.⁹³ Including OTC borrowing from banks, customer repos, and central bank repos, Demir's overnight borrowing was \$3.3 billion at end-September,⁹⁴ compared with a deposit base of \$3.6 billion. In terms of regulations, there was nothing wrong with this, as regulations then in place did not take into account market risk. But in the process, Demirbank became very vulnerable to interest rate risk.

Demir's buying started concern about its liquidity and solvency. According to EVP of Treasury of a large Turkish bank:

Since June, July, our kids on the Treasury floor had been joking: what if one day nobody sells through ISE, what will happen to Demir? Demirbank and Ulusal were borrowing the majority of the overnight funds of TL2½ quadrillion on the ISE.

A number of economists at investment banks and analysts in Turkey started to track the ‘portfolio return’ of Demirbank in September. They noted that the portfolio return was about 36% (compounded) in August but Demirbank borrowed O/N at 42-49%

(compounded). With such a large “negative carry”, there was concern that a few months of high overnight rates could be enough to bankrupt Demir.⁹⁵ Starting in September, credit to Demirbank began to reflect these concerns. According to a source from Demirbank:

Our structures with a London investment bank were to be signed in September. They called us to tell us that they had decided not to go ahead, saying a visiting manager from a big Turkish bank was badmouthing us (large portfolio, how would it be funded?). Around that time more than 20 banks called Demir’s foreign relations department saying some big Turkish banks were badmouthing us. They felt threatened by our expansion into retail business.

Locally, some of the medium-sized Turkish banks reportedly also stopped working with Demirbank in September. The large Turkish banks Akbank and Garanti cut certain lines to Demirbank on October 31, involving \$33 million in the case of Akbank and \$50 million in the case of Garanti.⁹⁶ Two of the largest foreign investment banks also reduced their lines to Demirbank in October, but by then their concern was not only Demirbank but Turkish banks and investments more generally, and lines were cut to several banks.

There were also concerns that liquidity and solvency problems at Demirbank would spill over into the rest of the banking sector and the ISE, where banks were engaged in collateralized overnight borrowing. According to a banker:

What happened on Black Wednesday was cosmetic. The real issue was that there been overoptimism and that rates had rallied too low. In the long swing back up, a mid-size bank with large exposure to T-bills would go bankrupt. This could lead to deposit runs, dumping of securities and a meltdown of the financial system. Some foreign and conservative Turkish banks left the ISE repo market in mid-October because of concerns over Demirbank and fears of a systemic crisis.

It would be premature to conclude, however, that Demirbank was experiencing liquidity problems or nearing insolvency, right before the November crisis.⁹⁷ As a staff member of Demirbank noted:

The S&P rating 3 weeks before the crisis was B1, notably the highest rating for a Turkish bank. Demirbank received a \$140 million syndicated loan that was disbursed on November 23rd. This was a fresh loan and it could have been pulled back. “We went to market with \$75 million and because of excess demand, the loan was increased. No foreign depositors switched their deposits from Demir to other banks. There was no criticism by S&P or our international auditor, or the BRSA. We were basically taking country risk; we would fail if the country failed. In the Russian crisis, Demirbank held a \$5 billion portfolio and made money.

The November Crisis

A. Prelude

Following a tumultuous September, financial markets were relatively calm in October. By the middle of the month, the Government submitted a 2001 Budget to Parliament targeting a primary surplus over 5% of GNP, broadly in line with the estimated outcome for 2000.⁹⁸ Despite some doubts over the attainability of the revenue target, which implied a need for measures, the budget signaled the political will to continue with the IMF program and was generally well-received by market analysts.⁹⁹ The CBT was also looking calm, organizing “Inflation Targeting” seminars in preparation for the phase that would follow Turkey’s exit from the peg.

But the mood remained bleak, with no major breakthrough on the economic reform front. The Government increased the sale tranche of the Turkish Telecom to a 29% stake, up from 20% in early October upon seeing no interest by its mid-September deadline. But the Communication Ministry, which was under the MHP portfolio, continued to win the battle over the more reformist wing.¹⁰⁰ Ironically, the estimated market value of what was once Turkey’s jewel had already slipped to a few billion dollars from almost \$20 billion in the early 1990s.

But the banking sector was perhaps the biggest worry. As discussed earlier, the “true” size of open foreign exchange positions of banks had become an often-discussed issue, especially in investment bank circles in London, and questions loomed about whether the BRSA and IMF would insist on closing large open positions even before end-year.¹⁰¹ The ongoing “anti-corruption drive”, although endorsed by a great majority of Turks, had taken an uncontrollable life of its own. There was little doubt at this stage that the campaign had triggered a, “I could be the next” syndrome in the business community. Foreign creditors too were alarmed, having heard rumors following the take over of

Etibank and Bank Kapital in late October, that many more troubled banks, including Demirbank, might be at large.¹⁰² And all this occurred in a context of worries about the sources of the profitability of the banking sector, given the extent of taxation of the sector and the new low-inflation, lower domestic debt environment.¹⁰³

In November, investors got increasingly edgy, as this backdrop was compounded by worries about the ever-widening current account deficit (negative August trade data were released in early November, later followed by balance of payments data by mid-November, which recorded, quite unusually, a large deficit in a peak month of tourism revenue), uncertainties over the collection of GSM proceeds, and the market impact of the envisaged \$6 billion issue of rehabilitation bonds to recapitalize existing SDIF banks.¹⁰⁴ And all this was happening in a context of fast approaching “bonus time”, i.e. the time of the year when foreign traders reduce exposure to avoid a last minute accident on their “hard-earned” bonuses throughout the year, as well as to comply with internal risk controls. Similarly, local players too were concerned about the end-year, by which time they would have to close their positions in part to comply with internal and external regulations, as well as preparing for the scrutiny of their books by potential creditors (notably syndicated loans). This anticipated closing of positions in turn worried foreign investors. A London investor explains:

Before the November crisis, deterioration on the macro-reform front was already clearly evident. Some investors went underweight in August 2000, due to reform fatigue, massive credit growth, and balance of payments problems. So the table had already been set for a crisis. It was not news that IMF was going after the government to reduce open foreign exchange positions. Markets had simply thought for most of the year that (a) they would not be able to find everything, and (b) it was not convenient for the authorities to reduce positions too much or too quickly. But as the macro picture blackened, markets began to realize that incremental pressures to reduce open foreign exchange positions in a framework of a very large current account deficit was not a nice environment to be long TRL. So as we got closer to end-year, markets got increasingly nervous about open foreign exchange positions. Then rumors that the IMF back-to-office report contained measures on open foreign

exchange positions began to feed into the system. This added another bit of pressure.

Amid this bleak mood, pressures began anew. Virtually every day from the second week of November onwards the daily devaluation rate at market opening was substantially higher (about twice the rate at which the CBT fixed its pre-announced rate of crawl).¹⁰⁵ The stock market, which had been declining throughout the year, lost a substantial 24% through the first three weeks.¹⁰⁶ In the second week of November, there were deposit withdrawals at Demirbank and other private banks, including at least one of the top banks, amid worries about Operation Hurricane. Interest rates climbed up in the secondary market, from little over 35% to 40% between November 3 and 17. Also in mid-November, a hedge fund (many references were made to Moore Capital in the interviews, but this was only guesswork and probably wrong) is said to have sold the majority of its multi-billion position in T-bills and moved to a repo-type structure,¹⁰⁷ and American and European banks raised “haircuts”, i.e. margin requirements, on eurobond lines.¹⁰⁸

These developments added to concerns in an already segmented market about Demirbank and other banks carrying large T-bill portfolios and dependent on overnight funding. Yields on the papers predominantly held by Demirbank had increased by over 300 bps between November 3 and 17, causing mark-to-market losses.¹⁰⁹ At the same time, with overnight rates persistently above T-bill rates, the negative carry on T-bills accumulated into large losses, and given projected balance of payments developments, there was no prospect of rates easing.¹¹⁰ Bankers started to wonder when Demirbank would implement a “stop-loss” and sell T-bills.¹¹¹ Demir being a major holder of securities, this would send shock waves through the market. In investment bank circles, the intellectual focus in those days was also on banking crises, with, for example, by J.P. Morgan hosting a dinner on the topic.¹¹²

The IMF meanwhile was very concerned during its November mission, and reportedly it told the authorities that there would be a crisis within 5 months.¹¹³ On **November 7**, it sent a letter to Treasury Undersecretary Demiralp cautioning him that a number of pending issues would have to be resolved in order to complete the discussions for the third and fourth reviews of the program. As was reported in the press, the letter drew attention to overheating and the size of the current account deficit and

requested identification of additional fiscal measures¹¹⁴ and structural measures in the areas of bank resolution and in the enforcement of foreign exchange exposure regulations and other prudential ratios.¹¹⁵

Ankara was responsive to the concerns and on November 15, the IMF mission concluded an agreement on strengthened policies in the fiscal, banking and privatization areas (including a larger stake for Turk Telecom up for sale by end-March), as announced at a joint press conference.¹¹⁶ In the fiscal area, the measures were consistent with a primary surplus of 5% of GNP, and consistent with a reduction in the current account deficit of some 2% of GNP (to about 3% of GNP in 2001). In the evening, Parliament approved long overdue legislation to commercialize and eventually privatize Emlak, Ziraat, Halk, and Vakiflar. On November 16, the authorities announced a long-awaited plan for 10 banks that had been taken over by the SDIF that involved their full recapitalization and preparation for sale. But the market reaction was muted. In fact, overnight rates spiked on November 15—on the ISE, the overnight rates (simple) reached 92%, as “Operation Hurricane,” (the name was increasingly apt!) unsettled the markets, with 11 more detained in the Egebank case.¹¹⁷

Developments on the foreign policy front were also taking a negative turn quite different than the year before. Turkish-E.U. relations reached a critical point as the E.U., because of interventions by Greece, added the age-old sovereignty problem in the divided island of Cyprus and the territorial matters in the Aegean to the list of mid-term issues to be addressed before membership talks could start. Agreement could not be reached in the meeting of E.U. foreign ministers on November 19 on Turkey’s Accession Partnership document, with some key Turkish cabinet members reacting negatively to E.U.’s demands.¹¹⁸ Political uncertainties such as divisions between coalition partners over certain issues and the closure case in the Constitutional Court against the main opposition Virtue Party (FP), which could lead to by-elections, also had investors worrying.¹¹⁹

The general sense of unease notwithstanding, it is still fair to say that the explosive increase in interest rates and the subsequent loss in foreign exchange reserves in the week of November 20 took everyone by surprise. In the words of a foreign investor, “Still, there was no expectation of crisis. There was an IMF program. We envisaged that the exchange rate would by June 2001 be at the top of the planned band.” The policy limbo that

had been going on for a while also appeared to have been reversed, as the IMF and the government, as mentioned above, announced their agreement on a new set of measures. Yet Turkey was on the verge of losing \$7 billion in international reserves, a decline in its stock market index of more than one third, a doubling of bond yields, and a surge in money market rates to historical highs.

The trigger of the crisis is still shrouded in mystery. Reportedly, the manager of a hedge fund based in the Caribbean claimed to have unwound a \$1 billion position over several days before heading on a skiing trip over the Thanksgiving holiday on November 23. The press also reported that the concerns of foreign investors who accounted for the majority of the initial outflows were lack of privatization, banking sector rumors, and the potential cost of insolvent banks to the Treasury. The “official version” as expressed by IMF, portrayed an entirely different story, referring to T-bill sales by a liquidity short Demirbank, which in turn triggered a panic in the T-bill market on November 21.

The dynamics of the November crisis was largely about the “unwinding of structures.”¹²⁰ Structured products, both eurobond and T-bill repos, were a main vehicle through which domestic banks obtained financing from abroad, and were much less stable than syndicated loans (Annex III). The unwinding was at play throughout the November crisis, though it is difficult to be precise about dates. It took three forms: margin calls, whenever interest rates increased (and the price of collateral dropped); the reduction of lines (or what amounted to the same thing: an increase in the margin requirement) dedicated to structured products (“repo lines”); and liquidation of structures through the sale of the underlying collateral. As long as liquidity was available, domestic banks were by and large able to meet margin calls and withstand the cutting of lines without recourse to the sale of collateral.

This changed at the end of November, however, when the reinstatement of the NDA target led to a liquidation of structures through the sale of collateral, leading to a further sharp jump in T-bill rates. The underlying source of pressure on interest rates which led to margin calls was the steady selling of T-bills reflecting stop-loss sales by foreign investors, liquidation of collateral when margin calls could not be met by hedge funds and banks (or when covenants allowed the sale of collateral automatically without recourse to a margin call)¹²¹ and short-selling of collateral by proprietary desks at foreign investment banks. Proprietary desks of investment banks reportedly took advantage of the situation:

knowing that liquidity was short, they sold the collateral in the structures (a “short sale”), creating a vicious circle in bond prices, and making profits in the meantime (see Annex III). As noted, the exact timing of such short sales is difficult to pinpoint however.

We now turn to a daily account of the developments from November 21 until the takeover of Demirbank and the arrival of the new IMF money.

J.—B. Chronology¹²²

November 21 marks the beginning of the November crisis. The day before, the ISE had declined by 7% in the wake of banking scandals and Operation Hurricane. Also, several rumors to the effect that Demirbank was experiencing funding difficulties had started to circulate and on the 21st, the market opened nervous on the back of rumors of T-bill sales by Demirbank. The Treasury had already announced an FRN auction for the day. The auction did not go well, with the Treasury selling only some TL85 million (net) at a 54% interest rate (this would be the last FRN auction for some time to come). The high interest rate was a clear signal that things were not going right and a crisis was brewing.¹²³ In fact, a panic soon developed in the T-bill market following rumors that Demirbank had started to dump its T-bill portfolio.

Ironically, though widely held, the rumor of sales by Demirbank was in all likelihood false.¹²⁴ Its balance sheet (including bonds held in structures and repos) shows no decline in holdings on November 21 (Table 3).¹²⁵ Demirbank had sold some T-bills during the week of November 13-17, and while the amounts were very small, this had created considerable anxiety.¹²⁶ Possibly, the source of the rumor on the 21st was sales by Demirbank as a primary dealer.¹²⁷ Yields of the bills held by Demirbank (notably the February 20, 2002 paper) did temporarily fall out of line with other yields (Chart 4; for details see section VIII.B), but this is also consistent with panic selling by others. To the contrary, Demirbank appears to have been a buyer of T-bills that day, to stem the decline in prices which would otherwise prompt margin calls (for a full discussion, see Chapter VII).

But the market jumped to the conclusion that Demirbank was selling T-bills because it matched other stories well, notably a rumor that had had started to circulate the previous day that two large rival banks (Akbank and Garanti) had cut their interbank lending to Demir.¹²⁸ This also is likely to have been a false

rumor.¹²⁹ There were also yet again false rumors that Demirbank failed to secure a \$250 million syndicated loan¹³⁰ and that a \$250 million structure on the February 21 2001 paper was being pulled on Demirbank by Deutsche (there was no such structure according to the banks involved).¹³¹ But all these rumors had credence given the pressure that rising interest rates had put on Demir's liquidity and solvency over the past weeks and months, and also given that market observers believed that strict implementation of the banking regulations was leading to cuts in credit lines of small banks by large domestic banks.¹³²

**Table 3 - Demirbank: Bond Portfolio
(face value; in TL trillions)**

| Bond Definition (dd/mm/yy) | Kas 15 | Kas 16 | Kas 17 | Kas 20 | Kas 21 | Kas 22 | Kas 23 | Kas 24 |
|---------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 240101 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 210201 | 5 | 8 | 8 | 3 | 7 | 7 | 1 | 12 |
| 230501 | 201 | 201 | 201 | 201 | 195 | 195 | 195 | 200 |
| 200601 | 161 | 128 | 75 | 75 | 65 | 60 | 38 | 52 |
| 180701 | 635 | 640 | 613 | 633 | 618 | 623 | 603 | 610 |
| 220801 | 1.390 | 1.397 | 1.413 | 1.434 | 1.426 | 1.423 | 1.421 | 1.421 |
| 121201 | 90 | 70 | 70 | 100 | 132 | 87 | 52 | 42 |
| 230102-ANA | 9 | 9 | 9 | 9 | 9 | 12 | 12 | 12 |
| 200202 | 1.170 | 1.177 | 1.171 | 1.189 | 1.192 | 1.185 | 1.185 | 1.185 |
| 150502-ANA | 78 | 87 | 87 | 98 | 98 | 115 | 115 | 124 |
| 240702-ANA | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| Total | | | | | | | | |
| Discounted | 3.756 | 3.734 | 3.664 | 3.759 | 3.760 | 3.724 | 3.638 | 3.675 |
| 060101 | 148 | 148 | 154 | 154 | 154 | 154 | 154 | 154 |
| 210201 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| 210301 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 |
| 031001 | 196 | 196 | 196 | 196 | 196 | 203 | 203 | 203 |
| Total | | | | | | | | |
| Fixed Coupon | 421 | 421 | 426 | 426 | 426 | 433 | 433 | 433 |
| 230102 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| 150502 | 177 | 177 | 177 | 177 | 178 | 181 | 178 | 178 |
| 240702 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| 140802 | 198 | 198 | 198 | 198 | 198 | 198 | 198 | 198 |
| Total Floating | | | | | | | | |
| Rate Coupon | 390 | 390 | 390 | 388 | 388 | 391 | 388 | 388 |
| TOTAL | 4.567 | 4.545 | 4.480 | 4.573 | 4.574 | 4.548 | 4.459 | 4.496 |

Source: Demirbank.

Chart 4a: Yields of Selected Bonds: November 2000 Crisis
(% compounded)

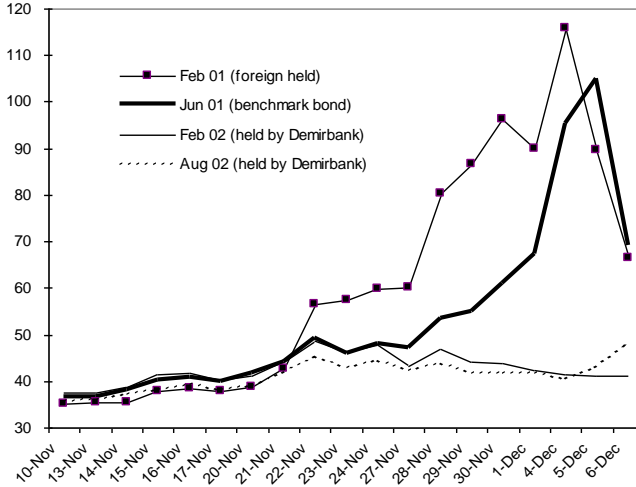
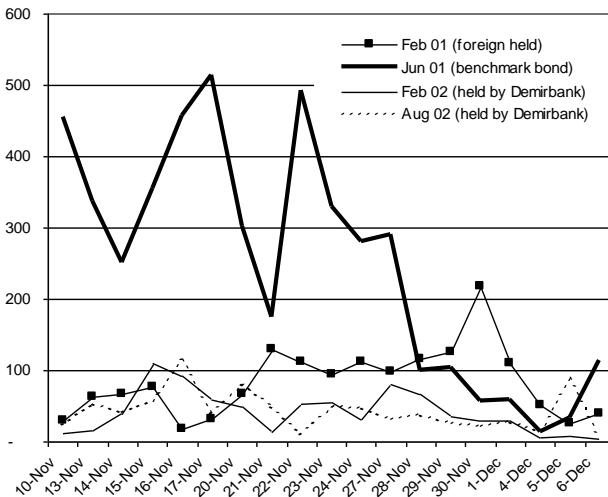


Chart 4b: Volumes of Selected Bonds: November 2000 Crisis
(in TL trillions)



Despite most likely being false, the rumors appear to have been a trigger for the crisis as they fueled panic among traders who had planned to offload part of their bond portfolio as they closed open positions. High interest rates then triggered stop loss sales by foreign investors.¹³³ Primary dealers suspended trading of

securities around 11 a.m., which meant they stopped quoting bid and ask rates. A banker interviewed by Reuters put it this way:

Rate increases on the back of small sales, led to a panic given the desire of traders to offload their positions over time to square open positions. Market makers soon restricted quotations as rates became very volatile (rising from 35 to 55-56%). Foreigners got out early as they felt rates around 42% were abnormal. ... TL10 trillion worth securities in 10 minutes changed the price, the market for \$45 billion securities, and the country's economy and future.

Around this time, banks requested a buy-back auction for the Feb 21 securities (which were short-term and held by foreigners who were trying to exit). A response came only 5-6 days later in the form of a buy-back, which was too late."¹³⁴

Essentially, small amounts of bond sales started to have a disproportionate impact.¹³⁵ Mr. Aksel, trader at YKB, provides further information in relation to the primary dealership system:

The primary dealership system had not been working properly in the past 2-3 weeks. At most 5 banks were giving quotations as they should. As rates increased on the 21st, all banks took off quotations from the screen around 11 or 12AM. There was a clear panic. The breakdown of the system itself did not create the panic among foreigners, the panic was already there. There were still some sales, however, with foreigners selling their bonds at very low prices. Primary dealers then got a warning from the Treasury to resume market making at 2PM that day, but I remember no prices in the afternoon.

The volatility in bond markets in turn raised questions about the safety of investing at the ISE repo market. ISE repo operations are collateralized, and this collateral is recalculated every day, but the size of collateral is limited. This led to a desire to shift repo operations from the ISE to the CBT-guaranteed money market where lending was fully guaranteed. There were also doubts about Demirbank's ability to meet margin calls, on account of the sharp increase in interest rates, the next day. ¹³⁶ The EVP in charge of the Treasury of a large Turkish bank explains:

The market estimated that Demirbank was facing margin calls of some \$300 million and wondered how it would come up with this extra margin. The ISE had a margin requirement, but if

Demirbank couldn't deliver the extra margin, this would offer little protection.

Around this time, possibly in response to the market turmoil, possibly as a cause, foreign investment banks reduced their foreign exchange lines to local banks by raising the margin requirement on eurobond repos or by cutting lines altogether.¹³⁷

Turkish shares ended down 5%, following a decline of some 7% the previous day (see Annex II), and this was attributed to concerns over the continuing probe of SDIF banks and fears that brokerages and listed companies could be the next targets of investigation.¹³⁸ Banking shares were hit, with Demirbank shares ending down 10% and "blue-chips" banks down as much as 6-7%.

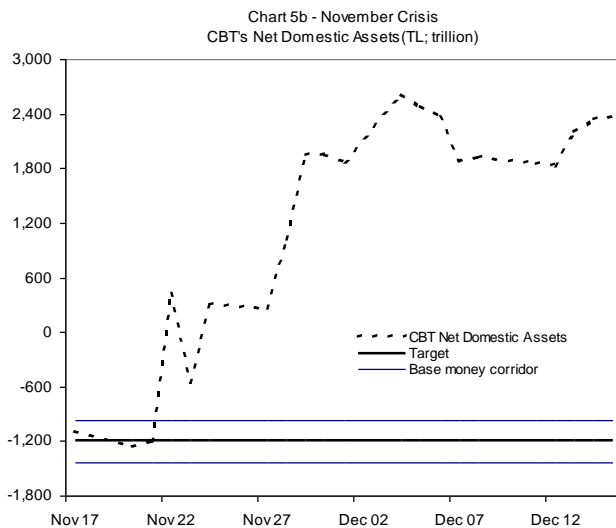
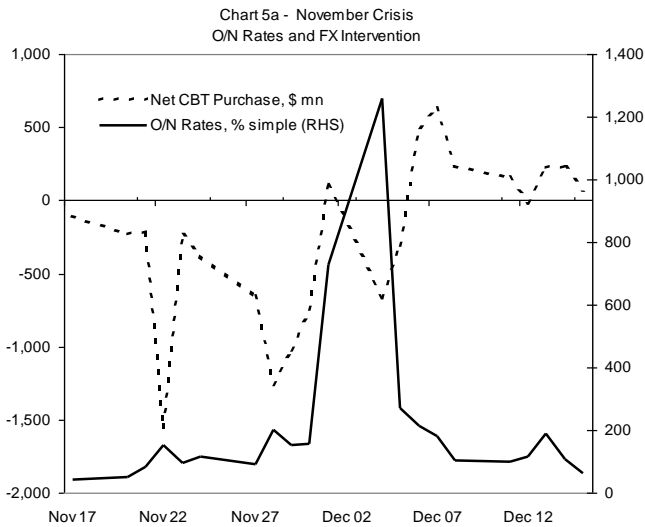
Government officials referred to speculation that more banks were in line for bailout, threatening to prosecute those who started the rumors, "putting the whole system at risk for the sake of grabbing a better market share." (Turkish Probe, December 3, 2000). The PM made a strong statement indicating the Government's commitment to the economic program. In his statement, he said that any measures taken by the BRSA were for the health of the sector and that a good portion of major difficulties were being addressed.¹³⁹

Meanwhile, the CBT apparently designed a plan to flush the market with liquidity.¹⁴⁰ According to a bureaucrat present at a meeting at the BRSA:

We gathered at the BRSA. Mr. Temizel was chairing the meeting. Faik Oztrak, then Deputy Director at the BRSA was also present. In the meeting, Governor Ercel explained his plan to flush the market with liquidity. At that point there were already two types of banks (good and bad) in a completely segmented market. Especially one large bank was a key player in all this, being a very liquid one. The Governor's plan was to flood the market with liquidity, punish the liquid banks for a few days and then mop it back up.

On **November 22**, the day that would be remembered as "Black Wednesday," foreigners, apparently already concerned about a possible devaluation, began to exit "en masse." This, in turn, set in motion a chain reaction with concerns about whether there would be sufficient liquidity in the market, and how exactly Demirbank would be funded. The CBT held its normal repo auction at 10 a.m.¹⁴¹ Demand for liquidity was very high and the CBT injected TL380 trillion at interest rates of 175% simple! Then,

by 10:30 a.m., just half an hour after market opening, the CBT sold \$1.2 billion in foreign exchange to major foreign investment banks and some liquid local banks,¹⁴² the latter buying partly on their own account, partly to meet client demands. For the day, the total foreign exchange outflow amounted to \$1.6 billion (Chart 5 shows foreign exchange intervention and developments in NDA during the November crisis).



As foreign banks unwound their positions with local banks and at the ISE, local banks tried to borrow more from the CBT, or in the case of liquid banks, liquidated overnight positions in the ISE repo market and deposits with state banks, shifting the pressure there.¹⁴³ Demirbank turned to the CBT for financing, upon which the pressure lifted in the money markets, but the NDA target was breached. Later it was announced that Deutsche Bank and its clients (Deutsche Bank had the lion share of client money) had accounted for a large share of the \$1.6 billion foreign exchange outflow.¹⁴⁴ Reportedly, Deutsche's clients' main concerns were the lack of privatization, the banking sector rumors, and the cost of insolvent banks to the treasury.¹⁴⁵

Investors started to worry about the consequences of the foreign exchange outflow. Would the Central Bank fund Demirbank and break the NDA ceiling or would it allow the payment system to break down? According to an economist at a foreign investment bank:

There was the question of how Demirbank would be funded (on Wednesday) and how to get out before others. I received 30-50 calls about this. The devaluation word circulated from the start.

Another economist at another foreign investment bank commented:

I think different perceptions about how the government would react to Demir's liquidity problem were leading to different scenarios. These seemed inspired by the Russian crisis. A key player, who had been involved in Russia, kept making comparisons to what had happened there. The most popular scenario was the one which indeed materialized to a certain extent: the government would bust the NDA ceiling by injecting liquidity into Demirbank and the increased lira-liquidity would put extreme pressure on the currency peg. The other (much less popular scenario) was that the government would abide by the NDA ceilings, would not inject liquidity, Demirbank would then default on its liabilities, bringing down several other banks. The government would then have to clean up the banking sector but would have to do so under a different IMF program.

According to the EVP in charge of the Treasury of a large Turkish bank:

The whole banking system was focusing on the NDA limit. The market realized the system wouldn't be able to close and

wondered whether the CBT would stick to its NDA target or provide liquidity and fulfill its “lender of last resort function”. If it stuck to its NDA target, overnight rates were expected to skyrocket and perhaps 20 banks were expected to not be able to square their positions and default. My traders were already saying, “Demir is gone today!”

Other interviewees made references to herding on the back of the initial large investor exit as well as to investors exiting in response to high interest rates, which acted as a signal that something was wrong.¹⁴⁶ The above quotes illustrate the type of thinking that was occurring simultaneously.

In the meantime Demirbank (which was borrowing about TL1.3 quadrillion daily at the ISE, or 50% of the market) had partially withdrawn from the ISE after seeing rates around 200% and failing to see bids. It believed some of its rivals were withdrawing from the inter-bank market in a deliberate attempt to squeeze it.¹⁴⁷ It requested evening financing from the CBT.¹⁴⁸ Demirbank also lost a sizeable fraction of its repo deposits that day. After 5 p.m. the CBT provided Demirbank with TL1.3 quadrillion at 210%.¹⁴⁹ As a result of the liquidity injection that day, NDA increased by TL1.6 quadrillion,¹⁵⁰ leading to the breaching of the TL-1.2 quadrillion ceiling.¹⁵¹ The size of the injection freaked out foreign investors.¹⁵²

At the CBT, the choice had been stark. According to a top bureaucrat:

Given the strong demand for both liquidity and foreign exchange at the same time, there were two options: First, to stick to NDA, putting X banks under the SDIF, leading to a complete collapse and bankruptcy of the country. Second, to breach the NDA ceiling, fight with the IMF, but then kiss goodbye to the program.

As it turned out, the IMF acquiesced to the breach of the NDA ceiling after the fact (given the time-zone differences), pointing out that there was time within the quarter to return NDA to its corridor.¹⁵³

With Demirbank’s shift to the CBT, some banks failed to sell their available funds to the ISE for lack of a buyer and placed funds at a zero interest rate with the CBT. A large Turkish bank, for instance, claims to have been willing to place its funds and that it was waiting until the afternoon in the hope of obtaining higher interest rates, but that no buyer materialized.¹⁵⁴ As a result, banks placed their excess liquidity interest free with the

CBT in the evening and free reserves increased from TL500 trillion to TL1.1 quadrillion. Many observers interpreted the increase in free reserves as evidence of a squeeze of Demirbank (an unwillingness to supply it with liquidity), but withholding of liquidity when a liquidity shortage is anticipated can also be seen as a rational response (a point made by Ercan Kumcu in a different context, see the chapter on “Key Controversies” below).

With its liquidity needs met by the CBT only after 5 p.m., Demirbank defaulted at the ISE, as the funds were due at 5 p.m.¹⁵⁵ After Demir’s “technical default”, the ISE informed banks that the collateral would in principle be the lending banks’. While all knew that they were indirectly lending to Demir, they weren’t sure that this meant they would be holding Demirbank collateral in case of a default. This had been a first test of the workings of the ISE, and a lesson that led to preference for placing funds in the CBT-guaranteed money market and OTC funding of selected banks (including state banks).¹⁵⁶ For the day, overnight rates increased to 153% (simple) and bond yields soared. The rise in bond yields meant that the next day there would again be margin calls at the ISE and CBT, as well as on structures funding T-bills.

The CBT announced that day that in response to a liquidity squeeze in the banking sector, it had taken all the necessary steps to ease liquidity, stressing that the situation was “temporary” and that there would be no deviation from the IMF program. Earlier in the day, Treasury Undersecretary Demiralp said that the authorities were looking for ways to alleviate the liquidity squeeze, and that the release of IMF/WB money ahead of schedule was being discussed. Also, the CBT, Treasury and BRSA made a joint statement indicating that necessary measures would be taken.

On **November 23**, net foreign exchange outflows slowed down to \$250 million. Local banks that had not lent to Demirbank converted part of their excess reserves to foreign exchange and in a related move Deutsche Bank and its clients completed their foreign exchange purchases.¹⁵⁷ Normality returned somewhat, however. Demirbank obtained funding from various sources, including from the disbursement of its \$140 million syndicated loan and OTC lending by Garanti, one of the alleged rivals who had supposedly squeezed Demir two days earlier.¹⁵⁸ NDA declined by TL1 quadrillion for the day.

The CBT announced two buyback tenders on the July and August 2001 paper, one a Treasury buyback auction and the other an outright purchase by the CBT to inject liquidity. The auctions

seemed designed to help Demirbank as Demirbank held TL1.4 quadrillion of the August paper and TL0.6 quadrillion of the July paper (see Table 3 above). Probably the Treasury and CBT's perspectives were that holding this auction rather than doing a targeted intervention helped them avoid "signature risk".¹⁵⁹ Investment bankers expressed concern that further outflows could lead to devaluation and that the massive breach of the NDA ceiling the previous day would create nervousness in the market about the future functioning of the NDA band.¹⁶⁰

In the morning of **November 24**, the mood was hopeful, and the CBT managed to buy foreign exchange, as Temizel would be holding a meeting in Istanbul at which the press expected that measures regarding Demirbank would be announced.¹⁶¹ But in the afternoon, the CBT sold foreign exchange again, because, in one view, "it was clear nothing would be done about Demirbank." Foreign exchange outflows ended at \$380 million for the day.¹⁶² Still, in an attempt to maintain confidence, CBT Governor Ercel, in a television interview, reiterated his intention to continue supplying liquidity to the market and that the targets of the IMF program would not be endangered, stating, "These are temporary actions". Meanwhile, President Sezer signed the legislation to enable the organizational merger and eventual privatization of three state banks.

Apart from some meetings and the announcement by the CBT of an increase in the tax on consumer loans (the "resource utilization fund") there was no further action over the weekend.¹⁶³ There was a midnight conference call with Demir's top shareholder Halit Cingillioglu, senior Demirbank staff, Temizel, Ercel, and Demiralp. Plus HSBC—which was in the middle of acquiring Demirbank—visited Ankara on 26 November, but no concrete suggestions emerged.¹⁶⁴ Also on November 26, the IMF's Stan Fischer made a press release, saying that the Turkish program was on track, and that "it is expected to remain so given the authorities' strong policies for 2001".¹⁶⁵

In the morning of **November 27**, market conditions were almost normal, as the market was somewhat relieved because of the two buy-back auctions being held that day and the Fischer announcements.¹⁶⁶ The CBT held the buyback auctions, one for the account of the Treasury and one for its own account. However, the amount bought was smaller than expected.¹⁶⁷ Ironically, other banks sold better than Demir, whose bids were not

competitive, and Demir only got to sell some TL160 trillion at the auction.¹⁶⁸

The crisis returned with a vengeance on **November 28**. Foreign exchange outflows accelerated (\$1.3 billion outflow), overnight rates skyrocketed and bond prices fell drastically. The ISE benchmark index declined by 9%, reportedly because of “selling fueled by diminished expectations that the government will carry the privatization program and put its fixed-line monopoly Turk Telecom up for sale this year.”¹⁶⁹ And NDA rose again. Some of the outflows were probably directly attributable to the redemptions following the Monday auctions. However, high overnight rates indicate that more was going on than just liquidity fueled outflows. According to a top bureaucrat the renewal of pressures reflected the disappearance of hope, after nothing had been done about Demir.

The central bank temporarily changed liquidity requirements, but this was in vain. Confidence had been lost.

According to a Turkish banker:

The worst of the buybacks was that the squeezing banks got to sell their T-bills, and further squeezed Demir by selling the proceeds for foreign exchange.

Foreign investors continued to exit, with the return from their Thanksgiving holiday marked with profit taking.¹⁷⁰ The decline in bond prices, in turn, accelerated margin calls and the unwinding of structures.

Foreign exchange outflows continued on **November 29** (an outflow of \$1 billion). There was again a large increase in NDA. Treasury Undersecretary Demiralp announced that the Government was negotiating the early release of already committed funds from the IMF and World Bank and that additionally, it was discussing with the IMF the possibility of securing additional funds through a Supplemental Reserve Facility (SRF). Then, in a meeting with bankers at the Banks Association, with Temizel present, Governor Ercel stated that the central bank would adopt a new NDA target, in order to try to save the program. According to an EVP in charge of the Treasury of a medium-sized Turkish bank, present at the meeting,

Ercel signaled that the central bank could not continue accommodating and that a new reasonable NDA ceiling would be implemented. All the bankers, especially those with a treasury

background warned the CBT that this would create liquidity problems for the banks. All knew a few million dollars in foreign outflows would cause problems and interest rates would increase. The end of the year was approaching, and more outflows were expected. Foreign traders were thinking of their bonuses. Some structures had still not been unwound. Foreign banks had started closing structures starting from the weak and moving to the strong. Some \$5 or \$10 billion was ready to leave.

At the same meeting Temizel backed off a bit, trying to reassure bankers. In response to a comment by a senior banker at the meeting, Vural Akisik, then of Disbank, and of more recent fame as head of Ziraat that “he was 60 years old and didn’t want to end up in jail,” “Temizel tried to assuage concerns by stating that, “We are not at a stage where we are coming to punish banks over open positions. We are punishing banks for self-dealing.

Unfortunately, given his reputation, and in fact contribution to the current situation in the eyes of many at the meeting, his words were less than comforting. At the same time, a debate had started inside the IMF about whether to float the exchange rate or continue with the interest rate defense. At the level of top management of the IMF there was a concern that the Turkish exchange rate was overvalued and would continue to be exposed to speculative attack, hence floating was preferred. This belief was in line with the new consensus that developed out of the emerging markets crises of the 1990s that exchange regimes should be one of the two extremes: “irrevocably” fixed as in a currency union or through the adoption of an anchor currency, or floating. There was, however, serious concern about the implications of letting the exchange rate go for the banking system. One young staff member at the IMF put it colorfully: “Devaluation is like pissing in your pants. You feel great release for an instant and then you ask yourself: What have I done?”¹⁷¹

On **November 30**, foreign exchange outflows continued unabated (an outflow of \$750 million), reaching a cumulative \$5.9 billion since November 21. ISE declined again by 8%. Bond yields increased and reached 61% on the June paper. The CBT had to provide some liquidity in the evening to ensure books could be closed. The market was increasingly focusing on more money possibilities from the IMF, and hoping for an SRF between \$2 and \$6 billion.¹⁷²

The CBT took a few steps going back to the old monetary program, and announced that it would stop holding repo auctions in the afternoons (the main way in which it had financed Demirbank) starting from this day and provide additional liquidity only through foreign exchange purchases. Consistent with this, the CBT said that the NDA upper limit would be determined around the current level. In another attempt toward confidence building and normalization, PM Ecevit announced that 33.5% of Turk Telecom would be sold with management rights granted to the strategic partner (the latter being a major concession for the government), the President approved the tax measures, and a decree to enable the implementation of the legislation for the commercialization of state banks was passed.¹⁷³ The IMF's Managing Director Kohler welcomed the measures, noting, "We particularly welcome that the conduct of monetary policy is once more consistent with the framework agreed under the program", and that "on the basis of strong policies", he could "support additional resources be made available."¹⁷⁴

Investment houses started openly sounding the alarm on a possible devaluation. For instance, in a research note comparing Turkish interest rates to pre-devaluation levels in a number of Asian countries, Goldman Sachs wrote, "A float of the TRL is *not* a forgone conclusion, but a scenario worth considering" and predicted that, "The TRL/\$ could overshoot to TL/\$1,300,000 upon flotation".¹⁷⁵ Another influential house, Morgan Stanley wrote, "Devaluation risk is significant".¹⁷⁶ By this date, foreign exit from repo, bonds, and currency positions (estimated at approximately \$4 billion) was complete.¹⁷⁷ Local flows and margin calls on structures, a reduction in lines, and unwinding of structures accounted for some \$2 billion until then.¹⁷⁸

The CBT formally announced the new NDA ceiling (TL1.9 quadrillion) on **December 1**. Interest rates jumped as it tried to adhere to the new ceiling. The CBT managed to control liquidity and bought \$100 million in foreign exchange. Bond markets and ISE experienced substantial declines. Interestingly, however, with high interest rates on lira-denominated instruments, the public was enthusiastically switching from F/X to TL.

As predicted by bankers, more structures were unwound around this time, triggered by interest rate increases and leading to the sale of collateral, i.e. securities in the market.¹⁷⁹ This resulted in interest rates in the 100%s.

According to bankers, the next stage of the crisis was the unwinding of “structures.” What are structures? They are instruments designed to reduce local risks taken by large foreign investors. Local players take the risk and obtain funding by giving securities as collateral. When the value of the collateral drops to a certain level, structures are unwound. Interest rates when structures were negotiated were in the 30s, but then rose to the 60s, causing the value of the security/collateral to drop. This then caused the structures to be unwound and the securities held as collateral to be dumped onto the market. This caused interest rates to increase to the 100s, which was the real fire itself.¹⁸⁰

On Monday, **December 4**, foreign exchange outflows resumed (a \$0.7 billion outflow) and NDA increased substantially despite the interest rate defense (the CBT injected TL1.2 quadrillion via repo at a rate of 19,523% simple rate!). Overnight rates reached 920% and ISE repo rates 1,275% (both simple!). Bond yields jumped by 30%, to 95.2%, while 3-year eurobond spreads widened again, by some 9%.

At this point, the crisis had spilled onto the street. The breach in NDA reflected in large part deposit withdrawals by banks’ clients. Reportedly, mostly F/X deposit holders (who are typically conservative investors) panicked as they took the high interest rates to mean something was very wrong. The CBT decided to breach its NDA target after observing rates rising past 2000% and seeing the risk that the payment system would collapse due to lack of liquidity.¹⁸¹ As some top banks witnessed deposit outflows, their CEOs felt powerless. They had to make decisions under stress and were dealing with angry customers who could not get their money out.¹⁸² Only very liquid banks were faring well, earning high interest rates and not facing deposit withdrawals.¹⁸³

After the CBT hit its NDA limit, it decided not to roll over Demirbank’s repos. Demirbank, with no-where to turn to as its ISE limits at that point had been cut on account of its technical default there on November 22,¹⁸⁴ defaulted, with the CBT taking over securities worth TL760 trillion.¹⁸⁵ Some repos by state banks were also maturing and the CBT had to meet them, or also not be paid back, which in turn led to the breach of the NDA target.¹⁸⁶ The takeover of Demirbank was put on the agenda.¹⁸⁷

The decision to provide SRF financing appears to have been made this day. The Turkish side was willing to take strong

measures to forestall a float, thus IMF management and board acceded to support the existing exchange rate framework, despite doubts. At IMF headquarters there was also a debate about the size of the program. Based on the experience of several Asian countries, it was clear that the program would have to be substantial to gain the market's confidence.¹⁸⁸

On **December 5**, top officials, including PM Ecevit announced a likely joint press conference with the IMF for the following day about the measures that the government would take to secure additional support from the IMF. Treasury Undersecretary Demiralp said the loan would be "more than the market expects." The local press stated figures around \$5 billion. The CBT closed all of Demirbank's limits (in money markets, foreign exchange, and repo) and Demirbank defaulted on its central bank repos. S&P affirmed Turkey's B+ long-term credit rating and changed the outlook to stable from positive. Fitch IBCA also affirmed Turkey's long-term ratings in both local and foreign currency debt. The stock exchange recovered with a 19.5% increase and simple overnight rates declined to about 363% from 783%.

The next day, on **December 6**, a \$10 billion SRF loan was announced. The government promised additional commitments regarding the clean up of problem banks, as well as privatization and other targets outlined in the disinflation program. PM Ecevit said that a 51% stake for Turkish Airlines would go up for sale in the coming 10 days or so, and that the tender process for Turk Telecom would start. Additional measures would be taken to speed up privatization. In addition, the government issued a statement indicating it extended a guarantee covering creditors and depositors.¹⁸⁹ Furthermore, to meet what appeared to be a prior action for the SRF facility, Demirbank was taken over and placed under the management of the SDIF.¹⁹⁰ Both overnight and T-bill rates declined considerably, while traded volumes on the ISE overnight money market recovered in part.

The next thing to focus on was to make sure Turkey's key lenders would not reduce their exposures. On December 11, the IMF sponsored a meeting with Governor Ercel and the IMF First Deputy Managing Director Stan Fischer in Frankfurt with senior representatives from major European and U.S. banks, receiving the commitment that they would maintain their lending to Turkish banks. A week later, the Treasury arranged a \$1 billion syndicated loan for 6 months at LIBOR plus 100 basis points. Some 10 foreign banks participated with \$100 million each.

The February Crisis

A. Prelude

After the larger than expected additional financing and strengthened policies under the SRF there was hope that the program as well as the exchange rate peg could be sustained. But serious damage was done and confidence had been shaken. Despite public statements by the PM at every opportunity reiterating the government's resolve to strictly implement the program,¹⁹¹ the overall context was fragile. The pressures on the government to help the "real sector" were increasing, casting questions on the sustainability of the fiscal effort. Markets were getting extremely wary of the above-mentioned "Virtue Party case", because of the possibility that its closure could trigger by-elections and tilt the balance in Parliament in favor of MHP, the least pro-reform of the three parties in the eyes of investors. The tension at the top between the PM and the President, which had been sparked in August, was also growing rapidly.¹⁹² Meanwhile, the anti-corruption drive in the country was continuing with a new "operation" unfolding everyday, each one bringing much uncertainty with it as to what the future held.¹⁹³

For a while, however, the financial players, both foreigners and locals, were tempted to enter Turkey under the cushion of a renewed IMF program. As a top Turkish banker put it:

The new IMF program of December 2000 was perceived as good news because of the following reasons: (1) it was the proof of continuation of the IMF support to Turkey (2) it was much more detailed in terms of the agenda of what should be done by the Turkish government and bureaucracy; and (3) the SRF gave support to foreign exchange reserves. Thus, the chances for devaluation were reduced. In Turkey, nobody discussed at the time whether the IMF favored a float.

In fact, subsequent to the end-year closing of open foreign exchange positions, inflows resumed. As early as by January 12th,

most of the outflows which had occurred during the crisis had been repatriated, with the cumulative foreign exchange purchases by the CBT reaching some \$4 billion in the first few weeks of January (reserves increased by more, by \$5.6 billion, reflecting borrowing by the sovereign). Thanks to the faster than anticipated buildup in reserves, and the corresponding liquidity injection, NDA declined rapidly to TL200 trillion, compared to an end-January target of TL900 trillion.¹⁹⁴ According to a CBT announcement, two-thirds of the \$4 billion was purchased from local banks.¹⁹⁵

Foreigners returned mainly in equity and short-term positions (overnight repos and/or deposits with up to one month maturity). They placed funds in the CBT guaranteed money market, directly or through investment banks, with these facilities perceived as the least risky alternative. Foreign banks' limits with state banks were small, so little was placed there.¹⁹⁶

Local banks were playing along, despite the shake-up in their confidence and balance sheets.¹⁹⁷ The big banks were subjected to some sort of a moral suasion to sell dollars into the market,¹⁹⁸ which, of course, meant opening their positions, as well as to continue bidding at the auctions. Part of the old pattern of excessive swings in interest rates resurfaced as large banks coordinated implicitly to generate an interest rate rally and create profits. According to a top Turkish banker:

Open positions after the November crisis in the banking sector got larger because banks wanted to defend the interest rate levels. No one saw a devaluation risk in the short term; the key focus was to decrease the interest rate levels.

But the overall sentiment was negative with some of the small banks becoming even more conservative and bringing forward the date for closing positions (which they had internally set for March initially).¹⁹⁹ Furthermore, a "securities can kill you risk", a new phenomenon for the banking community, which, until the November crisis, had been able to sell or repo its securities, was prompting banks to stay as liquid as possible.²⁰⁰ To restore liquidity, the banking sector was even shrinking credit to the private sector – somewhat unusual for Turkey. In the first half of January, interest rates on the benchmark bond were on average 66%, not very low, indicating banks were being relatively conservative.²⁰¹ All this of course, spelt trouble for the fiscal accounts and debt rollover prospects. An EVP in charge of the treasury of an important bank described the mood as follows:

At a primary dealer meeting around the New Year (despite the collapse of the primary dealership system, banks were still meeting) foreign bankers suggested to the Treasury that the tenure of new issues should be lengthened to one year, to help the banking sector recover its losses from the November crisis. Foreign bankers were bullish at the time – in the New Year, they can take more risks – and expected a rally in rates down to the 60s. A local banker responded to them, saying they were dreaming. Then it became clear that the damage was far greater and sentiment was more bearish for the locals than for the foreigners. Most locals had lost money and were more cautious. I reckon that 80-90% of the inflows were by foreigners.

The markets rallied regardless from mid-January through early February for about two weeks, with interest rates on the benchmark bond declining from the high 60s to the low 50s by about 15 percentage points thanks to generally good news. The IMF was in town for the 5th review and on January 19, the IMF Chief Carlo Cottarelli said the government would shortly meet the targets outlined in the most recent Letter of Intent and that he would recommend that the Board release the next tranche of funding at a meeting in early February.²⁰²

Investment banks had also become more optimistic. For instance, Salomon Smith Barney expressed its confidence in the exchange rate, seeing the likelihood of a currency event before July 2001 as low. Similarly, CSFB gave a buy recommendation, in a strategy note, for the February 21 T-bill or newly issued 3-month T-bills. It believed devaluation was unlikely prior to May, when a large auction was to be held, but significantly more likely thereafter. ABN Amro believed that overnight rates of 40% were likely to continue until the February auction (and then to fall to 30%).²⁰³

In late January, the Treasury returned to the international capital markets, mandating two investment banks for the sale of EUR500 million in 3-year eurobonds, which were subsequently launched on January 30. On February 3, the State Institute of Statistics (SIS) released favorable January inflation data, which declined to below 30% in WPI terms, its lowest level for the past 14 years. Monthly CPI inflation was at the lowest level since the SIS began to publish the index in the early 1980s, a sign finally that inflation could be conquered.

The rally lost steam, and confidence started to wane again in early February despite the IMF's timely completion of the 5th

Review on February 5.²⁰⁴ Ironically, secondary market yields increased on February 5, to 58% from 53%, while overnight rates jumped to 54% from 42% (simple) the same day, or from a low of some 32% in late January. The IMF attributed the turn in sentiment to the program being off-track, while others pointed to loss of confidence following the reduced room of maneuver associated with an agreement to tighten the NDA target at end-January (with the Letter of Intent published on February 5) and lack of appetite of local bankers in conjunction with the large prospective borrowing requirement of the Treasury. Renewed Virtue Party closure talk also played a role according to all accounts.

At an NBER conference in July 2001, Michael Deppler, Head of the IMF's European I Department, would explain his take on the developments as follows, "the December program was beginning to work prior to the February crisis. Interest rates, for example, had declined from about 100% to 50% in mid-January. This was followed by a series of policy decisions that backtracked on the spirit, if not always the letter of the program. Together with increasing political controversy,²⁰⁵ interest rates started to rise once again, setting the stage for the explosion in outflows triggered by the Prime Minister's announcement of February." Deppler stressed that the program had a chance of succeeding, but the crawling peg regime required a greater degree of policy and political discipline than was on offer.²⁰⁶

Specifically, the program seemed off-track in five key areas, on which international investors focused, according to a top IMF official, as also summarized in the Staff Report of June 2001.²⁰⁷ First, on Turkish Telecom, the decree guaranteeing strong management rights was challenged in early January in the Constitutional Court on the basis that it required legislation. This implied the condition had been met only nominally before. Second and third, the Tobacco and Electricity Market Laws were not passed by the end-January deadline, and their rescheduled dates at end-February and mid-February respectively, were also missed. Fourth, issuing of regulations on related party lending was delayed. Finally, and possibly the most worrisome, a "Tax Amnesty" was introduced – on February 5, ironically the day of the IMF Board Meeting – with strong negative implications on tax revenue for the year as a whole. The amnesty took the form of a cut in interest rates on tax arrears, which, in principle, meant a further deterioration in collections.

They [investors] were going over the Letter of Intent item-by-item, focusing on items that were not even subject to conditionality. For instance, investor bank reports would blast Turkey because electricity reforms hadn't happened by end-2000 (an item not subject to conditionality). By contrast, top decision makers in Turkey were not focused on the possibility of a new crisis.²⁰⁸

Admittedly, legislative delays were partly attributable to factors outside the government's control, such as the lack of cooperation in Parliament by the opposition parties and a lengthy review process by the President, which were acting as natural obstacles. In fact, the government's attempt to push for a change in the parliamentary procedures in late January to expedite the passing of laws, which appeared to have been encouraged by the IMF, created much havoc in Parliament, leading to the death, on January 30, of an opposition MP from the True Path party, allegedly after being hit in the head during fist-fighting in Parliament, sending shockwaves throughout the country.

Another stumbling block referred to above, Turkish Telecom, had already turned into a mess, partly because of the IMF's insistence on its privatization against all odds. A lack of consensus in the country, including a nationalistic twist around the issue, an infuriating Telecom Minister in charge (who would cause another major crisis later in July 2001 and would have to resign over it), and dismal international market conditions all combined to a bungling of the privatization effort. IMF's Michael Deppler would help to diffuse the hype around it during a teleconference with a small group of journalists by stating that the sale of Turkish Telecom was not central to the program, and that the IMF was working with the authorities to make it more attractive to international investors.²⁰⁹ In the same teleconference call, Deppler would also declare, "all was going according to the program."

There is no doubt that there was a lot of "expectations management" in Deppler's pampering words, and of course, the reality was not as favorable. By early February the media began talking about a secret letter from Deppler that allegedly warned the authorities of several risks to the program. Whether the so-called "Deppler letter" really existed was never established: the Treasury Undersecretary rejected the existence of such a letter while the IMF declined to comment on it.²¹⁰

In summary, despite some good news and a clear effort on behalf of the coalition and the IMF to talk up the program in

public, the overall context was discomfoting. One major problem in all this was that, unlike during the period preceding the November crisis, a change in Turkey's exchange rate regime had become an openly discussed possibility starting with the November crisis. The genie was out of the bottle, so to speak. Before the amended IMF program was in place, a number of houses had given a negative verdict (see November chronology). The new IMF program seemed to buy time, but the situation remained uncertain.²¹¹

Internally, in fact, the IMF was coming to the conclusion that an early exit could be desirable. Despite record-low inflation, the IMF was not too happy and thought that this level was still twice the rate of crawl (2.1% for CPI vs. 0.9% for the rate of crawl) and that the government was not willing to do much on incomes policy.²¹² Furthermore the macroeconomic framework was coming under increasing stress, as doubts arose about privatization prospects and as interest rates climbed back up. The privatization target for 2002 was \$6-7 billion, of which \$2 billion in GSM receipts and the rest on account of the privatization of Turkish Telecom, Turkish Airlines, and the electricity distribution company, all of which were in doubt at the time. Furthermore, interest rates and growth were turning out to be worse than originally assumed under the IMF program, and it was clear that there would be additional bank restructuring costs, all of which would pressure the fiscal accounts.²¹³ Morgan Stanley commented as follows:

We had reached a point where the assumptions of the economic program were no longer realistic, in our view. Let's just follow one strand of thought. Interest rates are now significantly higher than the average assumed by the government for the year (around 29%). Debt servicing costs will, therefore be higher than originally envisaged. Those additional costs need to be offset by either cutting expenditures or raising additional revenue. Neither of these avenues appears to offer much scope for adjustment. That means additional financing will be needed. The CBT can provide that financing. But in doing so there will be an increase in credit. If not offset by a decrease in net foreign assets or credit to banks the money supply will expand. That means the inflation assumptions will be unrealistic. That, in turn, will call into question the longer-term exchange rate assumptions. We could reach a similar conclusion by looking at the external financing assumptions.²¹⁴

Salomon Smith Barney wrote:

The Treasury's target of \$7 billion in external debt issuance in the capital markets looks challenging given that the appetite from domestic banks, which have traditionally provided support to bonds in the secondary market, is likely to remain constrained.

The government's targeted primary surplus for the public sector of 5% of GNP in 2001 is aggressive given an underlying assumption of more than 4% GDP growth. With the recent rise in interest rates, a much more sluggish trajectory for domestic demand should actually not see growth surpass at 2.5% at best. As the government assumes contingent liabilities associated with cleaning up the banking sector, fiscal costs could also rise.²¹⁵

Local players were certainly not unaware of or immune to the turn in sentiment toward the possibility of an exchange rate regime change. In fact, a paper by the IMF's First Deputy MD Stan Fischer, presented at the meetings of the American Economic Association (AEA) in New Orleans, argued the middle in exchange rate regimes was being hollowed out, reflecting the non-viability of fixed exchange rate regimes.²¹⁶ The paper, in the words of a Vice Governor of the CBT, had become a "best-seller" in Ankara.²¹⁷ Never mind the fact that in the Turkish case, a fixed exchange rate regime had been chosen mindful of this. In fact, at the AEA meetings, Fischer made express reference to the fact that "soft pegs" could be introduced to stabilize inflation, something that would not have to be problematic as long as the peg was temporary, which was indeed the case for Turkey by the very inclusion of an "exit mechanism" in the design of the program.

All aside, Ankara was optimistic that the exit from the peg would be of an orderly kind. The talk of the town was more about how the exit could be advanced and the band could be widened prior to the formal switch in July. Unlike argued elsewhere,²¹⁸ it seems that there was never a plan to devalue in March, but a plan was being discussed for an earlier widening of the band than the one programmed for July, apparently in the form of a joint proposal by the CBT and Treasury.

In addition to the devaluation backdrop, one major technical detail that disturbed the locals and contributed to the loss of confidence in February, was the tightening of the ceiling on NDA, i.e. roughly on how much the CBT is allowed to create liquidity through open market operations (see Chapter VII on

“controversies” for a detailed discussion).²¹⁹ Earlier, markets had relaxed thanks to the over-performance on NDA, which meant room was available to expand NDA if necessary.²²⁰ According to the Treasurer of a large bank,

At end-January, the IMF raised the NDA limit. This meant risks had increased substantially, and I called the CBT about it. The next morning, I started to change foreign exchange and interest rate exposure, bracing for problems. It was a game of musical chairs for who would be able to get out. One week later, I received London calls about the NDA limit and kept being asked the question “How much foreign money is in the market”? All started to flow back, locals and foreigners. There was uncertainty about what would happen when the CBT hit the NDA target, would it breach the NDA ceiling and focus on its Lender of Last Resort function or meet the NDA target as agreed under the program?

Another concern for the locals was the Treasury’s domestic borrowing program for February. The Treasury, trying to be conservative on the non-interest budgetary surplus, announced a large borrowing need for the month, including a target of TL3.5-3.7 quadrillion for the February 20 auction. The decision got the markets nervous, given that banks were reluctant to take on interest risk and also preferred to stay liquid.²²¹ In the middle of February, the Treasury had a bad 3-month T-bill auction where interest rates (compounded) jumped to over 70% from around 57% for the comparable paper a few weeks earlier.

The week before the February 20 auction, the markets were anxious but hopeful. On February 13, Is Bank/Telecom Italia consortium had finally paid the last installment for the GSM-1800 license (about \$2 billion) and the Treasury had reduced the amount of borrowing planned for February 20 to TL2.9-3.2 quadrillion from the previous TL3.5-3.7 quadrillion. The ISE gained 10% in two days (from February 13 through 14), and on February 15, Turkey increased the amount of its 3-year eurobond issue by Euro250 million. Under the circumstances, the Treasury auction was expected to be a success, with the real test being whether parliament would be able to pass the necessary electricity legislation that week to ensure the procurement of the next tranche under the IMF program.²²² The IMF was in town for the 6th Review, with announcements expected during the third week of February, when Stan Fischer would also be in town for a meeting of the G-20 Deputies in Istanbul on Feb 18-19.²²³

Fischer's visit for the G-20 meeting was a pretext, it would turn out, and was rather a mission with a different purpose: to convince the government to float the currency.²²⁴ In a regular press briefing of the IMF, Tom Dawson, the IMF's top PR man, would volunteer interesting information in response to a query about the timing of the next program review, and in hindsight, should have alerted market players that something unusual was in the making,

I should note – you've been very polite in not asking – that the Deputy Managing Director will be in Turkey over the weekend and I think Monday. There is a G-20 Deputies meeting in Istanbul which he will be attending, and he will take advantage of that visit to meet with Turkish authorities at some point over that period.

Now we turn to a day-by-day account of the period that culminated in the float of the lira on the morning of Thursday, February 22.

K.—B. Chronology²²⁵

On **February 19**, the market opened somewhat edgy. It was focusing on the auction next day, which would meet a massive redemption of some \$6 billion, the largest ever in some 15-year history of the Turkish bond market.

There was also a National Security Council (NSC)²²⁶ meeting that day, something that the market had a habit of watching closely and often nervously, but this was a regular meeting, and there was nothing particularly market-sensitive on the agenda. Among other topics, the Council would discuss Turkey's "National Program" to be submitted to the EU, and the date of this particular meeting had been advanced simply because of upcoming diplomatic trips by the PM and President. Who could have guessed that the meeting would mark one of the most defining moments of modern Turkish history?

At 11:10 a.m., only about an hour into the meeting, TV channels started broadcasting a traumatized PM, reporting on his meeting, or fight rather, with the President, declaring the onset of a "crisis at the very top of the state". The news channels and the trading floors roared with rumors that the President had "thrown the Constitution in the PM's face". The following passage, from Washington D.C.-based Center for Strategic and International

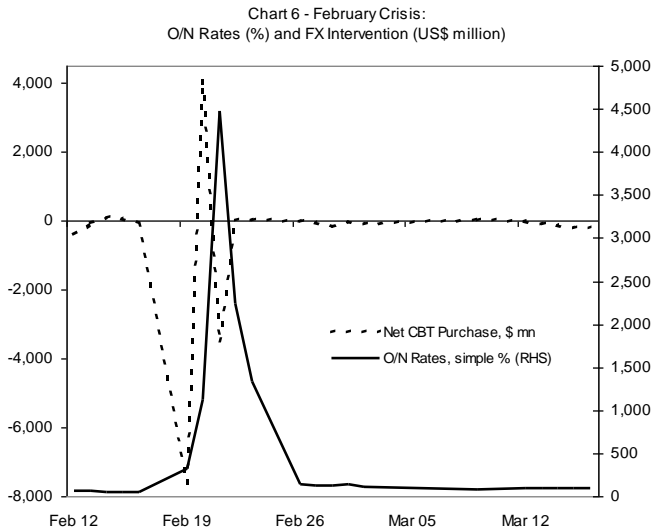
Studies, describes the meeting, based on leaked accounts in Turkish dailies,

According to the leaked account in *Hurriyet*, Sezer opened the meeting by asking Ecevit bluntly why he was “disturbed by action against corruption.” Claiming that Ecevit’s earlier criticism of his activation of the State Inspection Board to investigate the BRSA and the public banks was designed to undermine him, Sezer continued, “Turkey’s primary problem is corruption and you are failing to tackle it decisively. All your ministers are accused of corruption. As soon as the investigations reach the political level you block them. You have tried to impede the prosecutor of White Energy [the operation to root out corruption in the energy sector]. This is no way to tackle corruption.” Apparently stunned by the onslaught, Ecevit asked if Sezer was finished. According to the newspaper *Radikal*, Sezer replied, “No. I have the files here. They contain the names of a number of ministers. You have not managed to dismiss a single minister. You are sitting on mud. If you cannot clean up, let us do so.” Although Ecevit then got up and left with Yilmaz, Ozkan apparently stayed on to argue with Sezer and to accuse him of ingratitude toward the coalition parties that had ensured his election, before also walking out.²²⁷

It was not so clear whether the book was in fact thrown on PM’s face or this was an exaggeration, but it really did not matter. At that point, it was too difficult even for the Turkish players, who had weathered pretty nasty stuff such as the Russian, Asian, Brazilian as well as several of their own crises, to play it cool. There was one thing left to do: Just run for the exit before others do.

In no time, the panic found its way to the CBT reserves. The CBT sold \$7.6 billion at “value tomorrow” (i.e. with settlement the next day) because of the U.S. observing the President’s Day holiday. In the eyes of the market participants, the crisis was seen either as a guaranteed devaluation or a “free option”, both of which would have benefits for those who attacked. It was a “free option”, because of the U.S. being on holiday, dollar transactions would not clear until the next day and hence domestic currency needed to purchase dollars would not have to be made available until then. For a small transaction cost, liquid banks had the option to sell dollars back to the CBT in the case of no devaluation, and in the meantime earn interest on their lira liquidity. Some local banks also bought dollars thinking they

would (have to) sell them to foreigners the next day.²²⁸ Chart 6 tracks foreign exchange intervention and interest rates during the February crisis.



Important conclusions were apparently drawn right away by Stan Fischer and the U.S. Treasury. The U.S. Treasury representative told a top bureaucrat present at the G-20 meeting that nothing could be done now other than floating the Lira. Stan Fischer was also of the same view. There was essentially one thing that was left for Fischer as well as the senior IMF team to do: fly to Ankara and convince the PM to float the currency. At 6:30 p.m. Fischer met PM Ecevit and tried to convince him to float the currency. Ecevit, naturally shocked, said he would need to talk this over with coalition partners.²²⁹

The IMF team comprising Stan Fischer, Michael Deppler and Carlo Cottarelli then went to the CBT's clubhouse to meet with the Turkish side to decide on a strategy. All senior bureaucrats and a number of key technicians were present at the meeting, along with Minister of Economy Onal. Stan Fischer tried to convince the bureaucrats to float, basically indicating that IMF support could continue only in case of a float, given that it would be impossible at this stage, given the prevailing wisdom on the non-viability of soft pegs to commit more IMF resources to the defense of a defunct

regime. He could then try to convince the IMF Board, he said, to allow the use of remaining money for fiscal purposes.²³⁰

Bureaucrats assessed the available options with and without float. None really had a good solution given that there was a total confidence loss in the markets.²³¹ There was fear of waves of speculation, given the large amount of overnight repos in the system.²³² Even if the peg was sustained at that point, it would presumably be a question of days before reserves were depleted, in the absence of a complete collapse of the payment system and hence the banking system.²³³ Reportedly, Stan Fischer enquired about the possibility of closing the markets until a decision was made on devaluation, but this was apparently illegal in the Turkish context.²³⁴ A decision was made not to provide liquidity to the markets as the government's decision was awaited, changing the strategy compared to November. The CBT was confident that people had taken positions on which they could not deliver, and a liquidity crunch would force them the next day to sell back a lot of it.

Eventually Minister Onal went back to the PM with the Governor and Undersecretary to convince him to float. The PM decided to wait until all coalition leaders were present. Ecevit and Yilmaz were in Ankara, but Bahçeli was in Central Asia on a diplomatic visit to strengthen ties with the Turkic Republics. Reportedly even then, float was not a foregone conclusion, as both the Governor and Undersecretary still hoped to convince the IMF against a float.²³⁵ Meanwhile, the degree of disconnect at the PM's office from the seriousness of the situation was quite striking. A senior figure there told the bureaucrats that, if they had known that a major auction was upcoming, the PM would not have gone on TV, and Deputy PM Ozkan, the PM's right-hand man, snapped at the bureaucrats, asking them "to stand firm on their feet and not abide by every demand of the IMF". Anyhow, thanks to this decision-making limbo, which, in all fairness, was somewhat inevitable under the circumstances, "market participants were saved", as an economist at a foreign investment bank put it,

On Monday, Turkey could not devalue because devaluation requires the decision of the Council of Ministers. The Council of Ministers could not meet till Wednesday. Our trader commented how this 2-day period saved us.

Given the sensitivity of the situation, the CBT senior staff cut off contact with market participants.²³⁶

In the morning of **February 20**, the market was TL5.9 quadrillion short, however the CBT did not hold a repo auction to fund the market. It thereby succeeded in reversing most foreign exchange purchases, which could not be funded, and there was a \$6 billion inflow for the day (see chart 6).²³⁷ With dollar sales checked, the situation seemed under control on the surface. The CBT view seemed vindicated in that, minimizing liquidity provision had forced most of demand to reverse itself.²³⁸ Furthermore, the fight between the PM and President had not after all led to a devaluation at market opening and it seemed that the government would stay intact. Confidence was somewhat restored.²³⁹

Notably, the Treasury auction went relatively well in the morning. The Treasury shortened the tenor of the auction to one month, from 7 and 12 months earlier. Despite foreign investors redeeming some \$1.5 billion, the Treasury sold TL1.5 quadrillion (net) out of bids of TL1.8 quadrillion, with a one-month term, at an interest rate of some 144% compounded (with minimum and maximum bids placed at around 33 % and 200%, respectively) to the market²⁴⁰ and an additional TL0.4 quadrillion to public institutions.²⁴¹ In a parallel auction, the Treasury also sold \$530 million of 4-month F/X-linked bills at 12% interest. This meant the Treasury obtained a total of about \$3.3 billion out of the approximate \$4.1-4.5 billion sought (and compared to a \$6 billion redemption the next day). The interesting thing was that the results indicated, in some sense, that devaluation was still not expected, i.e. interest rates of 144% compounded, or about 7% term payment in one month, did not imply a high expectation of immediate devaluation.

However, despite there being no devaluation and the auction going relatively well, not all foreign exchange contracts were cancelled with several of the large banks maintaining their orders to buy substantial amounts of dollars. It appears that typically banks tried to balance risks, both participating at the auction and demanding dollars.²⁴² Foreigners exited from the central bank guaranteed money market and from their (small) positions with state banks.²⁴³ Locals planned to exit their positions with state banks in order to fund their foreign exchange purchases.²⁴⁴ There was some controversy regarding the extent of local participation in the run on the lira. Some thought confidence had been regained and that local banks at any rate did not have the liquidity, so that the run was entirely foreign.²⁴⁵ Others believed the run to be mostly local, to be financed by withdrawing liquidity from state

banks. Meanwhile, Stan Fischer and the IMF team left. The message from Fischer was unchanged and amounted to something like: “Float if you want to stay in business with us. Otherwise there is not much I can do”.

That afternoon, Governor Ercel appeared on a widely watched financial news channel CNN Turk trying to assuage devaluation fears. With his usual relentless optimism and a calm style, the Governor tried to convince his audience that things were under control, by arguing that the program was well-financed, the interest rate defense was working, a good chunk of the foreign exchange reserves had been sold back to the CBT, and that the Government was strictly committed to the program, “doing all it could”. Referring to the famous play by Becket, Ercel would declare, “Do not be waiting for a devaluation like ‘Waiting for Godot!’”²⁴⁶ Some officials, however, seeing that the next day’s redemption entailed the risk of massive foreign exchange outflow, tried to use their influence to convince PM Ecevit to devalue on Tuesday, but they were not successful.²⁴⁷ Instead, PM Ecevit issued a brief press statement stating that “the IMF had no new demands from the Government” and the program would continue as it was, which had little impact and added to the confusion as rumors had started to circulate that Stan Fischer was asking the Government to float the currency. Interestingly, despite the circumstances, “devaluation” was still not a foregone conclusion. An “insider” journalist would report, for instance, that “*even* (emphasis is ours) devaluation was discussed in a meeting of Stan Fischer with the authorities,” hinting that it still looked a bit of a distant event in the eyes of many.²⁴⁸ Perhaps it was this mindset that explained why until the last minute the average Turk did not rush to the bank or to foreign exchange, and stayed in Lira instead, given the extremely attractive interest rates. Of course, for local and foreign banks, which were closer to the fire, it was a different story.

With the shortage of liquidity, overnight rates skyrocketed (to 1,112% simple or 6 million percent compounded later in the day! The CBT provided liquidity (TL482 trillion ²⁴⁹) in the evening within banks’ limits when banks couldn’t close their positions, hence the NDA ceiling was breached after all, but it did not provide liquidity to state banks (presumably state banks limits were not high enough to allow them to increase their borrowing from the CBT massively).²⁵⁰ As a result, state banks, Ulusal Bank (the smaller of the two banks in the Cingillioglu Group), and a few others “quasi-

defaulted". That is, there were no actual defaults as customers settled for rates as high as 6000%.²⁵¹ The CBT was well aware of the size of state bank overnight borrowing, and thus the consequences for the payment system of not providing state banks with liquidity. It chose to "act as a currency board and bear the consequences; in November, providing liquidity had been tried and had not worked."²⁵² As Governor Gazi Ercel explained,

The total amount of repo by Ziraat, Halk and SDIF banks was \$16 billion. If we provided them with liquidity, this could be foreign exchange demand.

Markets, however, were taken by surprise, largely because there was not an awareness of the size of state bank overnight borrowing at the time. Such borrowing had recently ballooned following the November crisis reflecting a shift from one-month deposits to overnight borrowing²⁵³ and high interest rates.

The initial "defaults" quickly spread through the system causing a payment system collapse. One of the "defaults" by Halkbank, for instance, reportedly led to cascading "defaults" from Halk to Garanti then through Ottoman Bank to a foreign investment bank.²⁵⁴ Another reported "default" by Ziraat caused settlement problems for local banks that had planned money market placements in London on the natural expectation that they could withdraw their funds from Ziraat.²⁵⁵ Traders were up late at night trying to close accounts manually given that the electronic fund transfer system had broken down. An economist at a foreign investment bank describes the turmoil:

It was difficult to get through to London on the phone as London was constantly on the phone with clients. Traders were busy settling. There was no "market sentiment" [to talk of] because traders were too busy trying to settle transactions

On **February 21**, almost all institutions defaulted on their commitment at the previous day's auction. Ultimately only about \$2 billion of the redemption was rolled over (compared to \$3.3 committed at auction), with the gap financed by the CBT in the form of credit to the government. There were three possible reasons for the defaults. First, for some parties the default was technical, resulting from the non-payment by state banks and others.²⁵⁶ Second, for one or more banks the default was a choice entered into after rumors started to spread that the Government

would have to float.²⁵⁷ Third, a large bank possibly realized they had bid too high at the auction and pulled back its bid.²⁵⁸

Most of the excess of the redemption over the amount rolled over (about \$3.5 billion) went directly to foreign exchange,²⁵⁹ bringing the total outflow over the three days to \$5 billion. The interest rate defense was simply not working and overnight interest rates rose to 4,500% simple (2x 10²⁰ percent compounded)! It appeared that the ultimate demand for foreign exchange came from both local and foreign banks, as well as rich individuals (the “\$5 million guys”, as one trader put it). For instance, on the day of devaluation, a large foreign bank bought \$1.2 billion on account of foreign clients who wanted out.²⁶⁰ Confidential data provided by the CBT to a Parliamentary Corruption Commission and leaked to a daily newspaper (Sabah) in the summer of 2003, laid out bank-by-bank details on banks’ foreign exchange purchases during the days leading up to the devaluation. Citibank and Deutsche Bank were at the top of the list with purchases (including for clients) of \$1.1 billion and \$800 million, respectively, followed by Turkish banks Kocbank, TEB and YKB, each purchasing about \$400 million. Somewhat surprisingly, one of the top 4 banks, Akbank, only purchased \$30 million.²⁶¹ Quite surprisingly too, as all this was happening, the man on the street was still queuing to put his money into lira.

In the afternoon, a meeting that would last 13 hours started at PM’s Office. Governor Ercel, finally convinced of the inevitability of float, had come to the meeting prepared with a statement for the PM to read once a decision was made. There were essentially two camps. A good majority, led by ANAP leader Yilmaz favored the float and hence effectively devaluation while a number of others, led by Bahçeli, who joined the meeting late from his trip to Turkmenistan objected. As the politicians debated, the PM called the IMF’s Managing Director Kohler, who had already been briefed by Stan Fischer, and got affirmation from him of IMF’s support, i.e. a new program, in the case of a float. Reportedly the breakthrough came when the Undersecretary warned of the danger of defaulting on “wage payments”, should Turkey refuse to float. In this connection, Governor Ercel built the link between the two, and reminded the participants that no float would mean no IMF support.²⁶² Float and hence effectively a sharp devaluation was politically a major risk and a possible disaster but an inability to pay wages was outright suicide. The coalition leaders concluded that they had indeed run out of options.²⁶³

Even though the meeting would continue until 2 a.m. in the morning, Erdal Saglam, an “insider” journalist with a reputation for having access to first-hand confidential information, appeared on air just after market close, claiming that a decision to devalue had already been made.²⁶⁴ At 2 a.m. in the morning, the Government issued a very brief press statement fully detached in tone from the tensions of the past few days. In a few bullet points, the statement said the Government was committed to continue with the program, the fiscal adjustment as well as the privatization of Turkish Telecom and Turkish Airlines, but that the developments in the past few days had called for a decision to float the currency. Turkey would now have higher exports and tourism revenue, the statement continued, and the Government would do everything to protect the wage earner against inflation. After decades of much predictability in the exchange rate, the decision to float the currency was no doubt shocking, and the prospect of higher tourism revenue on a cold winter morning did little to comfort the average Turk.

In the morning of **February 22**, the exchange rate depreciated from 687,000 TL/\$ to 960,000 TL/\$, by about 40%, while overnight rates continued to be extremely high for a few more days in an illiquid market. Rating agencies downgraded Turkey *after* the devaluation. Moody’s changed the outlook to neutral from positive while Fitch downgraded Turkey’s domestic currency rating to B+ from BB and put all credit ratings on watch with a negative outlook. A day later, S&P’s downgraded Turkey’s long-term credit rating to B from B+ with a negative outlook, and its short-term credit rating to C from B.²⁶⁵

The next few days were naturally chaotic despite an IMF statement approving of the decision and hinting at more funding for “bank re-capitalization”. The biggest problems that needed to be tackled in the short-term were to avoid bank runs and address the overnight borrowing by state banks. The latter had reached a massive TL6.4 quadrillion by mid-March from around TL2.4 quadrillion in late 2000, in part because of the high interest rates paid during the crisis. At an emergency meeting over the weekend, which included top officials from the BRSA, Treasury, and the CBT, the CBT decided on funding operations, both in TL and F/X, to meet the market’s needs. According to a top bureaucrat, they had to put up a fight with the IMF to do this:

We decided to provide TL liquidity to the system and deposit foreign exchange to domestic banks, to prevent bank runs. We made 5 or 6 calls to DC. In a conference call with Carlo Cottarelli and top Turkish and IMF decision makers on Turkey, we were told that if we went ahead, the IMF would cut its relations with Turkey. We did go ahead nevertheless, and 2 days later got a letter from the IMF saying we had been successful in “following” IMF advice on this.

But the IMF recalls events differently. A top IMF official noted that the Fund was fully supportive of an action aimed at guaranteeing first the survival of the payment system; that it proposed its own plan with the goal of safeguarding the payment system, entitled “Monday morning operation” (a scheme to pay back in one day the overnight borrowing of SDIF and state banks from commercial banks, with liquidity to be provided in the currency in which the overnight borrowing was denominated); and that in terms of liquidity supply, this plan was even more expansionary than the one adopted by the CBT.

The EVP in charge of the Treasury of a medium-sized Turkish bank described the situation in the aftermath of the devaluation:

State banks could not honor deposits. Customers came to the banks with notary publics, which recorded that banks would not pay, an act punishable by imprisonment of the bank managers. I expected bank runs. They did not materialize, but we did get testing, whereby transfer orders were placed and cancelled when it was clear they could be met. Other customers asked for high interest rates and became more confident when my bank for instance, paid them 5 or 10% less than they were asking (they liked the fact that they could not dictate the terms to the banks). The whole withdrawal phase was interesting. They were pretending that they needed the money for “emergencies”. The most common cliché line was “We are going to buy a house.

There was little political accountability in the aftermath of the crisis. In the next few days, only Governor Ercel and Undersecretary Demiralp would resign, without a single change occurring in the Government. The Minister of Economy was not asked to resign. Later, even when Kemal Dervis, a senior World Banker, joined the Government as the Minister of Economy and the Turkey’s new “savior”, the former minister would remain as part of the cabinet.

Key Controversies

The trouble with people is not that they don't know but that they know so much that ain't so

Josh Billings

The violent and sooner than expected Turkish collapse naturally initiated much debate locally and abroad on the nature and triggers of the crises, and whether they were at all avoidable. Were the twin crises an inevitable result of exchange rate-based stabilization? What was the role of hot money? Was the November crisis triggered by fears of an impending banking crisis and what was the role of Demirbank? Did the crises reflect a run on the currency as the IMF and CBT apparently believed, or start initially as a regular demand mostly by locals because of seasonal outflows? Was the design of the program too fragile? In this chapter, armed with various perspectives from Istanbul, Ankara, London and Washington D.C. from our interviews, we take a look at many of these controversial issues.

We organize the chapter around three broad themes. First, we look at the argument that Turkey had a case of what has been termed an “exchange rate-based stabilization syndrome”. Turkey indeed made a risky call by using the exchange rate as the nominal anchor at a time sentiment in both the academia and policy circles was turning against pegged exchange rate regimes. After the crises, this prompted many observers to conclude that the program was doomed to fail, or that it contained the seeds of its own destruction. But was this really a major part of the crisis, or just a convenient story told with the benefit of hindsight?

Second, we examine the controversy around the issue of the exact trigger for the November crisis. The view among Istanbul traders (for both local and foreign banks), which also became the official view adopted by Turkish officials and the IMF, is that the

trigger was the *dumping* of T-bills by Demirbank on November 21, which in turn triggered adverse market dynamics. Demirbank does not in fact appear to have sold T-bills, though there were indeed rumors to that effect, possibly triggered by the sale of T-bills by other investors. An alternative view, also held by many, is that foreign exit on Wednesday November 22 triggered the crisis. This exit appears to have been motivated by banking rumors and the cost to the treasury of further bank bailouts, which had been in the news.

Finally, the role of liquidity in avoiding the crises, or rather the timing of its provision once the initial outflows occurred became a much-debated issue, especially among local observers. Several Istanbul bankers and analysts claimed that liquidity provision was insufficient and a major *cause* for the crises, notably in November. By contrast, the IMF view, and often the official view from Ankara was that “currency board rules” had to be followed in order not to forsake credibility, and liquidity was provided anyhow in November fueling outflows in the end; Ankara officials believed that “the same mistake could not be allowed in February.”

Aside from these three broad areas, there is perhaps a deeper area of controversy, which relates to whether the November and February crises as a whole, and the float decision in particular, were at all avoidable. When the IMF came to the program’s rescue after the November crisis and poured more money onto the exchange rate peg, many market players thought the whole program could be resuscitated. In fact, in the early weeks of the year, this was saluted by a strong rally, which in turn reinforced these hopes. But in less than two months after that, Turkey was forced to float the lira. Was it all because of a blow up between the President and PM? Or was there something deeper? We examine this question in the next chapter, which places the crises in the context of the literature.

A. Exchange Rate Based Stabilization Syndrome

One view of the November crisis is that it was a typical exchange rate-based stabilization crisis. In essence, the current account deficit had mushroomed and the real exchange rate appreciated, just as in a classic textbook case of an exchange rate-based disinflation program with imperfect credibility.²⁶⁶ The view had many adherents including the IMF’s Carlo Cottarelli, who remarked, during a conference held in Cambridge on the Turkish

crisis that the November 2000 crisis was “close to a plain vanilla current account crisis. While it was complicated and accelerated by the banking problems, it was essentially a fairly standard story of overheating, overvaluation and a deteriorating current account balance.”²⁶⁷ A few analysts during the run up to the crisis and many others *after* the crisis made the case that the Turkish crisis very well fit the well-known demise of exchange rate-based stabilizations.²⁶⁸ And in the eyes of many, the failure of Turkey’s stabilization program was the nail in the coffin of exchange rate-based stabilization programs.

Moreover, a number of “Early Warning Systems”, which were extremely popular at the time, had also started predicting a crisis around fall based on a number of standard indicators.²⁶⁹ These included the IMF’s own model designed to capture crises over the next 24 months, as well as Deutsche Bank’s “Alarm Clock Monthly” and Goldman Sachs’s “GS-Watch”,²⁷⁰ designed to capture crises over the next 1-3 months. In short, the models provided further support to the view that Turkey had suffered from a typical “exchange rate-based stabilization syndrome”, implying in effect, that the IMF and Turkey were silly enough to sign up for something that was doomed to fail.²⁷¹ Despite its intellectual and academic appeal, however, construing the Turkish crisis as a pure exchange rate-based stabilization crisis, largely based on *after the fact* analyses, seems to ignore several subtleties and greatly oversimplify what appears to be a fairly complex crisis.

First and foremost, many critiques of the program during and after the crises appeared to show little appreciation for the fact that many of the risks associated with these programs were known in advance, and an exit from the peg had been built in to avoid a potential long run competitiveness problem, as discussed in Chapter II on the design of the program.²⁷² Moreover, many of the criticisms were based on an incomplete understanding of the experience with exchange rate-based stabilization programs. As Table 4 shows, for instance, which was constructed on the basis of episodes described in Calvo and Vegh (1999) and Mussa, et. al. (2000), experience suggests that countries can *sustain* large current account deficits and overvaluations for long stretches of time and those who end up with devaluations and crises often do so beyond the one-year period it took for Turkey to get into crisis.²⁷³ Moreover, crises generally occur in the bust phase of the cycle (which stylized facts suggest almost always follows the boom phase), when growth declines and non-performing bank loans rise.

Table 4 - Major Exchange Rate Based Inflation Stabilization Plans

| | Begin Date | End Date | Did the program end in devaluation? | Time to devaluation | Features |
|-----------------------------------|------------|----------|-------------------------------------|---------------------|---|
| Brazil 1964 | Mar.64 | Aug.68 | No | Not applicable | Fixed exchange rate with periodic devaluations |
| Argentina 1967 | Mar.67 | May70 | Yes | 3 1/4 years | Fixed exchange rate |
| Uruguay 1968 | Jun.68 | Dec.71 | Yes | 3 1/2 years | Fixed exchange rate |
| Chilean tablita | Feb.78 | Jun.82 | Yes | 4 1/2 years | Pre-announced crawling peg followed by fixed exchange rate |
| Uruguayan tablita | Oct.78 | Nov.82 | Yes | 4 years | Pre-announced crawling peg |
| Argentine tablita | Dec.78 | Feb.81 | Yes | 2 1/4 years | Pre-announced crawling peg |
| Israel 1985 | Jul.85 | Present | No | NA | Peg followed by a series of devaluations, then a band, then a crawling band |
| Austral (Argentina) | Jun.85 | Sep.86 | Yes, September 1987 | 2 1/4 years | Fixed exchange rate followed by a peg |
| Cruzado (Brazil) | Feb.86 | Nov.86 | Yes, February 1987 | 1 year | Fixed exchange rate followed by a crawling peg; Loose fiscal policy, relied on price and wage policy. Reserves fell from the start. |
| Mexico 1987 | Dec.87 | Dec.94 | Yes | 7 years | Fixed exchange rate, followed by a pre-announced crawl, followed by an exchange rate band |
| Uruguay 1990 | Dec.90 | June 02 | No | NA | Exchange rate band with a declining rate of devaluation |
| Convertibility (Argentina) | Apr.91 | Dec 2001 | Yes | 10 years | Currency board |
| Real Plan (Brazil) Poland | Jun.94 | Jan.99 | Yes | 4 1/2 years | |
| Turkey | Dec.99 | Feb.01 | Yes | 1 1/4 year | Pre-announced crawling peg |

Source: Calvo and Vegh (1999); Mussa et. al. (2000); updated for developments in Argentina and Uruguay.

A devil's advocate view, however, could argue that Turkey might have had a rather *severe* case of an exchange rate-based stabilization syndrome. Calvo and Vegh (1999) show that for the seven stabilization programs of Argentina, Chile, Israel, and Uruguay during 1978-93, the real effective exchange rate appreciated by about 10% in the first year, real lending interest

rates declined from about 50 to 20%, real growth increased by 2% or so (from 0 to 2%), and consumption growth by 6% (from -2% to 4%). For the current account, the deficit increased by only 0.5% in the first year (from 1 to 1.5% of GDP) and only after 4 years reached 5% of GDP.²⁷⁴

It is true that Turkey showed a more dramatic movement in these variables, excepting the degree of real exchange rate appreciation, which was about the same. But even then, one should take note of the fact that the higher than projected current account deficit (5% vs. 3% for the year as a whole) contained several “one-off” elements that were, by their very nature, unlikely to be permanent or irreversible, say, in a year’s time, once appropriate policies are put in place. This is important, because from an analytical point of view, “rational” agents should normally care about the *sustainability* of the current account stance and whether the deficit assumed a *permanent* nature that could pose a clear threat to external debt sustainability.

For one thing, the scope of the boom on the demand side was, in good part, attributable to truly temporary factors, namely to an economy rebounding from a very deep recession as well as a devastating earthquake in the preceding year. For another, the numbers included a major terms of trade shock from higher oil prices, which rose by about \$10 per barrel on average for the year as a whole, incurring an additional cost of about \$4 billion, or roughly about 2% of GNP in Turkey’s energy import bill. This was a very substantial amount, but it was finance-able in the interim, and would also likely reverse itself eventually.²⁷⁵ Finally, while there is little doubt that policy reaction was not timely enough, the authorities had agreed to a fiscal package in mid-November, announced on November 15th to be exact or one week before the large outflows occurred, that signaled approximately an additional 1% of GNP tightening, while the 2001 budget, approved by mid-October, was also reasonably strong. This fiscal stance, combined with one-off factors that would partly wither away, would likely have reduced the current account deficit the following year, with the IMF projection being for a reduction in the current account deficit from some 5% of GNP in 2000 to 3% in 2001.²⁷⁶

Also, when all this deterioration was taking place on the current account side, it was arguably not the result of a severe overvaluation in the exchange rate. Arguing against a major overvaluation is the fact that the real exchange rate using the CPI measure reached close to its pre-February devaluation level within

just a year and a half of the devaluation, and even earlier for a measure based on the WPI. Taking a longer view, say going back to the 1980s, the view that there was overvaluation in late 2000 seems justified only if one believes that Turkey gained no “productivity bonus” versus the trade partners, viz. the so-called “Balassa-Samuelson effect”.²⁷⁷

By the same token, looking forward, the program’s many structural measures, and the shake-up it had called for in the corporate sector, would generate the productivity gains to justify some of the real appreciation in due course. Interestingly though, the word “productivity” was rarely uttered, or took a central place in discussing exchange rate policy. In all fairness, Governor Ercel was one exception; in every conference he attended, he showed a “productivity-adjusted” real exchange rate chart that signaled no particular alarm on the exchange rate front. But to convince the many skeptics, some of whom were outright ill-informed, a policy team with a more concerted effort was needed, to provide a perspective on Turkey’s current account deficit, what it meant, and where it was heading.

That overvaluation was not the major issue is also the view of the late Rudi Dornbusch, who instead emphasized the size of short-term debt relative to reserves.²⁷⁸ His views, as summed up in the minutes of the July 2002 NBER conference, are worthwhile reproducing here in full:

Rudi Dornbusch said that the members of the OECD club that shouldn't be there are the ones to have had a crisis. In looking for an impending crisis he advised: check for trouble spots, "look to see if there is dynamite around," and consider what might provide the spark. Turning to the macroeconomic indicators for Turkey before the crisis, he noted that growth was strong until 1997, inflation was high (but, like Brazil, people had learned to live with it), and there wasn't a serious current account problem. More negatively, the budget deficit was large (although the primary balance was not a big problem), the debt ratio was high, and there was a large external debt. On the real exchange rate, it was not obvious that there was overvaluation. On the financial system, Dornbusch said that Turkey is a very corrupt country, adding that problems in the financial system are very hard to find out about. So trouble spots? Yes, though not an imminent problem.

...

What about the dynamite? In December 1999 short-term debt was greater than reserves...Lastly, on the spark, he said that in emerging markets if you don't like one asset you leave--you don't move to another asset. All that is needed to induce exit is some event.

This view corresponds to those of at least some investors. London strategist Mr. Vogel explains:

Competitiveness was increasingly an issue, obviously, but to argue that the market saw the erosion of the real exchange rate as an issue would be erroneous. That being said, the current account deterioration was increasingly a concern, more due to credit growth than oil prices and the \$/EUR move. High oil prices and \$/EUR moves in 2000 were contributing, not critical, factors in the crisis. These pressures were clearly tolerable with better policy implementation on the monetary program and structural reform.

What distinguishes the Turkish 2000 crisis is the lack of appreciation for the nature of balance of payments financing, and the inherent vulnerability to it. The current account deficit was being financed overnight, something that typified the Turkish balance of payments since the mid-90s when foreign investment bank involvement became important. The volatility of capital inflows was very high, and the IMF/authorities did not appreciate this enough. The Turkish capital account was extremely vulnerable to day-to-day sentiment, a feature that was not appreciated enough, and could not be overcome due to the extreme rise in the current account deficit, and the artificial "tightness" of the currency board-like regime.

Indeed, short-term debt to reserves (a key indicator of currency crises²⁷⁹ and according to the IMF²⁸⁰, the single most important indicator of reserve adequacy in countries with significant but uncertain access to capital markets) had increased from about 1 at end 1999 to 1.3 in [October] 2000, even excluding several billion dollars worth of structures with London investment banks, which were booked offshore.²⁸¹

There was then, an important problem with the financing of the current account deficit and how that was linked to the monetary framework, but overvaluation as such was more a transitional cost, or a risk the designers of the program were largely aware of, that had to be borne, and fought against, by strong policy performance.

L.—B. The Trigger of the November Crisis

But a vulnerable context aside, what exactly triggered the November crisis, when arguably Turkey's disinflation program was irreparably thrown off track? This section discusses the controversy around the generally accepted trigger of the November crisis, namely a panic in the T-bill market following rumors that Demirbank was experiencing liquidity problems and selling T-bills. This view is also associated with a related view that the crisis was started by a squeeze of Demirbank by its rivals. Policymakers have concluded based on this view that taking over Demirbank early on, or insulating it from the markets in some other way (e.g. by providing it with direct liquidity (Deppler (2001a)), before the start of the November crisis would have been helpful.²⁸²

It seems to us, however, that the panic was based on rumor rather than fact, and that any squeeze by local investors happened on the back of foreign investors' exiting. What triggered foreign investor exit is not entirely clear, but it is unlikely that the panic in the T-bill market is the whole story. By implication, rumors of sales by Demirbank are unlikely to have been the (main) trigger of the crisis.

The received wisdom on the trigger as well as the sequencing of events during the November crisis is that of a somewhat conspiratorial liquidity squeeze by Demirbank's liquidity-rich rivals around November 20. As a result, the story goes, Demirbank was forced to sell a substantial amount of T-bills the next day, which caused a panic in the market and, in turn, triggered the foreign exit. This view was widely held in Ankara, Istanbul, London, and at the IMF, probably because it made sense and offered a convenient story. The IMF's December 2000 Letter of Intent, for instance, explained the sequence of events as follows:

Financial difficulties of one medium-sized bank, which was subsequently taken over by the SDIF, and the sell-off by that bank of large stocks of government paper in the secondary market led primary dealers to suspend the posting of the rates on government paper. This triggered massive capital outflows, in spite of the rise of interest rates to 100–200%.

A top official at the IMF adds:

It made sense that the crisis had been triggered by a squeeze of Demir since Demirbank was suffering from having to pay high

overnight rates. It was exposed to interest rate risk. At first overnight rates were above bond rates in the expectation that bond rates would fall. But it had become clear overnight rates would not fall.

A foreign investment bank with a local office held similar views:

One interpretation of what happened yesterday (speculative and impossible to confirm, but consistent with persistent rumors in the market) is that a number of the banks have been attempting in recent days deliberately to squeeze smaller banks by not providing liquidity in the interbank market. The objective of the central bank (when making the large liquidity injection yesterday) may have been to make sure that this strategy (of the larger banks) would not end up killing a large share of the banking system. The central bank is probably hoping that the large banks will quickly concede defeat and will provide liquidity back to the rest of the banking system.²⁸³

Although the story makes sense, there seems to be two problems with it. First, there appears to be no particular squeeze on Demirbank around November 20. For one thing, the existence of a squeeze was denied by those who allegedly squeezed Demirbank, as well as by Demirbank staff.²⁸⁴ Furthermore, no withdrawal from the ISE occurred until November 22, judging from the trading volumes. The second problem with the story is that, judging from its portfolio, Demirbank did not sell substantial amounts of T-bills at any time, and in fact on the contrary, bought some bonds on November 20 and 21 to stem the fall in their price, call it defensive play in the extreme (see Table 3 in the November chronology). Interestingly enough, one reason for its continued defense was the need to prevent margin calls from being triggered, as Demirbank's reservoir of T-bills for use as margin on its overnight borrowing was shrinking as prices were rising.²⁸⁵ According to Demirbank staff,

Keeping rates down was very important for Demirbank at that stage as it wanted to prevent margin calls (more collateral) as rates jumped into the 50s from the 40s. While it always had enough T-bills to provide more collateral, coming up with 100s of trillions of collateral would certainly hurt.

As a result of the defense, yields on papers held by Demirbank – it held a large fraction of the August 22, 2001 and

February 20, 2002 papers – moved relatively little (see Chart 4 in the November chronology). During the November crisis, “Demir held them all”, and could keep the price constant.²⁸⁶ The February 21, 2001 paper, on the other hand, which was held predominantly by foreign investors, was one of the most volatile bonds, both in terms of yields and price.

There is also a view that there was a second squeeze on Demirbank on November 22, with Demir’s rivals “jumping on the bandwagon” as they saw foreigners leave and interest rates rise.²⁸⁷ This view, unlike that of lines being cut on the 20th of November, is not inconsistent with the facts, but is hard to prove. Local banks did place demands for foreign exchange at market opening (interview with a top official) and delayed offering liquidity at the ISE, “as they waited for interest rates to rise later in the day”.²⁸⁸ To the extent local banks bought foreign exchange or delayed supplying liquidity, they pressured liquidity and interest rates, and the idea is that this was meant to help “finish off” Demirbank.

But as noted above, withholding liquidity when interest rates are expected to increase can be seen as a rational business decision, that could only be prevented by an immediate announcement by the CBT that NDA ceilings could be breached. It should also be noted that if there was a deliberate “second” squeeze, it was part of the dynamics of the crisis, not its trigger. Foreign exchange purchases on their own account for local banks were small compared to withdrawals by foreigners, and seemed to come on the back of foreigners withdrawing. Finally, it should be emphasized that there was no real crisis until there were foreign exchange purchases, because a simple flight to quality away from Demirbank into other TL instruments such as CBT repos would have allowed the CBT to recycle the liquidity to Demirbank, without breaching the NDA ceiling.

This brings us to the second candidate trigger for the crisis: large demand for foreign exchange by foreign investors, and notably Deutsche Bank and its clients, rather than by local banks. Many Turkish bankers indeed held the view that “Deutsche started it all, not the repo market.” A top bureaucrat echoes this:

It was not the squeeze, but foreigners, who started the crisis. They probably obtained funds from liquid banks and the CBT. They normally close balances by end-year, and this was just advancing it.

In fact, Deutsche Bank came to be blamed by many for starting the crisis. An analyst close to Deutsche Bank noted that this was unfair:

For a few weeks, banks and traders blamed Deutsche for engineering the crisis. Unwritten rules between traders were broken. However, nothing had been pushed from Germany or London. There was only execution of precautionary measures. Deutsche was blamed by the locals, to the point where the IMF and Bundesbank enquired with Deutsche.

The question then is what prompted the foreign outflow? Fortunately, we have some answer to this question in the form of the statement of the Chairman of Deutsche Bank's local branch to the press (the daily *Yeni Binyil*). He stated that the bank's clients (not Deutsche itself) transferred out \$1.5 billion over a number of days, because they were annoyed by the lack of privatization, the banking sector rumors, and the cost of insolvent banks to the treasury (Dow Jones Newswires Turkey: Business News from the Turkish Press, December 8, 2000). *We were not able to obtain more precise information as to the motives for the original exit. A top banker close to Deutsche bank could only tell us that "Foreign investors were worried about devaluation and inconvertibility risk (capital controls). Adding the numbers, they wondered how they could all get out at the same time. Would reserves be sufficient to meet all demands if everyone acted at the same time?"*

In conclusion, while we do not have a direct account from those investors who chose to exit first and the first days of the crisis remain shrouded in mystery, it seems safe to say that the official account of the crisis, as one triggered by a squeeze of Demirbank by its rivals and subsequent sales of T-bills by Demirbank, is not correct, while a modified version which would have rumors rather than fact be the trigger of the crisis may not be the full story.

M.—C. Crisis Management and the Role of Monetary Policy

Perhaps the most "popular" controversy on the crisis related to its management, particularly as regards the role of "liquidity provision", or monetary policy in general. In particular, the adherence to the NDA ceiling under the program in the lead-up to the November crisis and its reinstatement at end-November came under heated attack. The tightening of the NDA ceiling at end-

January 2001, on which the IMF insisted in the face of resistance at the CBT, was cause for further criticism. Finally, adherence to the NDA ceiling was seen as causing the collapse of the payment system in the February crisis.

a. The week before the November crisis

One critical view, mostly identified with Ercan Kumcu, an ex-Deputy Governor of the CBT is that the November crisis started because of a liquidity crunch, which was badly managed by the IMF and CBT.²⁸⁹ Kumcu argued in a Financial Times op-ed that the central bank in the week before the November crisis stuck too rigidly to the NDA target:²⁹⁰

In November, rising interest rates caused by a seasonal demand for foreign exchange by Turkish banks was misconstrued as an attack on the Turkish lira, reminiscent of the outflow of short-term capital that caused Asia's financial crisis in 1997. In fact, Turkey's problem had a different root. Initially, the central bank did not react to the rising interest rates. Instead, it adhered to a strict monetary policy rule of keeping net domestic assets/money supply within a narrow band. This was part of the IMF agreement.

By seasonal effects, Kumcu meant locals' closing of open foreign exchange positions as part of their fourth quarter window dressing of their balance sheets with a view to having balance sheets presentable to rating agencies and potential creditors. In his view, the seasonal effect was compounded by controversy surrounding the size of these positions and uncertainty about whether the new BRSA, like its predecessors, would tolerate open positions. Our interview with Ercan Kumcu clarified the timing he had in mind: His criticism of the central bank sticking to its NDA target refers to actions the week before the crisis:

The problem started around November 13th or 14th. I learnt from market participants that Demirbank was trying to sell TL10 trillion in bonds. Every 15 minutes that they could not sell, they increased interest rates. My hunch is interest rates would not have risen and the crisis not occurred if the central bank had injected liquidity then. NDA would not have had to increase much.

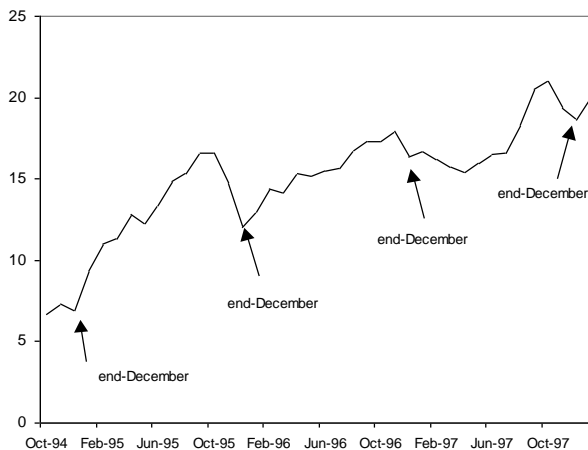
Volatility in the money and bond markets was indeed significant during November 14-16. Overnight rates on the ISE and

CBT auctions were very high and bond yields increased by 10%, both for the benchmark bond and bonds held by Demirbank.²⁹¹ However, as a top bureaucrat pointed out, money market interest rates were very low on the 17th of November (the minimum rate at the ISE reached as low as 20%). In his view, this constituted evidence that liquidity was plentiful on the 17th to a degree that the crisis could not have started then, contrary to what the critics claimed.²⁹²

While the picture on liquidity during the week preceding “Black Wednesday” is mixed, it is true that anxiety was high around that time because it seemed that the monetary program was doomed to run into problems in the last quarter. The monetary framework was likely to be too rigid to handle seasonal outflows.

As a backdrop, a constant NDA limit in *nominal* terms for 2000 as a whole implied an ever tightening liquidity in real terms, but perhaps more importantly, was exacerbated by delays in privatization, the growing current account deficit, and end-year effects such as the seasonal weakening in the trade balance in November and December and squaring of the books by local and foreign investors.²⁹³ End-year effects are traditionally significant in Turkey, as Chart 7 illustrates (1998-2000 are not included as there were large in or outflows in the fourth quarters of these years). They were expected to be more sizeable in 2000, reflecting unusually large short-term flows and open positions and stronger enforcement of open position regulations.²⁹⁴

Chart 7. Gross Foreign Exchange Reserves of the CBT
(in US\$ billion)



For instance, a senior banker explains:

December is a dead month in London and New York. In London, the number of transactions starts to dwindle as early as September as bonus talks start and traders don't want much risk on the books and ensure they have good relations with 'compliance and records'. As part of the cycle, the structures that were unwound in the November crisis would have been unwound anyway.

The IMF was counting on remedial policies in the fiscal area to stem demand as well as an "automatic adjustment mechanism" whereby tight liquidity would lead to higher interest rates and adjustments of the current and capital account. End-year effects, it seems, were simply ignored in the design of the program. A top bureaucrat noted,

From August, liquidity was tight because of a squeeze in the balance of payments. The central bank could not afford to lose credibility by giving up the currency board rules, the government needed to adjust policies to redress this.

This seems like a reasonable position that was being underemphasized by the critics. As discussed above, the government did not muster the will to introduce measures that would stem demand until November. If the central bank had freely provided liquidity to offset the drain on liquidity caused by the lack of action on privatization or demand management, Turkey might have ended up with the type of "slow death" which Mexico faced in December 1994.²⁹⁵ Reserves might have slowly declined, until the inevitable speculative attack. A different and parallel approach might have been needed, nevertheless, to handle end-year effects. Such liquidity provision would have been "technical", alike to the liquidity provision by central banks all over the world to help the transition to Y2K. Flows were highly interest-inelastic at end-year, so that the "automatic adjustment mechanism" would not possibly work in the right direction. Hence ignoring end-year effects has been heavily criticized. As one banker interviewed by Reuters put it,

A decline in liquidity was inevitable because of the approach of the end of the year. The authorities were supposed to be ready for this, but did not have a plan B available.

We can't just say that the crisis was caused by bankers taking too much risk. Everybody could help in overcoming the problem. Everybody is guilty and there is a lesson for everybody to take.²⁹⁶

If foreign players had felt unconstrained by "bonus time", they might have arbitrated away a seasonal shortage, but being so constrained and given the risky outlook in Turkey, they were to the contrary positioned to exit, by being invested mainly in very short-term instruments.

b. The first week of the November crisis

At the onset of the crisis on Black Wednesday a decision was made, with the acquiescence of the IMF later in the day, to accommodate outflows and breach the NDA target. Large liquidity injections continued for several days in step with capital outflows. Interestingly, some at the IMF and in London, as well as one camp within the CBT, looked at this from the opposite angle: outflows would have been avoided and reserves conserved if liquidity had not been provided.²⁹⁷

While the above statement has to be true by way of identities, the real question is what would have happened if monetary policy had been less accommodative to outflows during November 22–November 28. The answer hinges on the interest elasticity of potential flows. With responsive flows, tight liquidity engenders high interest rates and a reversal of flows. Hence an interest rate defense has a chance of working without being too costly to the banking sector. As the late Rudi Dornbusch argued elsewhere (e.g., his 2001 AEA lecture) providing liquidity at low interest rates is tantamount to encouraging speculation on your currency. In his mind, high interest rates help to defend a currency. However, with inelastic flows, high interest rates do not lead to a reversal of flows, and there is a risk of payments system collapse, as banks cannot obtain the funds necessary to fulfill their obligations. Such a payment collapse came close to materializing in December 2000, when a new NDA target was put in place²⁹⁸ and occurred during the February crisis (see below), when tight monetary policy led to defaults of liquidity short banks that cascaded throughout the banking sector. While a payments system collapse would help save reserves in the short run, it would not do much for confidence in the long run and thus ultimately be unsuccessful.

On balance, flows appeared to have been interest inelastic or worse, that is higher interest rates did not prevent outflows and

even caused them to accelerate. High interest rates did apparently help deter the shorting of the currency. Several interviewees referred to the existence of offshore borrowing in London, where one Turkish bank in particular lent lira to foreigners, but that overall shorting was limited because high interest rates made it so expensive and because of concern over counterparty risk.²⁹⁹ Furthermore, high interest rates probably enticed local depositors and bankers to stay in lira (at least those that were short of liquidity). On the other hand, high interest rates triggered stop loss sales, margin calls, and the unwinding of structures. And as noted in the chronology, foreign exchange depositors took high interest rates as a signal that it was time to exit.

c. Events at end-November

Around November 29, after reserve losses since November 21 reached over \$5 billion, the IMF insisted that no additional liquidity be provided, apparently as a condition for a new program. Istanbul bankers were informed of the decision that a modified NDA ceiling would be reinstated, at a meeting on the 29th at the Banks Association Headquarters by Governor Ercel. Rates subsequently rose to what are probably world records. Bankers saw the introduction of a new NDA ceiling as a mistake, believing that flows were interest inelastic at this stage, with the end-year in sight and some structures not yet unwound.

Mr. Kumcu made the following point:

Telling the market they would again stick to NDA was a strategic mistake. When the market expects a shortage of liquidity, it stops supplying its own liquidity driving rates sky-high.

While reinstating the NDA ceiling helped safeguard reserves, the question is whether this justified the damage to the illiquid part of the banking sector that followed. This had consequences for the ability of the banking sector to carry government debt, which played a role in the February crisis, and for the ultimate cost of the banking sector bailout.

d. The Run-up to the February Crisis

The context was gloomy enough, but one technical issue that disturbed the market players in particular and contributed to the exasperation ahead of the February crisis was the tightening of the NDA target, yet again. After the November crisis a new schedule

for NDA had been introduced, whereby NDA was supposed to decline gradually from its crisis high. The corridor on NDA was abolished, affording the central bank the opportunity to sterilize capital inflows thereby creating room to relax policy should it prove necessary. The ceiling initially proved easy to meet given capital re-flows, which was welcomed by the markets which perceived this as a reduced risk of a November-style liquidity crisis.³⁰⁰ On January 19th, the stock market was temporarily back to the levels at the beginning of the November crisis. Still, for the NDA limit not to create a problem in the future, the revenue from the sale of GSM license (some \$2.3 billion), which had taken place almost a year ago, was also necessary. Banks calculated every day how much foreign exchange inflow was necessary to meet the target. In the second half of January, it became clear that the proceeds would materialize, banks relaxed, and bond and money markets rallied (see Annex II).

But then, at end-January, the IMF lowered the NDA limit, presumably in order to remove any discretion from the CBT. In bankers' view, however, this meant that the risks had increased substantially, and the morning after learning the news, banks started to change their foreign exchange and interest rate exposure.³⁰¹ A banker's experience was as follows:

The week before, I had been selling the idea to foreigners that Turkish T-bills were a safe investment. Investors wouldn't get hit on interest rates because the central bank had room to inject liquidity in case of pressure. I looked like an idiot when a few days later the ceiling was tightened.

Ankara had fought the tightening of the NDA ceiling hard, but had not prevailed. A top bureaucrat tells the inside story:

After the new SRF, the central bank, not the IMF, planned a buffer in NDA. We intentionally kept 900 trillion or \$1.5 billion. We were not sure if it was enough to fight a speculative attack and tried to keep the buffer. There were capital inflows of \$4.5 during the first 2 weeks of January. Domestic banks were opening positions.

The IMF started to discuss the NDA buffer. It was totally against it. Credibility would be higher with a tighter ceiling. The Board would go crazy if we kept it as it was. We fought till Thursday (end-January). Supposedly Fischer was stubborn on this issue, though later on the 19th of February, on the phone, he claimed he

had no idea that there had been so much resistance in relation to the NDA issue. I threatened to resign believing that the program would collapse, that we were making an invitation to a speculative attack. This was the strongest resistance the CBT had shown to the IMF. It had been against the currency board, it had shown mild resistance against an ERB without contingency funding, but it had never shown such strong resistance.

The NDA decision was then leaked. Someone from the IMF staff was rumored to have passed the information to London.³⁰² The first response came from London then the locals followed. All this before the Letter of Intent was published. Without the NDA issue, the crisis would have been postponed by a few months.

The IMF downplayed the role of the tightening of the NDA ceiling in reversing confidence. According to a top official at the IMF:

I was among those who believed that it was not necessary to tighten the NDA ceiling but I don't believe it was the reason for the crisis. The link between liquidity and nominal interest rates in a country like Turkey is swamped by the effect on interest rates of exchange rate uncertainty (will the wounded peg be abandoned?) Inflation continued to outpace depreciation. There was a streak of slippages plus there were political problems, all this in a context of shaken credibility. The situation was just too fragile after the November crisis.

e. The February Crisis

As noted in the February chronology, the days following the initial speculative attack on the lira on February 19, the CBT provided very little liquidity, and overnight rates mushroomed. The initial reaction to the interest rate defense was to inspire confidence. For instance, an economist at a foreign investment bank noted how its analysts believed the central bank would be able to do a successful interest rate defense. Some local bankers shared the sentiment. As a consequence of the defense, however, state banks and a few other banks were not able to meet withdrawals and their default led to a chain of defaults and a collapse of the payment system. Another consequence was to imperil the results of the auction earlier that day. Economist Mr. Ozturk noted

The Tuesday morning auction went well. Management of liquidity in that afternoon was very important as there was a big redemption the next day. If there were to be a liquidity problem, the central bank should have given liquidity. If interest rates were to reach 4-digit levels, that was definitely going to be perceived as the sign of a serious problem.

Why was the central bank so tough on February 20? In hindsight this behavior seems to imply that the CBT believed a devaluation was likely, or that at least that liquidity provision would not reduce the likelihood of devaluation, while coming at the cost of reserve losses, as was the case during the November crisis.³⁰³ As noted in the chronology, the CBT's reference point was that liquidity provision had failed in the November crisis; and that \$16 billion in repos at state and SDIF banks could turn into foreign exchange demand if liquidity was provided.

This behavior has prompted some observers to blame the IMF and Ankara for not putting up a strong enough fight. A top Turkish banker, for instance, told us:

The devaluation could have been avoided. Sentiment on Tuesday was good as evidenced by the large size of the auction. Even on Wednesday sentiment was OK. It was mostly foreigners who did not roll over their overnight lending to state banks. State bank defaults only reflected the central bank not providing them with liquidity. A large bank's default on its commitment at the auction reflected privileged information, not the prevailing sentiment.³⁰⁴

Ercan Kumcu in the above-mentioned Financial Times article wrote,

In both crises the IMF panicked. Instead of finding a workable approach to smooth out sharp fluctuations in financial markets, it seemed more concerned with reducing Turkey's loss in international reserves. In doing so, the IMF tried to minimize its future cash support to Turkey in the event the country lost substantial reserves. Yet with international reserves during the crises at historic highs, one can hardly characterize either of the two events as "a foreign exchange crisis". The only possible conclusion is that the IMF has to be held accountable for its actions and their effects on the Turkish economy during the last three months.

In our subsequent interview, he elaborated:

Why the devaluation? The IMF needed an excuse to get out of the system. November was its first try. My hunch is Stan Fischer wanted an excuse to get out of the foreign exchange system so he named the November attack a currency attack.³⁰⁵ Turkey was stubborn enough then. In February the Turkish government ran out of arguments to defend the peg. Fischer had one thing in mind: Argentina had not exited on time. It waited until when abandoning the system would bring about a crisis by itself and got itself into a “no win” situation. As for Turkey, it met fiscal targets on paper but more importantly, was whether the fiscal effort could be sustained and how fiscal performance affected inflationary expectations. Fischer must have decided that rather than make the country live with an unsustainable rule, the peg should be exited.

The February crisis could have been avoided too. Intervention is like a war, you don't know if you will win or lose. Your only advantage as a central bank is that all know that you have a bigger portfolio than traders individually. Our central bank didn't want to go into battle, hence it definitely lost the war.

The above discussion highlights the role of expectations: clearly there was still a scenario where a devaluation could be avoided, since auction rates for 1 month of 144% (annual, compounded) on February 20 did not imply an expectation of imminent devaluation. But there were no guarantees. The CBT must have worried it would be tested again and again given the overnight borrowing of the banking system³⁰⁶ and with a debt-refinancing hump starting in May and a planned exit from the peg in July.³⁰⁷ Defending the currency longer would imply tight liquidity, which would make it yet more difficult for banks to roll over maturing debt.³⁰⁸

Was the central bank justified in being willing to sacrifice the payment system for reserves, even assuming that there would be a devaluation? This is an interesting question arising out of the Turkish crisis, and one wonders why the issue does not seem to have come up in other crises. Was the Turkish banking system unique in being short liquidity so that an interest rate defense (following an initial outflow) would mean payment defaults? At any rate, the payment system collapse was viewed by many as the largest cost of the crisis. An economist at a London investment bank commented:

A number of foreign banks were not able to close. Foreign investors had not been able to get their money out of equity. "Turkey turned into Egypt." All this had done lasting damage, as liquidity risk is not something foreigners forget easily (as opposed to a devaluation). The next week, all Turkish banks were downgraded. The S&P's bank downgrades occurred because of the default of 2 counter-parties.

Other interviewees pointed to a subsequent widespread lack of trust internally among Turkish banks,³⁰⁹ which they claimed could help explain the depth of the subsequent recession. According to a senior banker:

The payment system collapsed for 2 full days. Breaking the IMF NDA rule would have been better than enduring this collapse. It imposed the largest damage in terms of lost confidence in counter-parties and output loss after the devaluation. Without the payment collapse, there would have been a platform where the new program could work, markets would have lived. But banks lost credibility in each other's eyes. There was no bond trading, no foreign exchange trading, only overnight lending.

Turkish Crises in the Context of the Academic Literature

It was 11 a.m. on a fine summer morning in Sarajevo, June 28, 1914, when the driver of an automobile carrying two passengers made a wrong turn...The automobile stopped directly in front of a nineteen-year-old Bosnian Serb student, Gavrilo Princip. A member of the Serbian terrorist organization Black Hand, Princip couldn't believe his luck...He drew a small pistol from his pocket. Pointed it. Pulled the trigger twice. Within thirty minutes, the Austro-Hungarian Archduke Franz Ferdinand and his wife Sophie, the carriage's passengers, were dead...in the days that followed, Austria used the assassination as an excuse to begin planning an invasion of Serbia.

...

When the First World War ended 5 years later, ten million lay dead...Why? Was it all due to a chauffeur's mistake?

from Ubiquity by Mark Buchanan

In this chapter we address the broad question of whether the November and February crises could have been avoided, using the academic currency crisis literature as an organizing framework. The academic literature is now very extensive, and the modeling of currency crises has gone through “three generations”, the so-called first, second, and third generation models. One main difference between these models is the fundamental that causes crises: fiscal laxity and credit growth in first generation models; unemployment, and other variables which respond to exchange rate expectations in second generation models; and weak bank and corporate balance sheets in third generation models. Another important difference is that second and third generation models include a role for “self-fulfilling expectations”, i.e. how an adverse shift in expectations can bring about a crisis.

Self-fulfilling expectations are of special interest to us in answering the question of whether the crises could have been avoided – or whether it was all “due to a chauffeur’s mistake” as the above-quote would suggest – because they give a significant role to speculators, in addition to fundamentals/policies, in bringing about a crisis. While it is true (and often noted) that even in models with self-fulfilling expectations there is an important role for fundamentals (as crises can only occur with sufficiently weak fundamentals), a crisis triggered by expectations could to a certain extent have been avoided. Along those lines, it has been argued that the February was avoidable in the sense that a very strong, coordinating signal was needed to trigger it.³¹⁰ Another angle provided in the literature on the question of whether crises are inevitable is that predictably declining fundamentals always imply a “unique crisis equilibrium”, in which case it is rational to expect a crisis and all the blame for the crisis lies with fundamentals/policies.

We now briefly review the literature with emphasis on key models, while commenting on their applicability to the Turkish case, in light of information provided by our chronology.

A. First Generation Models

First generation models (Krugman, 1979; Flood and Garber, 1984) generated currency crises under fixed exchange rate regimes as the result of the financing of government deficits by printing money. The underlying assumption in these models is that agents are not willing to accumulate additional government debt. The excess supply of money resulting from monetary financing of deficits leads to capital outflows and thus loss of foreign exchange reserves. Under the assumption of “perfect foresight”, a currency attack occurs at a time when there are still sufficient reserves to meet demand for such reserves, so that there is no devaluation at the time of the attack. Indeed, devaluation would be inconsistent with perfect foresight, as agents would not knowingly accept a capital loss on their excess money balances. These models feature a single equilibrium, i.e. a currency attack occurring at one precise date. An attack cannot succeed earlier, as the central bank’s foreign exchange reserves are still ample and a float would lead to appreciation of the currency, nor will it occur later, as this would violate the assumption of rationality/perfect foresight, since agents would suffer a capital loss that they correctly anticipated.³¹¹

These models clearly do not apply to the Turkish crises, given the use of debt-financing rather than money-financing of budget deficits, and the stability of foreign exchange reserves in the run-up to the crises.³¹² However, a recent extension of these first generation models that allows for “prospective deficits,” or deficits incorporating contingent fiscal liabilities (Burnside, Eichenbaum, and Rebelo, 2001a) has been used by several commentators to explain the Turkish case.³¹³

The twist in the Burnside, Eichenbaum, and Rebelo model is that the sudden revelation of bank bailout costs leads the public to expect monetization of these costs at some point. Debt financing is not an alternative in the long-run: the model assumes that the government adheres to an intertemporal budget constraint, hence an increase in debt today will have to be paid off at some time in the future. Under the assumption that reductions in the primary deficit are impossible (that is, ruling out increases in taxes or reductions in non-interest expenditures), the conclusion is that prospective deficits will have to be financed through seignorage revenues.³¹⁴ This, in turn, is consistent only with a floating exchange rate.

The view that prospective deficits played a role has gained currency in Turkey, as expressed by Mr. Serdengeçti at the annual ODTU meetings in September 2001:

The vulnerability of the banking sector has also implications for the sustainability of the regime from another angle, which has been largely overlooked to date. While at first glance, the fiscal policy appeared reasonably tight during 2000, prospective deficits associated with implicit bailout guarantees to a failing banking system raised serious concerns about the sustainability of the peg. The expectations that these future deficits would be at least partially financed by seignorage revenues or an inflation tax on outstanding nominal debt, contributed to the collapse of the peg in Turkey.³¹⁵

There were indeed some prospective deficits on the horizon. On November 9, a cost of \$6 billion for bank recapitalization for the 5 banks under the SDIF had been announced, amidst continued jailing of bankers and rumors of many more skeletons in the closet. And the cost of insolvent banks to the treasury figured among the reasons Deutsche’s clients gave for their exit on Black Wednesday, along with the lack of privatization and the “banking sector rumors.” However, \$6 billion is a comparatively

small amount that could be financed through a small increase in the primary surplus over time. (In fact, the following year the government did manage, despite a severe crisis, an increase in the primary surplus of the public sector from 2.3% to almost 6% of GNP.) Furthermore, bank recapitalization took the form of issuance of non-cash bonds to troubled banks (i.e. bonds that cannot be sold in the market), so that the Treasury's financing need was not increased, at least initially (it only needed to raise additional financing when this debt needed to be retired to provide troubled banks with liquidity, for instance, to meet deposit withdrawals). Subsequent to the November crisis, banking sector problems increased, but they were still small in a comparative perspective until after the devaluation.³¹⁶ Hence there was no good reason, *ex ante*, for markets to expect, in November or February, a monetization of deficits purely as the result of prospective deficits resulting from bank recapitalization, and indeed none of our interviewees referred to this possibility.

An alternative, related explanation for the February crisis is that of anticipated rollover problems for domestic debt of the government (Ozatay and Sak, 2002). In fact, rollover difficulties were anticipated for the May 2001 auction (cfr. our interviews), given the uncertainties associated with the transition to a float³¹⁷ and the devastating effect of the November crisis on banks.³¹⁸ Such rollover problems offer the prospect of monetization when the Treasury has nowhere else to turn. This explanation, which emphasize liquidity, does not suffer from the main problem in the Burnside, Eichenbaum, Rebelo story, which centers its argument around solvency. In other words, an increase in debt because of bank recapitalization costs does not cause immediate problems (the primary surplus could be raised; funds need not be raised right away), whereas, with debt-rollovers problems (because of a weak banking system unable to carry debt), there is an immediate problem. Thus the prospect of rollover problems appears to offer a more plausible explanation than prospective deficits for the February crisis.

N.—B. Second Generation Models

The EMS crises of 1992 led to the development of second-generation models, where expectations of crisis may be self-fulfilling and there are multiple equilibria. In the most popular class of models (Obstfeld, 1994), devaluation is a *choice* of an

optimizing government, which trades off the reputation and other losses in case of devaluation against the benefits of devaluation (which could include lower interest rates or lower unemployment).³¹⁹

Obstfeld lays out a number of ways in which expectations of devaluation can be self-fulfilling. First, expectations of devaluation can generate strong wage-demands and high unemployment, pushing the government into choosing devaluation in order to reduce real wages. In the absence of such adverse expectations, wage-demands are less and do not need to be eroded by inflation/devaluation. There are up to three equilibria for the expected value of devaluation in this model. Alternatively, expectations of devaluation can generate high interest rates, thereby adversely affecting government debt dynamics or the health of the banking sector, and providing an incentive for the government to devalue. Masson (1999) lays out a model where the government devalues when its reserves hit a certain threshold. Expectations of devaluation are self-fulfilling because they lead to higher debt service costs and a faster erosion of reserves. Bensaïd and Jeanne (1997) develop a model with a large number of equilibria for the probability of devaluation, assuming asymmetric information between the government and speculators regarding how long the government can bear the pain of an interest rate defense. In this model, speculative attacks always succeed, absent some good news arriving, or speculators becoming financially exhausted. This is because the initial attack weakens the government's resolve and increases the probability of devaluation, justifying further increases in interest rates.

In the November Turkish crisis, the most obvious cost of defending the exchange rate was the cost of high interest rates to the banking sector (of course, devaluation would also hurt the banking sector, but a defense at high interest rates beyond a few days would be even more costly). Factors emphasized by Obstfeld (1994), such as high unemployment and high long-term interest rates were not relevant, given that abandoning the peg could be expected to make the situation even worse. Not surprisingly given the large costs of both an interest rate defense and devaluation, the government chose instead to take actions that could satisfy the IMF and generate additional IMF support.³²⁰ In the February crisis, the most obvious benefit of a float would be to permit monetization of deficits without reserve losses, should rollover difficulties materialize.

There are two difficulties with models of multiple equilibria, however. First, the jump from a good equilibrium to a bad one is not well-explained. It is quite a different thing to know that a shift in expectations can generate a devaluation than to coordinate expectations on a different equilibrium. The literature refers to so-called “sunspots”, i.e. publicly observable random events which act as signals and help agents to coordinate. Second, the existence of multiple equilibria requires so-called “common knowledge” in the first place, which implies that investors observe others’ expectations and have a shared view of fundamentals as well as of how fundamentals affect the government and the probability of devaluation (Morris and Shin, 1998). With common knowledge, investors all calculate the same probability of devaluation, given known fundamentals. They also calculate how a shared change in expectations affects this probability and from this infer whether fundamentals are in a range that allows for multiple equilibria.

By contrast, when agents receive only private signals, i.e. information or views of information different from others and not observable by others, multiple equilibria may not be possible in certain setups (Morris and Shin, 1998).³²¹ More generally, multiple equilibria are not possible when private information is sufficiently “precise” relative to public information (public information defined as shared views of a situation, not just publicly available official data) (Morris and Shin, 1998, Sbracia and Prati, 2002, Tarashev, 2003). Morris and Shin show this result in a model where for sufficiently bad fundamentals the government devalues even in the absence of speculative pressure.³²² For poor fundamentals, agents receive poor signals and assign a high probability to the government devaluing even in the absence of pressure. They therefore attack the currency. In the presence of pressure, the government can be expected to devalue at somewhat better levels of fundamentals, however. This in turn justifies attacking the currency for better signals. Morris and Shin prove that there is a threshold level of fundamentals where just enough agents attack the currency that the attack succeeds. This is in contrast to the finding in multiple equilibria models, where a crisis can be avoided even with poor fundamentals if expectations are favorable. In the Morris and Shin model, expectations are not free to jump this way but are determined within the model through the induction process described above.

Also of interest is the fact that crises can develop rapidly in the face of small negative shocks if fundamentals are initially just

above the threshold. Hence the Morris-Shin model is able to explain sudden large attacks in the absence of major bad news, without having to refer to sunspots.

In the Turkish case, the first difficulty with models of multiple equilibria (how to explain jumps across equilibria) is surmountable as there were plenty of candidates for coordinating expectations on a bad equilibrium. For the November crisis, these include rumors of Demirbank selling T-bills and news of further banking investigations under Operation Hurricane. The strongest “sunspot” came in the February crisis in the form of the fight between the President and PM, and perhaps also the payment system collapse. While these candidate “sunspots” also involved substantially bad news, the news was arguably not bad enough in itself to make a crisis inevitable.

The second issue is more difficult to dismiss, i.e. it is possible that private information was sufficiently precise relative to public information in the periods preceding the November and February crises, so as to rule out multiple equilibria. There was clearly a range of views on the likelihood of devaluation, especially at the beginning of the November crisis, when most Turkish banks did not join foreigners in the speculative attack. This was in part because they were liquidity constrained (not having liquid TL assets that they could convert to dollars) but also because they, and domestic depositors, had experienced many episodes in which the TL successfully withstood large amounts of pressure, as in the wake of the Russian crisis. For many foreign investors the salient experiences included instead the success of many speculative attacks in other countries, even at high levels of reserves. In February views also differed, with some viewing devaluation as not inevitable even conditional on the fight and payment system collapse (see “Crisis Management and the Role of Monetary Policy” in Chapter VII). It is therefore not implausible to posit that private information was sufficiently precise relative to public information, in which case the single equilibrium model of Morris and Shin becomes applicable.

If one subscribes to the single equilibrium view, one takes a less sanguine view regarding the inevitability of crisis: as long as fundamentals were close to the threshold of attack, a small negative shock could cause the economy into crisis, and staying out of crisis would require very strict adherence to the program and good luck. In a [multiplesecond](#) equilibrium view, the demands on policy makers would be milder: one would only have

to avoid sending a strong negative signal that could coordinate expectations on the bad equilibrium.³²³

One final point to make in the context of the Morris-Shin model relates to the participation of hedge funds. Corsetti, Dasgupta, Morris, and Shin (2001) find, not surprisingly, that if a large trader moves first and this is observed, large traders can move the market.³²⁴ This is because the large trader's move acts as a signaling device that facilitates coordination among small traders. If large traders have an informational advantage, small traders follow them blindly. This would explain herding behavior after reports that one or several large Deutsche bank clients exited on Black Wednesday.³²⁵ (A large number of hedge funds were active in Turkey before the November crisis, though according to our interviewees none had positions as large as the mysterious Deutsche client/Caribbean based (?) hedge fund.³²⁶)

Krugman (1996) further showed how multiple equilibria (and by extension Morris-Shin type single equilibrium) are not possible in the context of second-generation models with an optimizing government as long as "fundamentals" are deteriorating deterministically.³²⁷ In such circumstances, the government is certain to devalue at a given point even in the absence of speculative pressure, and anticipating this agents require a compensating interest differential, pushing the attack back in time until the first date an attack can succeed. As in Krugman's original (1979) model the attack time is unique and there is thus only one crisis equilibrium.³²⁸

Krugman (1996) also allows for probing attacks, or attacks that are only successful if the government has relatively low costs of abandoning the peg. With predictably deteriorating fundamentals but uncertainty about the government's preferences there is again a single equilibrium but the market does not know where it lies. That is, the market figures that if the government leans toward devaluation, a crisis will occur at an early date, but if it resists devaluation, at a later date. Interest rates rise at the early date reflecting the likelihood of an early devaluation. The government may defend the currency, however, and if fundamentals continue deteriorating a crisis will happen at a later date.

From this perspective, were fundamentals expected to deteriorate predictably in the Turkish case (as in Krugman, 1996, which was inspired by the pressure that German unification was putting on the EMU), inevitably bringing on a crisis without an

attack? This does not seem to be the prevailing view before either of the crises. In the November crisis, reserves were stable in the preceding weeks and months. The current account deficit was large, but fiscal measures had just been taken to address this. Closing of open positions at end-year would pressure interest rates and reserves, but devaluation itself was not inevitable, as at least part of open positions could be closed through window-dressing operations (and reversed after the New Year) as in the past. Similarly, there was a possibility that Demirbank would experience liquidity and solvency problems, the effects of which would ripple through the banking system,³²⁹ which was not that healthy to start with. However, absent foreign exchange outflows (i.e. absent an attack), the central bank could always re-circulate liquidity.³³⁰

In the February crisis, the outlook was more gloomy. Banks' capacity to carry debt had been damaged and there was a view that the central bank might choose to exit the peg early.³³¹ But this was again not a foregone conclusion. In terms of other fundamentals, inflation was gradually declining with January 2000 inflation coming in at below 2%, and a number of observers believed inflation expectations were being broken; furthermore the exchange rate was not severely overvalued, a point underscored later by the fact that it took only slightly over a year for the pre-devaluation real exchange rate to be reached again (as discussed above).

On balance it seems that devaluation was not inevitable and that the November and February attacks were not motivated by the Krugman-type calculus discussed above. However, this also does not mean that there were multiple equilibria; in fact, a single equilibrium "knife-edge" view of the attacks seems to us as the most plausible story.

9.—C. Third Generation Models

Third generation models of a wide variety emerged after the Asian crisis of 1997-98, with the role of bank and corporate balance sheets as their common denominator. These models often feature twin crises, i.e. banking and currency crises, an overview of which are provided in Allen, et. al. (2002). In these models, banking or corporate problems, without any initial overvaluation, can generate a currency crisis, through one of the following mechanisms, as discussed in Jeanne and Zettelmeyer (2002): (1) the government chooses to finance bank bailout costs through

monetization of deficits, which can take the form of seignorage revenues or debt deflation (higher prices reduce domestic debt/GNP). This in turn leads to a depreciated exchange rate (see Burnside, Eichenbaum, Rebelo, 2001a,b); or (2) banking difficulties lead to lower output and a lower equilibrium exchange rate.

These models can have single equilibria in which a crisis results from a bad shock, as in Burnside, Eichenbaum, Rebelo (2001a; discussed in the section on first generation models). More often, the models feature multiple equilibria, using as a key factor large currency mismatches in bank or corporate balance sheets. In that case, it is known that a large depreciation will cause bank or corporate net worth to decline, exacerbating bank bailout costs or the decline in output, which in turn validates the expectations of depreciation [Burnside, Eichenbaum and Rebelo [2001b]. Two equilibria emerge, one with and one without devaluation, and expectations are self-fulfilling. In the process, with incomplete deposit insurance, bank runs can occur.³³²

Bank-centered models are attractive in the Turkish case because of the role of large open foreign exchange positions in the crisis and the devastation to bank balance sheets during both crises. As mentioned earlier, immediate rollover problems appear to be a better candidate than worries about bank recapitalization costs in triggering worries about devaluation. (Ozatay and Sak (2002) refer to banking sector difficulties as the source of roll-over problems.)³³³

A self-fulfilling scenario would run something as follows: Expectations of devaluation lead to an attack which is devastating to banks (because of their open foreign exchange positions) and exacerbates rollover difficulties, bringing about a monetization of debt, higher inflation, and a depreciated exchange rate, thus validating expectations. (Without expectations of devaluation, the good scenario without attack would prevail.) In the case of Turkey, in the post-devaluation phase, we did in fact observe bank trouble and rollover problems. Thus the story is both internally consistent, and consistent with the post-devaluation outcome. Yet, it is not a story mentioned by any of our interviewees.

Conclusion

I fear that I must not expect a very favorable reception for this work. It speaks of four sets of persons...and I am much afraid that [none] will altogether like what is said of them.

Walter Bagehot (1873) 334

In writing this book and conducting the interviews, we felt that each party involved in the Turkish crisis – the IMF/World Bank, policy makers, and local and foreign market players – had a fair story to tell as to what caused the Turkish crises. The IMF and World Bank emphasized problems in implementation: the IMF on the macro-front,³³⁵ leading to a boom and current account deficit, and the World Bank on the structural side (notably bank restructuring and privatization, agricultural subsidies, electricity pricing, and privatization).³³⁶ International investors considered themselves blameless, playing by the rules of the game and leaving when fundamentals, notably in the banking sector, no longer justified a stay. Local players felt betrayed by policy makers for tying their own hands with currency board rules instead of fighting fires, while the latter thought they were simply following the rules agreed to earlier, but perhaps also felt betrayed, by the politicians, who apparently had not fully realized what they had signed up for.

There is an element of truth in all these but taking each on its own, is a bit like a blind man touching the elephant calling each part a different object. The truth, in our view, is that disinflations are complex processes that require excellent design, flawless implementation and passionate ownership, and lots of good luck. The trouble with the Turkish program was that it had significant problems on all these fronts, which, with the benefit of hindsight made the program look more like an adventure, than a calculated risk. To put it differently, Turkey was indeed quite vulnerable when the November and February crises hit. Thus, even in the

absence of strong triggers or with perfect crisis management, our feeling is that one would likely have experienced a crisis anyway.³³⁷

A. Design, Implementation, and Shocks

It is hard to disagree with the IMF's Michael Deppler that the program *design* was "too brittle for Turkish circumstances".³³⁸ Deppler does not elaborate what he exactly meant by this interesting statement, but it is not too difficult to guess.

First, the program adhered to a very strict credit, i.e. NDA target (or a corridor rather), which left no room for tightening of monetary policy in case of overheating, or for accommodation in case of capital outflows. On the inflow side, in case of overheating, all the policy action was supposed to come from the fiscal side. Given the known tendency for exchange rate-based stabilization programs to lead to major booms it was a risky strategy to leave so much in the hands of politicians.³³⁹ Little or no consideration was given to capital controls or bank lending limits, measures that would also have slowed down the lending boom and flow of hot money.

On the outflow side, with massive amounts of short-term financing, i.e. money that could leave the country any minute, this was a very risky strategy. With currency board rules preventing the central bank from sterilizing capital outflows, where was the liquidity supposed to come from to finance sudden outflows? Adhering to a NDA ceiling during a crisis would be tantamount to tolerating defaults and a payment system collapse. For this reason, Turks had proposed a contingent facility with the IMF for provision of systemic liquidity when need be, but this not had been followed-up or the IMF did not have such an instrument at any rate.³⁴⁰

A comparison with Argentina, in this regard, is inviting. Argentina from early 1999 until default at end-2001 faced recurrent losses of investor confidence and speculative attacks, yet took several years before it was forced to default, and let the peso to float. It was a chronicle of a "death foretold". In contrast, Turkey faced sudden death. While Argentina had an actual currency board, it had ironically more flexibility in the conduct of monetary policy than Turkey, as, among other things, it could change reserve requirements.

Outside of crisis situations, the monetary framework would also create problems in the banking sector. Under the “automatic adjustment mechanism” implied by the non-sterilization rule, interest rates would rise in the face of balance of payments deficits, and this would wreak havoc with the banking sector, given the interest rate risk in the system. This danger in fact materialized and led to the demise of Demirbank.

To conclude, with hindsight (as some IMF staff agrees) it seems the NDA corridor was too much of a straitjacket for Turkey, and a regular ceiling on NDA, and more discretion in monetary policy, would have been preferable. With such a ceiling, Turkish policy makers might have decided to create some room in NDA by sterilizing some of the capital inflows. This room could then have been used during the crisis.

A second issue with the design was that the program did not include measures to address exchange rate and interest rate risk in the banking sector at the outset. This seems to have reflected the conflict of interest faced by both bank supervisors and the IMF (the tradeoff between getting interest rates down and ensuring low risk-taking by banks). For the first 9 months of the program there was no attention to open positions (there was legislation but no implementation). There was no legislation at all on interest rate risk, though the IMF program did include an amendment to capital requirements to reflect market risks and the introduction of internal risk management systems (with implementation from January 2002 onwards), and those overseeing Demirbank let it take unduly large interest rate risks.

A third and perhaps most important issue was that the number of lemons in the banking sector was underestimated and no budgetary provision was made for contingent liabilities in the banking sector in the beginning of the program. The focus of the banking sector measures was to ensure really bad banks were not left to operate. The program included the take over of five banks at the beginning of the program and a rather late introduction of a new bank supervision agency. Statistics on non-performing loans did not give a true picture of non-performing loans, but that is always the case, and the Turkish banking sector was long known to be troubled, as reflected in high interest rates which certain banks offered, and of which the IMF was well aware (December 1999 Letter of Intent). The short-term nature of state bank financing related to their enormous duty losses was also ignored, notwithstanding awareness of the issue (December 1999 Letter of

Intent). It is interesting to observe that it is perhaps the fact that the weakness of the banking sector and state banks' large overnight positions were not news, at least not to the IMF and locals, which led to complacency in their regard. After all, Turkey had withstood several episodes of pressure under these circumstances. It appears that the addition of a currency-board like peg created dynamite, in the context of triggers caused paradoxically by measures to address problems in the banking sector.³⁴¹

On the *implementation* side, it was clear that much left to be desired. Early and repeated warnings from the IMF that measures were necessary to tighten aggregate demand were ignored and there were several delays on the structural reform front.³⁴² With hindsight, it seems clear that implementation risks were underestimated and that the IMF had little control over a very demanding reform process.³⁴³ In fact, the vacuum that emerged in due course was striking. Mr. Fischer reflects:

The Turkish program illustrates how hard it is to interpret the ownership question. At first, in December 1999, the Turks did not describe this as an IMF program, but rather Turkey's. As a result, I thought they were very likely to carry it out. However in June-July 2000, the officials with whom the Fund had been dealing were unable to deliver the agreed fiscal tightening that was then becoming necessary.

To understand the crisis, rather than focusing on day by day developments, one should focus on the need to have moved more rapidly. The outcome was determined by the failure to do the banking and fiscal measures on time.

The key problem was that, without an "owner" or a leader at the ministerial level, Ankara could not defend the program, explain the delays, and take counter measures, or in short, could not own, implement, and defend the "battle plan", forcefully and credibly enough.³⁴⁴ This created a major vacuum, where small problems grew out of proportion and risks could not be well explained, the exchange rate-based stabilization syndrome being a particularly striking one. Communication between investors and Ankara was also lacking, with Ankara apparently having underestimated the anxiety building up about Demirbank since September, about the size of open positions, about the cost of bank recapitalization, and about 'Operation Hurricane'. In general, Ankara did not sufficiently challenge the views of several influential columnists,

investment banks, or the public opinion, as the “vision” and passion seemed to be lacking. In short, the Turkish program had its “technopol” missing all along, i.e. a political figure in charge, with the technical know-how to explain the risks and rewards of the program.³⁴⁵ In this lay a major difference with the successful disinflation programs in Latin America, where technopols led the effort, and the IMF followed. The efforts of the two top bureaucrats as well as those of the IMF, the latter including pretty revolutionary stuff by IMF standards, such as Carlo Cottarelli joining the Turkish authorities in investor road shows and rising as a well-liked and popular figure in the Turkish media, simply did not fill the void.

On the *shock* side, a number of adverse shocks materialized in the balance of payments, most importantly strong oil prices, causing a 2% of GNP additional current account deficit, a strong dollar, and the collapse of telecom stock prices worldwide, with adverse effects for prospects from privatizing telecom. One problem was that, given the lack of ownership of the “battle plan”, all these “temporary” shocks were perceived as permanent blows to the program.

Having discussed design and context of the program, let us now ask two technical questions: Why November, in terms of the timing of the crisis, and whether there was much that crisis management could have solved.

P.—B. Timing

One could ask why a crisis occurred at all in November and then in February, given that in the past (e.g., around the time of the Russian crisis and the 1999 earthquake), Turkey had (surprisingly so in the eyes of some observers including the late Rudi Dornbush) been able to weather large speculative pressure. Alternatively, one could ask why the crisis did not occur earlier, in September, when strong pressures emerged in bond and money markets.

On the first question, what was different in 2000 was, perhaps ironically, the existence of an IMF program with quasi-currency board rules, and a more assertive banking supervision. The size of hot money outflows was on the same order of magnitude as during the Russian crisis (a \$7 billion outflow) and thus not the main distinguishing factor. Similarly, Demirbank was also carrying a large \$5 billion portfolio during the Russian crisis. In the Russian crisis, however, the CBT had been able to

let off exchange market pressure by providing liquidity to the market and increasing the rate of exchange rate depreciation, whereas in the 2000 program, these options were of course no longer available. On the contrary, the NDA corridor emerged as a source of anxiety in the markets, leading to doubts about whether liquidity would be available to local banks such as Demirbank to finance large bond portfolios, especially in the event of outflows.

On the second question, in September Demirbank was willing to buy bonds in a declining market,³⁴⁶ while the risk appetite of local and foreign investors was still strong given that end-of year constraints were not yet binding. By contrast, in November, there were numerous fears surrounding Demirbank, all of which could cause systemic problems. Its solvency, liquidity, and ability to meet margin calls were in doubt; most importantly, the market worried whether Demirbank would put a stop-loss and start selling part of its T-bill portfolio. Local and foreign investors were planning for the end-year closing of the books and in a defensive mood. In the end, the market panicked based on false rumors of T-bill sales on the part of Demirbank and anxieties over “Operation Hurricane” which manifested themselves in the stock market as well as foreign exchange market.

On the February crisis, one might ask why the large banks did not tacitly agree not to attack the peg, knowing as they did that an attack would bring it down. Supposedly, banks learnt from the 1994 crisis how devastating such an attack would be, and the lack of crisis during the Russian crisis has been attributed to this. Our interviewees told us that on the one hand, the “pressure was simply too great,” and on the other hand, communication with Ankara had broken down.³⁴⁷ The coalition’s survival was uncertain and everyone had bought dollars, thus whether there was a devaluation or not was outside of the control of the large banks.³⁴⁸

But let us ask a broader question? Were the crises inevitable in the sense that you had predictably deteriorating fundamentals or were they the result of self-fulfilling expectations or a bad shock? In Krugman’s (1996) model, probing speculative attacks occur when the government is expected to devalue of its own accord some time in the future when fundamentals will have declined sufficiently. Speculative pressure may or may not be sufficient to pressure the government into an earlier devaluation. Before the November crisis, fundamentals were seen as deteriorating in the near-term (current account, open position

closing, Demirbank problems as interest rates continued to rise), but the medium-term was less clear (measures to address the current account, open position closing was temporary). Furthermore, the central bank put up a strong defense, which is incompatible with its' viewing fundamentals as predictably deteriorating. In the February crisis, the macro-economic framework was under more stress. With confidence already shaken and banks weakened by the November crisis so that their ability to rollover government debt was in doubt, there were questions about the government's ability to smoothly rollover debt as well as questions about how the transition to a band in July would be managed. Yet, inflation was gradually declining and the TL was not clearly overvalued. After it became clear that the political fallout from the fight between the PM and President would be contained, markets briefly normalized after the initial attack, with a relatively successful T-bill auction.

Should one then blame self-fulfilling expectations for the crises? Rumors about Demirbank selling T-bills and about further banking sector investigations in November and the fight between the PM and President in February certainly could indeed have acted as the mechanism coordinating expectations on a bad equilibrium. These triggers can also be considered as bad news however, suggesting a different explanation. Such bad news, given that fundamentals were already in a precarious state, could cause a disproportionate shift in the number of agents attacking the currency. In this interpretation, the crises were not the result of self-fulfilling expectations but of a bad shock when fundamentals were already very precarious.

Q.—C. Crisis Management

In terms of crisis management, a number of suggestions have been made for "improved" crisis management, from providing more liquidity during both the November and February crises to providing less liquidity during the November crisis, to taking over Demirbank early on or insulating it from markets in another way.

A key piece of information necessary to address the question of whether liquidity was sufficient or excessive in November is the interest sensitivity of capital flows during the crises. It seems flows were rather inelastic given foreign investors' desire to safeguard their bonuses and thus avoid risks on their books at end-year. Looser liquidity probably would have helped avoid adverse

dynamics such as stop loss sales, margin calls and unwinding of structures during the crisis, all of which were sizeable, but on the other hand, would have facilitated banks short on liquidity exiting and even shorting of the TL, with the net effect unclear.³⁴⁹

A separate issue is that of the cost of high interest rates imposed on banks short in liquidity and the shift in income distribution caused by the policy. The world record interest rates in the November crisis had large such effects, including on state banks, which came back to haunt later in the form of doubts as to whether the banking system could rollover government debt. The costs of the interest rate defense were also high in February, as they involved a payment system collapse; the lesson seems to be that one should not bother doing a desperate interest rate defense. In this regard, the closing of markets when devaluation and float have almost been decided but could not be executed, an alternative suggested by Mr. Fischer, might be a better alternative.

R.—D. A Recap: Murder on the Orient Express?

As we worked on this monograph, conducted the interviews, and read through the material including other research, we could not help it but keep drawing a parallel, admittedly an unpleasant one, between the story of the Turkish crises and that in the famous Agatha Christie murder-mystery novel, the Murder on the Orient Express. In this well-known story, Hercule Poirot, the Belgian detective on board of the train, is first baffled by the evidence pointing not to one, but multiple assassins. Yet, he resolves the mystery at the end, as he discovers that the “Armstrong kidnapper” had been brought to justice by family and friends of his victim, each in turn stabbing him.

As unpleasant a conclusion as it may be, the Turkish crises of 2000-01 are also a tale of a not so innocent victim and multiple murderers. Stocktaking of Turkish problems at the onset of 2000 reveals a history of chronic fiscal profligacy, massive inefficiencies in both public and private sectors, and severe problems waiting to be addressed in the banking sector, reflecting years of “live and let live.” The “will I be next?” syndrome, which gripped the banking community during “rehabilitation”, just before the November crisis, best exemplifies the scale of the problem. A 180-degree change in orientation of policies and a reckless determination were therefore needed – perhaps even that would not be sufficient – to

emerge unscathed from these “initial conditions”, or in order to be able to avoid the fate of the “Armstrong killer”, in short.

As for the “murderers”, the list is almost as long as in the original novel. The IMF version of the crises is that the culprit was weak policy implementation. Indeed, the record on implementation turned out to be just about the Turkish average, rather than the 180-degree change that was required. Yet, many in the banking community including the rating agencies and some of the investors that left on that infamous black Wednesday in November have pointed to loss of confidence in the banking sector, triggered by various operations – “Operation Hurricane” and the likes – as well as to concerns over open foreign exchange positions.

Furthermore, exchange rate-based stabilization and a preoccupation with debt dynamics encouraged hot money inflows, yet left the central bank without recourse to sterilization in the event of capital outflows. On that front, a short-term *inflow* tax could well have been considered, especially in light of the paradigm shift observed in recent years concerning exchange rate regimes and capital account openness in emerging markets. In some sense, Turkey was the last victim of an old, sliding paradigm of soft pegs, exit strategies, and unfettered capital flows.

In hindsight, the combination of a currency-board like peg with hot money inflows; a weak banking sector; and an aggressive crackdown operation on banks and the rumors that went with it, seemed like the kind of ride that would hardly end well, especially when there was no one, with the political power and a solid understanding of the “battle plan”, sitting at the driver seat.

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ANNEX I - Selected Economic Indicators: 1999-2002

(In percent of GNP, unless otherwise indicated)

| | 1999 | 2000 | 2001 | 2002 |
|--|---------|---------|-----------|-----------|
| Production and Prices | | | | |
| GNP (% real growth) | -6.1 | 6.3 | -9.5 | 7.8 |
| Domestic demand (change, in percent of GNP) | -3.7 | 10.2 | -19.8 | 8.8 |
| Foreign demand (change, in percent of GNP) | -2.4 | -3.9 | 10.3 | -1.1 |
| GDP (% real growth) | -4.7 | 7.4 | -7.5 | 7.8 |
| WPI (12 month, end of period) | 62.9 | 32.7 | 88.6 | 30.8 |
| CPI (12 month, end of period) | 68.8 | 39.0 | 68.5 | 29.7 |
| Average T-bill rate (secondary market) | | | | |
| Nominal | 95.3 | 39.8 | 91.4 | 64.9 |
| Real (deflated by next year's inflation) | 26.1 | -9.5 | 47.5 | 31.9 |
| ISE-100 (1996=100; average, US\$) | 157.2 | 279.4 | 105.2 | 88.0 |
| Exchange rate (TL/US\$; average) | 417,811 | 624,958 | 1,225,274 | 1,507,780 |
| Real exchange rate (Index; 1995 = 100) | 127.3 | 147.6 | 116.3 | 125.3 |
| GNP (in trillions of TL) | 78,283 | 125,596 | 176,484 | 273,463 |
| GNP (in US\$ billions) | 187.4 | 201.0 | 144.0 | 181.4 |
| Consolidated Public Sector (IMF) | | | | |
| Primary balance | -2.0 | 2.3 | 5.9 | 4.0 |
| Central government | 1.5 | 4.2 | 4.6 | 2.4 |
| Rest of the public sector | -3.5 | -1.9 | 0.5 | 1.6 |
| PSBR (including CBT profits) | 24.1 | 19.6 | 17.6 | 12.3 |
| Gross Debt of the Central Government | | | | |
| Total | 53.2 | 50.2 | 100.9 | 88.9 |
| External | 23.9 | 21.2 | 31.7 | 34.1 |
| (US\$ billions) | 34.6 | 39.5 | 38.8 | 56.8 |
| Domestic | 29.3 | 29.0 | 69.2 | 54.8 |
| (TL quadrillion) | 22.9 | 36.4 | 122.2 | 149.9 |
| of which: non-cash (TL quadrillion) | 2.7 | 7.0 | 64.3 | 60.6 |
| Net Debt of the Public Sector (IMF) | | | | |
| Net External | 61.0 | 57.7 | 94.0 | 80.0 |
| Net External | 20.1 | 18.5 | 37.7 | 32.1 |
| Net Internal | 40.9 | 39.2 | 56.3 | 47.8 |
| External Accounts | | | | |
| Current account balance | -0.7 | -4.9 | 2.4 | -1.0 |
| (US\$ billion) | -1.4 | -9.8 | 3.4 | -1.8 |
| Trade balance | -7.2 | -12.0 | -3.7 | -5.1 |
| Capital account balance | 3.2 | 5.1 | -11.6 | 1.2 |
| Total external debt | 71.2 | 63.6 | 93.1 | 78.6 |
| (US\$ billions) | 103.0 | 118.7 | 113.8 | 131.2 |
| of which: Private Sector (US\$ billions) | 49.6 | 55.8 | 43.3 | 43.6 |
| of which: Short-term (US\$ billions) | 22.2 | 26.6 | 15.7 | 14.7 |
| Central bank reserves (gross) | | | | |
| (as percent of reserve money) | 323.5 | 292.0 | 346.6 | 419.9 |
| Monetary Aggregates (12-month growth) | | | | |
| Reserve money | 83.3 | 51.3 | 34.1 | 33.8 |
| M2YR (M2 inc. FX-deposits and repos) | 98.7 | 40.7 | 75.0 | 24.1 |
| Real M2YR | 17.7 | 1.2 | 3.8 | -4.4 |
| M2YR (as percent of GNP) | 57.0 | 50.0 | 62.3 | 46.7 |
| Private Credit | 44.1 | 72.1 | 23.8 | 9.2 |
| Deposit | 101.2 | 38.4 | 95.1 | 26.3 |
| Currency Substitution (FX-deposits/M2R) | 68.6 | 65.8 | 117.2 | 108.3 |

Source: EuroSource Turkey Database; IMF Staff Reports, various issues.

ANNEX II – Market Data During the Crises

Daily Developments in Financial Indicators in the November and February Crises

| Date | Interest rates | | | | | CBT O/N (% simple) |
|-------|--------------------------------|-----------------|---------------------------------------|---|------------------------------------|-----------------------|
| | Benchmark bond (% compound) | (Volume TL tr.) | ISE overnight rate (% simple, avg) | ISE overnight rate (% compound, avg) | CBT auction rate (%simple, avg) | |
| 11/13 | 37 | 338 | 38 | | 46 | 38 |
| 11/14 | 38 | 250 | 57 | | 76 | 49 |
| 11/15 | 40 | 356 | 92 | | 150 | 81 |
| 11/16 | 41 | 457 | 79 | | 121 | 86 |
| 11/17 | 40 | 513 | 41 | | 51 | 41 |
| 11/20 | 42 | 302 | 48 | | 62 | 44 |
| 11/21 | 44 | 173 | 80 | | 123 | 64 |
| 11/22 | 49 | 492 | 153 | | 358 | 175 |
| 11/23 | 46 | 330 | 93 | | 152 | 92 |
| 11/24 | 48 | 280 | 113 | | 209 | 88 |
| 11/27 | 47 | 290 | 91 | | 148 | 56 |
| 11/28 | 53 | 100 | 199 | | 628 | 108 |
| 11/29 | 55 | 103 | 152 | | 354 | 117 |
| 11/30 | 61 | 56 | 154 | | 365 | 112 |
| 12/1 | 67 | 60 | 725 | | 114637 | 254 |
| 12/4 | 95 | 13 | 1258 | 23535150 | 556 | 600 |
| 12/5 | 105 | 34 | 268 | 1348 | ... | 600 |
| 12/6 | 69 | 113 | 213 | 738 | 148 | 150 |
| 02/12 | 67 | 9 | 57 | 77 | 58 | 55 |
| 02/13 | 66 | 17 | 56 | 75 | 61 | 47 |
| 02/14 | 62 | 46 | 46 | 59 | 56 | 43 |
| 02/15 | 61 | 16 | 40 | 49 | 49 | 45 |
| 02/16 | 64 | 21 | 44 | 55 | 47 | 45 |
| 02/19 | 68 | 53 | 317 | 2250 | 47 | 50 |
| 02/20 | 110 | 12 | 1112 | 5728536 | ... | 2300 |
| 02/21 | 131 | 16 | 4474 | 214125669703023000000 | ... | 4000 |
| 02/22 | 206 | 0.4 | 2234 | 262558515410 | ... | 900 |

Daily Developments in Financial Indicators in the November and February Crises (continued)

| Date | ISE nominal traded volume | | | Demirbank cumulative net | | OMO by the CBT |
|-------|---------------------------|------------------|------------------------------|---------------------------|----------------------------------|----------------|
| | O/N (TL tr) | bonds (TL tr) | Demir's August 01 (TL tr) | Demir's Feb 02 (TL tr) | borrowing from CBT (TL tr) 1/ | |
| 11/13 | 2600 | 900 | 54 | 15 | -70.6 | 2283 |
| 11/14 | 2700 | 800 | 41 | 39 | 119 | 2480 |
| 11/15 | 2600 | 1100 | 57 | 109 | 119 | 2219 |
| 11/16 | 2800 | 1200 | 114 | 91 | 119 | 2182 |
| 11/17 | 2700 | 1100 | 39 | 59 | 519 | 2656 |
| 11/20 | 3000 | 1000 | 81 | 48 | 474 | 2402 |
| 11/21 | 3100 | 800 | 49 | 15 | 267 | 2433 |
| 11/22 | 2500 | 1500 | 10 | 54 | 1575 | 3939 |
| 11/23 | 2400 | 1100 | 49 | 55 | 912 | 3358 |
| 11/24 | 2100 | 900 | 47 | 32 | 1337 | 4266 |
| 11/27 | 2100 | 900 | 47 | 32 | 1226 | 4452 |
| 11/28 | 2200 | 500 | 31 | 81 | 876 | 4718 |
| 11/29 | 1800 | 600 | 37 | 68 | 1668 | 5728 |
| 11/30 | 1700 | 700 | 25 | 36 | 1830 | 6310 |
| 12/1 | 1500 | 300 | 21 | 29 | 2130 | 6021 |
| 12/4 | 1400 | 100 | 27 | 29 | 1386 | 5520 |
| 12/5 | 1600 | 200 | 13 | 6 | 1386 | 5166 |
| 12/6 | 1900 | 300 | 87 | 8 | ... | 4849 |

ANNEX II – Market Data During the Crises (concluded)

Daily Developments in Financial Indicators in the November and February Crises (concluded)

| Date | Net CBT | Gross Int'l. | NDA | Excess Bank | Base | Stock Market | % Change |
|-------|-------------------------------|----------------------------|-------------------------|----------------------|------------------|---------------|-------------|
| | purchases of FX (US\$ mln) | Reserves (*) (US\$ mln) | of CBT (**) (TL tr.) | Reserves (TL tr.) | money (TL tr) | Ind. Level | |
| 11/13 | | | -1156 | 664 | 5044 | 13269 | -3.9 |
| 11/14 | | | -1033 | 465 | 5087 | 13299 | 0.9 |
| 11/15 | | | -1020 | 565 | 5264 | 13527 | 2.6 |
| 11/16 | | | -1063 | 859 | 5461 | 13183 | 0.0 |
| 11/17 | -107 | | -1051 | 756 | 5407 | 12832 | -2.7 |
| 11/20 | -231 | 27209 | -1216 | 477 | 5073 | 11917 | -7.1 |
| 11/21 | -221 | 26961 | -1160 | 502 | 4967 | 11314 | -5.1 |
| 11/22 | -1558 | 25410 | 474 | 1121 | 5546 | 11554 | 2.1 |
| 11/23 | -245 | 25486 | -518 | 198 | 4592 | 11187 | -3.2 |
| 11/24 | -382 | 24776 | 346 | 538 | 4977 | 10809 | -3.4 |
| 11/27 | -650 | 24515 | 323 | 364 | 4735 | 10597 | -2.0 |
| 11/28 | -1253 | 23232 | 1080 | 316 | 4569 | 9642 | -9.0 |
| 11/29 | -1026 | 22089 | 2007 | 582 | 4811 | 9513 | -1.3 |
| 11/30 | -748 | 21604 | 2018 | 151 | 4520 | 8748 | -8.0 |
| 12/1 | 107 | 21656 | 1945 | 134 | 4517 | 7978 | -8.8 |
| 12/4 | -669 | 20946 | 2686 | 443 | 4790 | 7329 | -8.1 |
| 12/5 | -310 | 20649 | 2563 | 215 | 4518 | 8755 | 19.5 |
| 12/6 | 505 | 21131 | 2372 | 451 | 4731 | 10387 | 18.6 |
| 02/12 | -402 | 25864 | 485 | 590 | 4565 | 9075 | -4.9 |
| 02/13 | -51 | 27536 | -545 | 902 | 4840 | 9385 | 3.4 |
| 02/14 | 73 | 28000 | -748 | 696 | 4935 | 9972 | 6.3 |
| 02/15 | 38 | 27973 | -790 | 566 | 4927 | 9764 | -2.1 |
| 02/16 | -59 | 27863 | -573 | 714 | 5102 | 10170 | 4.2 |
| 02/19 | -7609 | 27957 | -658 | 797 | 5082 | 8683 | -14.6 |
| 02/20 | 4048 | 26464 | -317 | 249 | 4387 | 8769 | 1.0 |
| 02/21 | -3520 | 23025 | 1865 | 252 | 4286 | 7181 | -18.1 |
| 02/22 | 0 | 23097 | 3070 | 1402 | 5443 | 7890 | 9.9 |

(*) at fixed cross-exchange rates.

(**) excluding revaluation.

ANNEX III - Financial Structures Used in 2000

There were three types of structures in intensive use just ahead of the November crisis: Eurobond-backed repos; lira security-backed repos; and structures mimicking total return swaps.

Eurobond Repos

Structures on eurobonds essentially were repos with large margin requirements (“haircuts”). The margin requirement was 20-25% before November 15, and was raised to 35-50% subsequently, depending on the London counterparty’s policy. Margin requirement could be raised and lines could be cut with 1 or 2 days notice (if notified before 11, funds were due the next day; if notified after 11, funds were due in two days). Funds due as part of margin calls were paid the same or next day. Ahead of the November crisis, eurobond structures were probably on the order of a few billion dollars.

Adverse dynamics began with the eurobond price decline in September, which triggered margin calls which not all institutions could meet, thereby leading to destabilizing margin sales, and continued throughout the November crisis. In response, after the November crisis, Turkish banks requested a more stable instrument, CBOs (collateralized bond obligation) collateralized by eurobonds, with a junior tranche held by the issuer and a senior tranche by a foreign investor. In these structures a 20% price decline was required in order for margin calls to be triggered, which meant they would be more stable.³⁵⁰

Eurobond spreads (on the 30-year eurobond) increased by 6% (from 646 to 684bp) on November 21. They then increased sharply over the next two weeks (they increased by a total of 41% by December 4). The market lost liquidity and \$10 million could move the market two or three points. The increase in spreads triggered margin calls on eurobond repos. Turkish banks had to obtain additional liquidity to pay these margin calls (the preferred option) or sell the bonds. According to a eurobond trader, Mr. Serkan Turk, London would sell the collateral short at this time. According to the same trader: “If there was \$1 billion in the market before the November crisis, increasing haircuts and margin calls led to an outflow of \$250 million. Plus lines were cut, \$350 million by two foreign banks. Together, this meant an outflow of \$600-700 million, paid in cash, not by selling eurobonds.”

TL Repos

Foreign investors, in addition to directly entering the TL repo market, also could invest in structures mimicking such repos. In such structures, the T-bill collateral was held by the foreign counterpart rather than the Turkish bank (as in customer repos) or the ISE. The margin requirement was typically much larger than on the ISE. As was the case with eurobond structures, these structures were very unstable and subject to manipulation by London banks through sales of the collateral. The size of this market was perhaps as much as \$5 billion.

According to EVP in charge of the Treasury of a medium-sized Turkish bank:

During the crisis, funded structures with covenants accentuated the crisis. Of the \$5 billion in structures funded by foreign institutions, most were with T-bill collateral with 20-25% or 30-35% haircuts. Institutions with prop desks in Turkey loved this structure. It allowed them to short TL assets. Accounts offices would come to Turkish banks offering funding against TL assets. Such assets could be lent to prop desks who could short them. When things started to deteriorate, prop desks would dump the T-bills, causing prices to fall, and margin calls to start. Volatility was a result of the design.

...

Liquidations as foreign institutions dumped collateral were affecting the value of collateral in three different places, at the CBT, ISE and with foreign institutions (structures). Liquidations were also affecting the customer repo base, but controls are lousy, so that one can do repos with less than legal collateral.

Unfunded Structures

Unlike the previous two structures, a third structure involved no funding to Turkish banks. The sole purpose of the structures was to hide open positions. In these structures, Turkish banks obtained a return corresponding to that on T-bills by placing dollar deposits with a London bank. (These dollar assets – recorded as “due from banks”, a huge category in bank balance sheets – appeared to offset dollar liabilities on account of foreign exchange

deposits with Turkish banks). The placing of a dollar deposit reduced the banks' open foreign exchange position on paper, though the banks still carried TL risk through the structure.

The structure described further below by an example includes a call held by the Turkish bank as a mechanism to settle the transaction at expiry and a put held by the London counterparty as a built-in safety mechanism. In essence, the Turkish bank bought an in-the-money call on a T-bill, thereby securing the return on a T-bill. Because the call was in the money, and because the London investment bank could put the T-bill, the risks remained with the Turkish bank. The main risk to the London bank was reputational risk should the deal be uncovered.

Not involving funding, these structures were more stable and tended not to be unwound during the crisis. The magnitude of these structures was reportedly very large, over \$10 billion. This was a lucrative market, with fees ranging from 10 bps to 30 bps. On a \$200 million loan, revenues would be \$200,000-600,000.

Example: A TRL-USD Structure with Put and Call Options

1. Istanbul counterparty places \$200 million with London investment bank until 11/1/2001 yielding Libor for the period.
2. London places \$200 million worth of TL converted at the then spot exchange rate with Istanbul counterparty's offshore branch until 11/1/2001 yielding 33% for the period.
3. Istanbul purchases a call option. The underlying asset of the call option is a TL 170 trillion notional of Turkish government treasury bills maturing on 18 July 2001.
4. Istanbul sells a put option. The underlying asset of the put option is a TL 170 trillion notional of Turkish T-bills maturing on 22 August 2001.
5. Strike for both options is \$210 million. For current market prices, the call option is deep in-the-money, while the put is out-of-the money.
6. At any level of the \$/TL exchange rate at expiry of the options, the proposed combination will provide Istanbul with a return equal to the return on the T-bill.
7. The call option exercise style is European, and the put exercise style is American. Hence, London will have the right to exercise the put option at any time of the period, forcing for a termination.

Cash flows that correspond to the structure would be as follows:

Inception:

- USD deposit : USD principle received from Istanbul offshore
- Spot F/X : USD principle converted to TL
- TL deposit : TL principle paid to Istanbul offshore

Maturity:

- TL deposit : TL principle plus interest received from Istanbul offshore
- Spot F/X : TL principle amounting to USD principle
- USD deposit : USD principle plus Libor paid to Istanbul offshore
- Options : If TL redemption amount is higher than USD redemption amount, London pays the difference to Istanbul offshore through the call option, otherwise Istanbul offshore pays the difference to London through the put option.

A Glossary of Key Economic and Financial Terms

Accommodative monetary policy

Using monetary policy passively in order to prevent recession, or financial market instability.

American option

An option that may be exercised at any valid business date through out the life of the option.

Balance sheet

The statement of a company's assets, liabilities and net worth. Assets and liabilities, usual when valuation is contingent on certain outcomes, such as options and forwards, are recorded "off balance sheet." This was the case for repo transactions (repurchase agreements) until a recent change in law.

Balassa-Samuelson effect

The tendency for more developed countries to have higher prices than developing countries, which results from high productivity in the tradeable (manufacturing) sector translating into high wages in the non-tradeable sector and thus higher prices.

Base money

Synonym for monetary base, high-powered money, and reserve money; the liability of the monetary authority viz. banks and the public at large, comprising currency in circulation and bank reserves. It can be created through two sources, foreign exchange operations or credit operations. See below net domestic and foreign assets.

Basis point (bps)

1/100th of a percentage point. 100 basis points equals 1 per cent.

Basket exchange rate

A combination of currencies of principal trading partners with weights roughly in line with the value of trade. In Turkey, a weighted average of 1\$ and 0.77 euros.

Benchmark (IMF)

In the context of IMF programs, a point of reference against which progress may be monitored. Benchmarks may be either quantitative or structural in content, and may be set on a quarterly or semi-annual basis. See “IMF At a Glance” at www.imf.org

Book value

Net worth of a company.

Call option

An option that gives the holder the right to buy the underlying instrument at a specified price (the strike price) during a fixed period.

Capital account of the balance of payments

Captures a country’s asset transactions with the rest of the world, and hence makes up the financing side of transactions in goods and services. Depending on maturity, they are classified as short- or long-term, or type, as debt-generating and non-debt generating. Direct investment and some portfolio flows, for instance, do not generate debt, while bank borrowing does.

Capital controls

Restrictions that governments place on inflows and outflows of capital, on domestic or foreign investors.

Carry trade

In the Turkish case, a trade that comprises the investing of money borrowed from abroad at very low rates, in short-term money market instruments

Collateral

Security or property pledged to a lender to secure a loan.

Conditionality (IMF)

Economic polices or structural reforms that borrowing members agree to follow as a condition for the use of IMF resources (loans). See “IMF At a Glance” at www.imf.org

Contingency Credit Line

Aimed at preventing the spread of a financial crisis enabling countries that are basically sound and well managed to put in place precautionary financing in the event a crisis should occur. Short-term financing would be provided under a Stand-By or Extended Arrangement to help IMF members overcome the balance of payments financing needs arising from a sudden and

disruptive loss of market confidence due to contagion, and largely generated by circumstances beyond the member's control.

Contingent liability

A type of liability that depends on uncertain events that may or may not materialize.

Counter-party risk

The risk that the other party in an agreement will default.

Covenant

A clause in a contract.

Crawling peg

An exchange rate regime whereby the exchange rate is gradually devalued over time

Currency board

An extreme form of pegged exchange rate in which domestic currency is backed with a specified amount of foreign currency; which puts severe restrictions on the lender of last resort function of the central bank; and which rules out monetary financing of government deficits.

Current account of the balance of payments

Measures international trade in goods and services (including remittances and payments of interest and dividends on capital).

Duty loss

State enterprise or state bank losses incurred as the result of a government mandate

Early warning system

A system designed to predict the occurrence of currency crises with a one or two year lead, based on such variables as the real exchange rate, current account balance, export growth, and government deficit.

E-commerce

Electronic commerce or commerce conducted over the internet

Eurobonds

A bond that is: (1) underwritten by an international syndicate, (2) issued simultaneously to investors in a number of countries, and (3) issued outside the jurisdiction of any single country.

European option

An option that can be exercised solely at expiration of the options contract.

Exchange-rate based stabilization program

Disinflation program where the exchange rate path is pre-announced and the exchange rate is used as the “nominal anchor”, to help to coordinate expectations around a certain inflation target. (See below for nominal anchor.)

Exposure

The total amount of money loaned to a borrower or country. Banks set rules to prevent overexposure to any single borrower. In trading operations, it is the potential for running a profit or loss from fluctuations in market prices.

Extrabudgetary funds

Various funds with out of the budget activities. In Turkey, encompass activities of budgetary and non-budgetary funds.

Foreign exchange intervention

Action by a central bank to affect the value of its currency by buying and selling foreign exchange

Foreign exchange risk

The risk of losses resulting from a long or short position in a foreign currency as the result of an adverse movement in exchange rates.

Forward contracts

A contract that specifies the price and quantity of an asset to be delivered on in the future. Forward contracts are not standardized and are not traded on organized exchanges

Forward exchange transaction

Foreign currency purchase or sale at the current exchange rate with payment or delivery at a future date.

Futures

Exchange-traded contracts. They are firm agreements to deliver (or take delivery of) a standardized amount of something on a certain date at a predetermined price.

Haircut

A safety margin requirement

Hedge Fund

A private investment fund that trades and invests in various generally assets such as securities, commodities, currency, and derivatives on behalf of its clients, typically wealthy individuals.

Hedge funds tend to have high-risk appetite and are subject to fewer regulations than other investment institutions

Hedging

A strategy used to offset risks, whereby one position protects another; taking a position in a futures market opposite to a position held in the cash market to minimize the risk of financial loss from an adverse price change.

Illiquid assets

Assets that cannot be converted into cash quickly without loss in value.

International Monetary Fund

The IMF is an international organization of 184 member countries, established to promote international monetary cooperation, exchange stability, and orderly exchange arrangements; to foster economic growth and high levels of employment; and to provide temporary financial assistance to countries to help ease balance of payments adjustment. See “IMF At a Glance” at www.imf.org

Incomes policy

Use of guidelines or controls on wages and prices, in line with target inflation

Inflation tax

Real resources obtained by the government as a result of the increase in demand for money caused by increase prices.

Interest rate risk

The potential for losses arising from changes in interest rates. Interest rates have the greatest impact on long-term bonds, but also impact stock markets and short-term bonds.

In-the-Money

In general, trading at a price higher than it was purchased. A call option is in-the-money if the price of the underlying instrument is higher than the exercise/strike price. A put option is in-the-money if the price of the underlying instrument is below the exercise/strike price.

Lender of last resort

Usually refers to the central bank function of extending credit to depository institutions or to other entities when other sources of credit are not easily available and failure to obtain credit would have a systemic impact. Central banks can act as the lender of last resort because of their ability to print money.

Letter of Intent

Letter from a government to the IMF outlining its economic policies and reform efforts to be implemented in relation to receiving an IMF loan. It includes a matrix of conditions that must be implemented in order to access the IMF's resources

Libor

The London Interbank Offered Rate. The rate of interest at which banks borrow funds from other banks, in marketable size, in the London interbank market.

Lines (Credit)

An arrangement by which a bank agrees to lend to the line holder during some specified period any amount up to the full amount of the line.

Liquid Market

A market in which selling and buying can be accomplished with minimal effect on price

Liquidity

The inherent quality of an asset to be easily converted into cash without any loss in value.

Liquidity risk

The risk arising from the difficulty in selling an asset.

Long position

An excess of assets over liabilities in an instrument, such as foreign exchange.

Margin

The amount an investor needs to deposit with his broker as collateral for purchases made on credit.

Margin call

A demand for additional funds to be deposited in a margin account to meet margin requirements because of adverse future price movements.

Mark-to-Market

Daily adjustment of the price of an instrument/account to reflect market prices of a portfolio.

Market Maker

A professional securities dealer or person with trading privileges on an exchange who has an obligation to give price quotations and to buy when there is an excess of sell orders and to sell when there is an excess of buy orders.

Market risk

Risk that is common to the whole economy that cannot be diversified away, unlike interest rate risk.

Money-based stabilization program

Inflation stabilization program where money supply becomes the “nominal anchor” (see below for nominal anchor)

Market liquidity

This reflects a central bank estimate of bank liquidity, which are a function of (1) excess bank reserves; (2) the previous days' foreign exchange operations of the central bank (foreign exchange purchases by the central bank drain excess liquidity); (3) Treasury operations (e.g., an increase in bank liquidity when the Treasury pays wages, a decrease when it collects taxes); and (4) open market operation stock of the central bank coming due that day.

Money market

The market for short-term debt instruments

Mortgage

A legal document through which a borrower pledges a property to the lender as security against his debt, often used with real estate.

Net domestic assets (NDA)

Part of the assets of the central bank. Consists mainly of holdings of government bonds and credit to banks by the central bank (e.g. when the central bank purchases government bonds in an open market operation, this leads to an increase in the money supply). NDA and NFA are common jargon among central bankers.

Net foreign assets (NFA)

Central bank foreign exchange reserves measured in local currency, a component of the monetary base (e.g. when the central bank purchases foreign exchange reserves from the public by providing local currency in return, it increases the amount of local currency in circulation and thus the monetary base).

Net worth

Assets minus liabilities of an individual or company. It is also called owner's equity or shareholders' equity.

Nominal anchor

A nominal quantity or a price (most typically the exchange rate or money supply, but more recently inflation itself) that helps to coordinate expectations around a certain inflation target.

Open foreign exchange position

Short foreign exchange position, or uncovered foreign exchange position. A situation whereby total F/X liabilities exceed that of assets

Open market operations

Purchases and sales of government securities in the open market to influence the money supply and interest rates. Purchases inject reserves into the depository system and foster expansion in money and credit; sales have the opposite effect.

Operational balance

Primary balance plus the real component of interest rates. Used in high inflation economies with high real rates as a gauge for fiscal stance

Options

Options are derivatives securities that give the holder the right to buy (call) or sell (put) a specified amount of the underlying security at a specified time ("expiration").

Origination fee

A non-refundable fee charged by a lender to cover certain processing and administrative expenses in connection with making a loan. This is usually charged as a percentage of the applied loan amount.

Over-the-counter market (OTC)

A market conducted directly between dealers and principals via a telephone and computer network rather than a regulated exchange trading floor.

Out-of-the-Money

In general, trading at a price lower than it was purchased. A put option is out-of-the-money if the exercise/strike price is below the price of the underlying instrument. A call option is out-of-the-money if the exercise/strike price is higher than the price of the underlying instrument.

Peg

An exchange rate system where a country's exchange rate is "pegged" (i.e. fixed) in relation to another currency. The official rate may be changed from time to time.

Performance Criteria

Quantitative (such as monetary and budgetary targets) as well as qualitative criteria that must be met, typically on a quarterly or

semi-annual basis, for the member to qualify for purchases (i.e. IMF disbursements) under the phasing schedule for Stand-By Arrangements, Extended Fund Facility Arrangements, and Poverty Reduction and Growth Facility Arrangements. Some performance criteria are those necessary to implement specific provisions of the Articles of Agreement. In event of non-implementation, the IMF Board needs to give a “waiver” for non-compliance. See “IMF at a Glance” at www.imf.org

Perils of sterilization

Refers to the costs of sterilizing capital inflows. As the central bank sells bonds to the public to sterilize (offset) the increase in money supply, which results from capital inflows, net debt service of the public sector increases. This reflects the fact that interest on the bonds sold to the public is higher than interest earned on foreign exchange reserves.

Primary surplus

Non-interest surplus equal to revenues minus non-interest expenditures. In countries with high interest payments, used to gauge the true stance of fiscal efforts.

Private equity

Equity securities of companies that have not "gone public" (are not listed on a public exchange).

Profit Taking

The unwinding of a position to realize profits.

Proprietary desk

Trading for own account of a bank rather on clients' behalf.

Prudential regulations

Regulations to ensure the health of a banking system

Purchases and Repurchases

When a member draws on the IMF's general resources, it does so by purchasing SDRs or other members' currencies in exchange for its own (domestic) currency. The IMF's general resources are, by nature, revolving: purchases (or drawings) have to be reversed by repurchases (or repayments) in installments within the period specified for a particular policy or facility. See “IMF at a Glance” at www.imf.org

Put Option

A put option confers the right but not the obligation to sell

currencies, instruments or futures at the option exercise price within a predetermined time period.

Quotation

A bid or ask price on a security.

Rally

A brisk rise in the price of a share or bond.

Real appreciation

Nominal change in the exchange rate running below inflation, leading to a loss of competitiveness.

Real effective exchange rate

Trade-weighted real exchange rate

Real exchange rate

The nominal exchange rate multiplied by the price level domestically and divided by the price level abroad. It can be measured in various ways, using several price indexes.

Real exchange rate rule

Exchange rate regime in which the exchange rate is adjusted in line with inflation in order to maintain the real exchange rate roughly constant.

Related party lending

Also termed connected lending or lending to companies (partially) owned by the bank.

Repo (Repurchase agreement)

Short-term collateralized financing. It is an agreement of one party to sell a security at a specific price to a second party and a simultaneous agreement by the first party to buy the security back at a specified later date at the same price, with interest. The first party is said to be "repo-ing" while the second party is "reverse repo-ing". An arrangement used by central banks to inject reserves into the banking system on a temporary basis.

Repo line

An arrangement by which a bank or central bank engages in repurchase agreements with the line holder for an amount up to the full amount of the line.

Reserves

Funds set aside by commercial banks to meet reserve requirements and withdrawals by depositors.

Reserve requirement

Reserves that must be held against bank deposits.

Reviews of the IMF program

Quarterly reviews to assess adherence to performance criteria and benchmarks of the program. Successful conclusion of a review, as determined by the IMF board, is followed by a disbursement of IMF funds.

Risk premium

Return or extra reward for assuming risks. In international finance, the difference between local and foreign interest rates, after accounting for exchange rate changes.

Secondary market

A market of buyers and sellers who trade in securities that have already been issued in the primary market.

Securitization of debt

Issuance of securities in recognition of debt formerly incurred

Seignorage

Real resources obtained by the government as the result of an increase in the real monetary base

Settlement date

The date on which the transactions done during a particular trading period, are settled by the delivery/receipt of stocks, bonds, or foreign exchange and a corresponding receipt/delivery of cash.

Short position

An excess of liabilities over assets in an instrument, such as foreign exchange.

Short sale

The sale of a security or foreign exchange without being in possession of it, usually in expectation of a decline in the price, with the plan of buying it at a lower price at a later date to square off the transaction.

Spread

Difference in yield between a risky instrument and a risk-free government bond of same maturity such as the U.S. treasuries.

Stand-by arrangement

A decision of the IMF by which a member is assured that it will be able to make purchases (drawings) up to a specified amount and

during a specified period of time, usually one to two years, provided that the member observes the terms set out in the supporting arrangement. See “IMF at a Glance” at www.imf.org

Sterilization

Central Bank activity in the domestic money market to reduce the impact on money supply of its intervention activities in the F/X market.

Stop loss

A decision to sell a security when its price reaches a particular level or falls below a particular limit, so as to cut the losses incurred.

Strike price

Or exercise price. The price at which an option may be exercised.

Structural benchmark

Benchmark in the structural reform area in an IMF program. See “IMF at a Glance” at www.imf.org

Structured products

An over-the-counter (OTC) financial instrument created specifically to meet the needs of one or a small number of investors. A bond or note that has embedded in it contractual terms that result in an economic payoff to the investor.

Supplemental Reserve Facility

A facility (window) established in December 1997 to provide financial assistance to members experiencing exceptional balance of payments difficulties due to short-term financing needs resulting from a sudden and disruptive loss of market confidence reflected in pressure on the capital account and the members’ reserves.

Suspended trading

The temporary suspension of trading in a particular security.

T-bills

Treasury bills. Treasury securities with a maturity of one year or less. Treasury bills do not carry a rate of interest and are issued at a discount on the par value. Treasury bills are repaid at par on the due date. Treasury bills are the type of security used most frequently in open market operations.

Treasury Bonds

Also called Government bonds. Treasury securities with a maturity longer than one year.

Value Tomorrow

Settlement occurs in the next business day.

Venture capital

An investment in a start-up business that is perceived to have excellent growth prospects but does not have access to capital markets.

Volatility

The sharp movement in the price of a security, or in the overall prices prevailing in the market. Often measured by the standard deviation of series divided by its mean.

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End Notes

¹ The chronology was drawn up by Hursit Gunes, of Marmara University in Istanbul; the interviews were conducted by Servet Yildirim, Chief Turkish News Editor of Reuters.

² NBER (2001).

³ Alper (2001), Akyuz and Boratav (2002), Ozatay and Sak (2002), Ozkan (2003), Tunc (2003), and Yeldan (2001). See also OECD (2001).

⁴ This book was originally published in 1934 as “Murder on the Orient Express” in England and “Murder on the Calais Express” in the U.S.

⁵ For instance, Metin Munir would write in a *Euromoney* article in November 2000, “The seizure of Egebank and four other banks by the central bank in December last year was one of the pre-conditions of an IMF stand-by agreement. A senior official told *Euromoney* that the treasury had recommended that these banks be seized six months before that but that the government had taken no action. Around this time the minister in charge of the economy, Hikmet Ulugbay, made an unsuccessful suicide attempt, and Cuneyt Sel, the acting secretary general of the treasury, resigned. There was no explanation for either event”, “Treasury Bill Famine Drives Consolidation,” *Euromoney* November 2000.

⁶ Kinzer (2001), p. 188.

⁷ Renewed international diplomatic efforts that succeeded in bringing the Greek and Turkish Cypriots to direct negotiations in the autumn of 1999 were instrumental in this.

⁸ Ironically, a similar threat would be used during the February crisis, over a year later, to convince the politicians to float the currency.

⁹ Interview with a top official at the IMF.

¹⁰ See, for instance, Mussa and Savastano (1999), which does not mention “disinflation” as an IMF objective in a typical program design. Interestingly, however, Carlo Cottarelli, the IMF’s new mission chief to Turkey, had a paper arguing the

IMF could assume the role as a “lender of credibility” in disinflations (Cottarelli and Gianinni (1998)).

¹¹ For a complete technical description of the program, see Letter of Intent, December 1999.

¹² Financial Times, July 20, 2001.

¹³ IMF (2000).

¹⁴ Atiyas, et. al. (1999).

¹⁵ See Letter of Intent December 1999.

¹⁶ In private conversation, Mr. Cottarelli clarified that the government benefited from the fact that the public banks’ liabilities were short term; a major problem of disinflations is that the burden of interest payments rises, because of the existing stock of long-term securities. The fact that public banks borrowed a lot short term was, from this point of view, an advantage.

¹⁷ See IMF (2000) and Van Rijckeghem (1999) for an estimate of the windfall gains to the banking sector of a reduction in interest rates.

¹⁸ See Turkish dailies dated November 27, 1999.

¹⁹ Financial Times, December 3, 1999.

²⁰ Calvo and Vegh (1999).

²¹ More recently however, this “conventional-wisdom” has been challenged. Hamann (2001), for instance, shows that the output effect does not differ between the two approaches.

²² See. For instance, Financial Times, September 23, 1999.

²³ Some ardent defenders of currency boards reject the notion that preconditions are required to launch a currency board. See, for instance, Steve Hanke’s exchange with one of the author’s in the Financial Times, December 19, 2000.

²⁴ A sufficient supply of foreign exchange leads to the perception that the local currency can be converted into foreign exchange at the current exchange rate.

²⁵ A change in the money supply can be broken down into a change in net foreign assets (NFA) and a change in net domestic assets (NDA). See Glossary.

²⁶ Quasi-fiscal costs reflect the fact that the central bank pays higher interest rates on government bonds it repoes to the public than it receives on its investment of foreign exchange reserves. Thus higher foreign exchange reserves whose monetary impact is sterilized through sales of government bonds on which higher interest is paid, result in a quasi-fiscal cost.

²⁷ While they were supposed to be adhered to most of the time, the currency board rules were not an actual performance criterion, and thus deviation from the rule would not require a waiver. Only the breach of the end-quarter NDA ceiling would require a waiver. Further flexibility derived from the existence of a corridor around the NDA ceiling of about +/- 5% and from the fact that the corridor would not apply in the fortnights centered on religious holidays, including the fortnight centered on December 29, 2000 (See December 1999 Letter of Intent; Paragraph 32).

²⁸ Interview with Mr. Fischer.

²⁹ Interview with EVP of the Treasury of a large Turkish bank.

³⁰ As well, given that the pass-through from the exchange rate to prices was very strong, the real impact on competitiveness would naturally be lost pretty rapidly in the initial boom phase of the exchange rate stabilization program.

³¹ See Mussa et. al. (2000); Eichengreen and Masson et. al. (1998).

³² Interview with a Turkish bureaucrat.

³³ Interview with a top bureaucrat.

³⁴ Interview with a top official.

³⁵ According to a top IMF official, the IMF started to press for more incomes policy with the February 2000 mission and the issue was raised in the Letter of Intent for the first review. However, according to the IMF official, "the authorities were not able to do anything substantive; the June 2000 meeting of the Economic and Social Council was clearly "pro forma." The fact that, not even Kemal Dervis managed to get a formal incomes policy agreement, however, suggests that in Turkey these agreements are simply quite difficult to arrange."

³⁶ In fact state banks were able to attract TL deposits but at the cost of high interest rates. As the Treasury was ultimately responsible for state bank "duty losses" this indirectly translated into high borrowing costs for the Treasury, albeit costs which were only visible with a lag.

³⁷ Paragraph 54 of the December 1999 Letter of Intent read as follows: "The *Banks Act* will also be amended to strengthen the prudential standards for bank lending to owners and to single or related parties. The ratio of loans to large owners (defined as those with more than 10 percent of equity) shall decline from the current 75 percent of capital to 70 percent by July 1, 2000, and will then decline by 5 percentage points every six months

until the ratio of 25 percent is attained. In addition to these amendments to the law, the supervision authority (the Minister for Economic Affairs until the Board is appointed) will issue in December new, more stringent loan loss provisioning regulations in line with international standards to be applied fully to all new loans, including renewal of any existing loans, from January 1, 2000, and will modify the capital adequacy and foreign exchange exposure limit regulations to apply on a consolidated basis. Tax regulations will be amended so as to allow the deductibility of provisions for tax purposes. The implementation of this measure will be discussed in the context of the second review of the program. Banks that have capital adequacy ratios below minimum required levels will be required to present and adhere to time-bound programs for strengthening their capital positions. We are committed to the strict and uniform enforcement of these and other prudential regulations as well as agreed remedial measures and for this purpose, beginning in 2000, the Agency (the treasury until the Agency is established) will prepare a quarterly report for its management on infractions and banks' compliance with remedial measures." Paragraph 61 read as follows: "In particular, by end-April 2000 we will amend accounting rules to require consolidated accounting and proper valuation of securities (a structural benchmark for the completion of the second review). We also intend to fully implement by end-June 2000 (a structural performance criterion) capital adequacy and foreign exposure limits rules mentioned in paragraph 54. In addition, in order to assure the strictest compliance with these regulations by end-June 2000, we will introduce penalties (a performance criterion) for foreign exchange positions in excess of prudential limits (100 percent reserve requirement). The existing penalties will continue to apply for noncompliance with connected lending limits. Finally, we intend to issue by end-June 2000 regulations on internal risk management systems and amend capital adequacy rules to take into account market risks (structural benchmark for the completion of the third review)."

³⁸ Traditionally the household sector has not been attracted to the foreign exchange carry game, and in fact has played the opposite game most of the time, borrowing in TL (though one exception was car-loans, which were dollar-denominated (interview with Mr. Bayazit)) and keeping savings in foreign

exchange. In fact, as consumer lending increased in 2000, foreign exchange savings accounts grew (interview with a top Turkish banker).

³⁹ This high cost of TL funding reflected high reserve requirements and competition from state and SDIF banks. See, for instance, ABN Amro (2000).

⁴⁰ Still, the IMF was concerned about inflation developments from the beginning, and a commitment to agree on incomes policy (both prices and wages) was explicitly introduced in the program on the occasion of the first review.

⁴¹ Interview with EVP in charge of the Treasury of a large Turkish bank.

⁴² Interview with Mr. Timurkan.

⁴³ See Van Rijckeghem (1999) for an ex ante analysis.

⁴⁴ Fitch IBCA, "Turkish Banking Sector Restructuring Authorities Take Over Five Troubled Banks," February, 2000.

⁴⁵ Moody's Investors Service, "Turkey: Banking System Outlook," August 2000.

⁴⁶ Financial Times, November 20, 2000.

⁴⁷ JP Morgan report cited in Euromoney, "Treasury Bill Famine Drives Consolidation," November 2000.

⁴⁸ Interview with David Edgerly, board member Garanti Securities, as reported in Euromoney, "The Old Economy is Dead, Let's Bury It," April 2000.

⁴⁹ Independent Strategy, "Crisis Management," December 20, 2000.

⁵⁰ Interview with Mr. Timurkan.

⁵¹ The first Turkish 30 year eurobond was issued in early January and immediately proved popular with bankers as well as Turkish retail investors.

⁵² Based on a poll with medium and large banks or about 80% of the sector. Interview with EVP in charge of the Treasury of a Turkish bank.

⁵³ In these structures, the eurobonds of the Turkish banks were used as collateral for the loans given by the London banks. This type of structure was basically a repo agreement with a "hair cut", i.e. a margin that allows for price risk. The amount of such loans was limited by the size of the eurobond repo line.

⁵⁴ Banks Association of Turkey.

⁵⁵ The IMF was onto the correct picture earlier than London forecasters, where at the time the consensus forecast (a

consulting group in London) was 3¼%. Ankara pointed to the latter forecast, accusing the IMF of always being conservative (interview with a top official at the IMF).

⁵⁶ This point was made by Governor Gazi Ercel during our interview.

⁵⁷ Alper (2001), p. 60. Moreover, there were some specific factors: Textiles, which made up over 50% of Turkish exports, were going through a major crisis. The sector was over-invested and over-borrowed, and was in need of a major overhaul in order for Turkey to develop brand names and shift toward higher value-added products. This was so obvious that even leading names from the sector would admit to it. Meanwhile, a few nascent sectors, such as electronics, were doing well, suggesting that things were not uniformly bad for the sector.

⁵⁸ It may be worthwhile noting that unlike most major banks, Cingillioglu did not have a major presence in non-bank industries.

⁵⁹ Interview with Demirbank staff.

⁶⁰ Notwithstanding initial hopes that President would be the statesmanly figure to prepare Turkey for the E.U., his many conflicts with the Government, and the Prime Minister, in particular, as well as his apparently different views on economic reform, would soon become an important source of uncertainty for the program.

⁶¹ See Erdal Saglam, "Cagdas Bakan", *Hurriyet*, August 13, 2000.

⁶² Interview with a banker. We were told off-the record that the PM's office sent President Sezer a draft law on public sector banks for final approval with articles sure to be vetoed. The president would not necessarily have been against the banking sector reforms.

⁶³ Interview with staff of a large Turkish bank.

⁶⁴ Interview with Governor Ercel.

⁶⁵ Interview with Mr. Alpturk.

⁶⁶ Interview with a senior banker.

⁶⁷ All of the bankers were freed about a year later, without their trials being completed.

⁶⁸ On the anti-corruption operations, see Center for Strategic and International Studies, December 5, 2000.

⁶⁹ *New York Times*, November 12, 2000.

⁷⁰ Euromoney, "Treasury Bill Famine Drives Consolidation," November 2000.

⁷¹ JP Morgan, "Turkey's Problematic Banking System," June 9, 2000.

⁷² Lehman Brothers, "Weak Banking Sectors are Sovereign Liabilities," December 15, 2000.

⁷³ The regulations also stipulate that the ratio of foreign exchange assets to foreign exchange liabilities be between 75% and 115%.

⁷⁴ In a meeting at the Banks Association, a senior CBT official reportedly jokingly said to Banks Association officials that, "Your reporting of open positions is troubling our program."

⁷⁵ Interview with Mr. Keskin.

⁷⁶ This would compare to an official figure of \$2 billion (authors' note).

⁷⁷ Thus the position would seem closed (\$ deposits appeared to have a counterpart in London) but would really be open because of the contingent liability (put options which would come into the money with a devaluation). See Annex III for a description of the structures used in the Turkish case. As a guide to the possible magnitude of these structures, note that the balance sheet item "due from banks," which would include Turkish bank deposits in London (as well as deposits with Turkish banks such as state banks), was almost \$14 billion at end- September 2000, up from \$8 billion in 1999. For comparison, F/X deposits were \$36.5 billion in September 2000 (Banks Association of Turkey).

⁷⁸ EVP in charge of the Treasury of a Turkish bank. Such closing of positions each month reportedly amounted to \$500 million. Also contributing to the pressure on overnight rates was the fact that foreign banks established in Turkey stopped lending foreign exchange to local banks overnight at the end of the month, because of country limits.

⁷⁹ Interview with EVP in charge of the Treasury of a large Turkish bank.

⁸⁰ Interview with an economist at a London investment bank.

⁸¹ The BRSA only became operational in September and was not yet fully in the picture.

⁸² There seemed to be a rationale for having forward transactions with mother banks: these would benefit the group overall because the loss would reduce the tax burden, lending

plausibility to the idea that they were not fake contracts (interview with Governor Gazi Ercel).

⁸³ “Comforting Explanations from Ercel on the Open Positions,” October 2000, CSFB Research

⁸⁴ As described by the IMF, ““Fake” would be an appropriate term to use only in cases where, at the outset, it was manifestly impossible for the counterparty to fulfill its side of the bargain, or there was no intention of doing so.” (IMF, 2001, p. 9). There were also real forwards, including with foreign banks (some of which were defaulted on by foreign banks in February 2000). These forwards did not exactly offset the positions taken in the carry trade as they allowed for hedging of risks individually (default, devaluation, settlement risk).

⁸⁵ Those missions convinced the staff of the Monetary and Exchange Affairs Department of the IMF that the open position issue was overblown. In a May 2001 report, posted on the IMF’s website, it provided a number of rationales for why open positions might be limited. It also defended the BRSA expertise and position at length. “The SBAs (State Bank Auditors) have found no examples in the last year of banks undertaking foreign exchange business without proper analysis and/or outside duly authorized limits. Thus they are confident that, although “friendly” deals of the kind postulated cannot completely be ruled out [...], they do not occur to any important extent, either as to numbers or amounts. “Fake” would be an appropriate term to use only in cases where, at the outset, it was manifestly impossible for the counterparty to fulfill its side of the bargain, or there was no intention of doing so. The first point would be picked up by the SBAs, who review counterparty credit analysis as mentioned above. The second is more difficult to assess, particularly at the outset, but should be revealed on maturity of the deal. The SBAs should pick up unexplained failures to pay on the part of counterparties that are not appropriately dealt with by the bank concerned. The SBAs are confident that such deals are extremely limited in number. The mission accepts this view” (IMF, 2001, p. 9). The MAE report also argued against the existence of large structures hiding open positions. “Nonetheless, many banks claim that their exposures significantly exceed the 20 percent limit. [...] While these banks report correctly what they are asked to report to the BRSA/CBT, they claim that it is easy for them to find

structures that are not covered in the regulations, which therefore do not need to be reported. Some examples of such structures were described to the mission to illustrate the possibilities. [...]. The SBAs maintain that these structures would be detected in their examinations and that they have not found them in significant numbers. “ (IMF, 2001, p. 11)] The SBAs adduced as evidence that they had uncovered structures in 9 of the 13 commercial banks taken over by the SDIF, *before* their takeover. None were uncovered later, and this was interpreted as proof of the SBA’s thoroughness.

⁸⁶The IMF apparently, inter alia, discussed setting a limit on the amount of forward contracts that could offset open foreign exchange positions. This information was contained in its confidential “back-to-office report” for the November mission, the content of which, the rumor had it, was known among some London investment bankers. (Interview with a London analyst).

⁸⁷ Interview with EVP in charge of the Treasury of a large Turkish bank.

⁸⁸ This was a well-known fact: A morning commentary from YKB read, “This is the start of a very important week. We’ve got the last major redemption of this year coming up on the 23rd”.

⁸⁹ By November, it had built up a government bond portfolio of over \$5 billion (\$6 billion with Ulusal) or 15% of the total stock of government bonds held by banks.

⁹⁰ According to Demirbank staff, the Treasury and central bank encouraged Demirbank to increase its exposure, assuring them they would stand by them. A top bureaucrat disagreed, noting that on other occasions (September and October 1999) Demirbank had been warned by him about its huge borrowing from the central bank. Demirbank had bought paper in the summer of 1999, but with the earthquake shattering expectations, Demirbank had started borrowing heavily from the CBT.

⁹¹ Overnight borrowing rose from TL170 trillion to TL800 trillion, according to the ISE Monthly Bulletin.

⁹² Ulusal borrowed TL580 trillion daily in September.

⁹³ Various ISE bulletins.

⁹⁴ End-September data from the Banks Association.

⁹⁵ Demirbank staff disagreed with these figures, noting that funding through demand and time deposits as well as through

open positions, implied lower average costs. There were other concerns about Demir: a Turkish banker noted that “The first serious concern arose in August, as Medya holding – the owner of Sabah and ATV – to which Demirbank was heavily exposed, defaulted on its loans and this started the suspicions about Demir’s solvency. Demirbank was lending them \$300 million, plus there were many ways to lend (offshore). At that time, people still believed in the program and didn’t expect the Telecom privatization to become a mess that it did become in the fourth quarter.

⁹⁶ Demirbank letter to the IMF. This may have only referred to foreign exchange lines, not money market lines.

⁹⁷Data is not readily available on its equity just before the November crisis, but even at the time of takeover by the BRSA on December 6, Demirbank was still solvent according to some measures. It’s losses for the year measured (as permitted by law) based on the internal rate of return of the securities (rather than mark to market) in its investment portfolio was TL290 trillion versus TL318 trillion in equity. On a mark to market basis, Demirbank had lost some TL400 trillion for the year by December 6, causing it to have negative equity according to this measure.

⁹⁸ See Disbank Research, Weekly Report October 16-22, 2000.

⁹⁹ That said, with the “rest of the public sector” running a primary deficit of close to 2% of GNP, the *overall* primary surplus target for 2000 would end up at around 3%, which increased the need for measures, given the ongoing overheating in the economy. In fact, during the IMF-World Bank Annual Meetings at end-September in Prague, the IMF representatives, comprising Messrs. Deppler and Fischer, reportedly insisted on a shift in the primary surplus of the public sector from an estimated 3% to 5% of GDP.

¹⁰⁰ Financial Times, October 6, 2000. Alper and Onis (2001) have argued that failure to deliver on Turkish Telecom (and agricultural policies) resulted from populism, with coalition government member MHP drawing its support from rural areas and DSP from the urban poor.

¹⁰¹ Interviews with investment bankers. See also ABN Amro (2000) according to which the trigger for dollar purchases in the November crisis was “pressure in the banking system stemming from a requirement that banks bring their open

foreign exchange positions down to 20% of capital by year-end.”

¹⁰² Interview with investment bankers.

¹⁰³ That a low inflation would hurt the banking sector was a generally held view. See, for example, Lehman Brothers, “Turkey: Starting Over,” February 23, 2001. See also Van Rijckeghem (1999) who considered this issue *ex ante*.

¹⁰⁴ The announcement caused some panic because of concerns that these T-bills would be dumped on the market. The concerns were allayed later on, as Demiralp explained that these papers would be of the “non-cash” kind that could be repoed only with the CBT.

¹⁰⁵ Various YKB Evening Reports. Subsequent intervention during the day ensured that the daily devaluation rate lay in line with the pre-announced rate of crawl.

¹⁰⁶ Yet, bank stock prices were not out of line with the ISE National-100 index.

¹⁰⁷ Interview with a senior banker.

¹⁰⁸ Interview with eurobond trader Mr. Serkan Turk.

¹⁰⁹ On November 17, compounded yields were 40% and 38% respectively on the February 2002 and August 2001 papers, compared to 37% and 35%, respectively, on November 3. This compares with an average coupon rate of somewhere over 37% (its average rate at acquisition was 37% and subsequently Demirbank expanded its balance sheet by 50% at relatively high rates). There had been larger increases in rates in the first three weeks of September, when rates had increased from some 33 to over 41% in the first three weeks of September.

¹¹⁰ Interview with EVP in charge of the Treasury of a large Turkish bank.

¹¹¹ Interview with a Turkish banker.

¹¹² Interview with a Turkish banker.

¹¹³ Interview with IMF official.

¹¹⁴ Including increases in electricity prices, the elimination of VAT refunds, a tighter wage policy for public sector workers, increases in the levy on import credits, the extension of the temporary additional personal and corporate taxes as well as the additional real estate tax introduced in the 2000 budget, and a more defined and tighter commitment on the number of public sector employees.

¹¹⁵ Other structural reforms mentioned were the new central bank law codifying the CBT’s operational independence, the

issue of management rights for prospective strategic investors in Turk Telecom, the support price for sugar beets for 2000 which the mission considered excessive and measures to improve tax administration, including a timetable to roll out tax identification numbers, and the tax treatment of loan loss provisioning.

¹¹⁶ While the mission was concluded, *ad referendum*, the review itself was not concluded, and the disbursement was later to be combined with that of the fourth review in the second half of December.

¹¹⁷ Turkish Daily News, November 15 and November 20. Pressure from Ziraat as it needs to pay wages always leads to high overnight rates at mid-month (interview with a top bureaucrat), but it appears that the pressure was unusual even taking this pattern into account.

¹¹⁸ Turkish Daily News, November 20, 2000.

¹¹⁹ Turkish Probe December 3, 2000.

¹²⁰ As economist Mr. Ozturk put it: “Structured products were bigger than repo. The IMF never understood this and believed the true open position was \$3-4 billion. The November unwinding of structured products was a surprise to the IMF. The November crisis was not a currency attack, but an unwinding of structures.”

¹²¹ There were a number of different ways in which structures were unwound, depending on how they were formulated in the first place (see Annex III on most common financial structures). In some of the structures, collateral could be sold automatically if margin came to a low level without asking the counter-party. Some structures could not be liquidated without first requiring additional margin. In some structures, the investment bank had to ask a quotation from the structure holders. Thus, when interest rates rose, some structures were automatically unwound with the sale of collateral as a result. Others first triggered margin calls, which in itself pressured interest rates because this led to an additional demand for liquidity. If margin calls could not be met, there was again a sale of collateral and unwinding of the structure.

¹²² See Annex II for daily data on several market indicators including, among others, interest rates, CBT aggregates, and stock market variables during the November and February crises.

¹²³Interview with Deputy Director of Public Finance Department, Mr. Gelberi.

¹²⁴The rumor was widespread (interview with a top IMF official; Reuters Business Briefing of November 12, 2000; interview with a trader at a large Turkish bank), and has found its way into the academic literature (see Ozatay and Sak, 2002; Tunc 2003). The rumor was denied by the Treasurer, traders, and other staff at Demirbank.

¹²⁵ One can of course never be sure that all T-bills were captured on this balance sheet.

¹²⁶In fact, Ercan Kumcu traces the origin of the crisis to the week of November 13th, as discussed further in Chapter VII. In his view “The problem started around November 13th or 14th. I learnt from market participants that Demirbank was trying to sell TL10 trillion in bonds. Every 15 minutes that they could not sell, they increased interest rates. My hunch is interest rates would not have risen and the crisis not occurred if the central bank had injected liquidity then.”

¹²⁷ Yildirim (2000).

¹²⁸ For instance, without naming the banks in question, see CSFB, November 21, 2000 and Deutsche Bank, December 1, 2000. The commentaries referred to increasing pressure on banks to reduce their net open foreign exchange positions as a possible reason for the pulling of credit lines.

¹²⁹ The rumor was denied by our interviewees from the three banks concerned. As mentioned earlier, Akbank and Garanti had indeed cut their over the counter lending, but earlier, on October 31 (Demirbank letter to the IMF).

¹³⁰ For instance, without naming Demirbank, see Deutsche Bank, November 23, 2000. The loan in fact was for \$140 million, or an amount higher than the \$75 million with which Demirbank had gone to market, reflecting excess demand for the loan. It was signed on November 22 and disbursed a few days later.

¹³¹ Interviews with a London strategist and a trader at a large Turkish bank. According to an interviewee close to Demirbank the total amount of structures was \$200 million on November 22, of which only \$28 million was unwound during November.

¹³² CSFB, November 21, 2000.

¹³³ According to an economist at a foreign investment bank: “Interest rate increases in the overnight market and on T-bills

spooked clients who had become exposed at rates of '30s and '40s, and triggered stop loss sales.”

¹³⁴ Yildirim (2000). See also, Yildirim (2001).

¹³⁵ Interview with Mr. Kumcu.

¹³⁶ On November 21, rates on Demir's bonds reached 44% and 42% respectively on the 20/02/02 and 22/08/01 papers (a 7% increase from the previous day). According to Demirbank staff worries were unfounded, as Demirbank had a reservoir of T-bills it could use as collateral up until the day it was taken over by the SDIF.

¹³⁷ Interviews with a senior banker and with a eurobond trader, Mr. Serkan Turk. Lines could be cut with 1-2 days notice (see Annex III).

¹³⁸ Dow Jones Newswires, November 21, 2000.

¹³⁹ The Treasury and coalition partners had, perhaps rather belatedly, become aware of the segmentation in the inter-bank market underway since September. The situation was discussed at the Board meeting of one large bank (Isbank) some time in the third week of November. Selcuk Demiralp was informed about this meeting, and in turn briefed the coalition leaders. (Interview with staff from the Turkish Treasury.)

¹⁴⁰ A banker commented: “Ankara thought that the matter was a quarrel between some banks. This wasn't the situation at all. [...] Worries about the banking system as a whole meant even banks with high credibility had to increase interest rates. Still, Ankara considered the case as a quarrel among banks rather than a loss in credibility of the banking system as a whole.” (Yildirim (2000))

¹⁴¹ The CBT had three facilities at its disposal to control liquidity in the market. It could hold repo auctions in the morning at 10 a.m. (regular open market operations) to provide liquidity based on its “liquidity forecast” for the day. Second, it could provide liquidity when necessary in the interbank money market guaranteed by the central bank, by posting a buying and selling price (the so-called overnight rate). Third, it could provide liquidity at the ISE repo market in the evenings. This window is usually used to ensure books can be closed and the payment system operates smoothly.

¹⁴² Interview with a top official.

¹⁴³ Interview with a top official. In our interviews references were also made to withdrawals from the interbank money

market guaranteed by the central bank, but volumes there were comparatively low.

¹⁴⁴ Reflecting its large client base especially after its merger with Bankers Trust and good sales force, Deutsche brought in \$4 billion in the 18 months before the crisis, including structures, “bank to bank”, investments in TL in financial markets, and excluding credit lines (interview with unidentified source). In our interviews, a reference was also made to a structure being unwound by a hedge fund (the Caribbean based fund?) client of Deutsche Bank.

¹⁴⁵The Chairman of Deutsche Bank’s local branch told the Daily Yeni Binyil that it was the bank’s clients who transferred out \$1.5 billion over a number of days and not Deutsche itself. He said the clients were annoyed by the lack of privatization, the banking sector rumors, and the cost of insolvent banks to the treasury (Dow Jones Newswires Turkey: Business News from the Turkish Press, December 8, 2000).

¹⁴⁶ One interviewee noted “Many of the institutions withdrawing their funds from Turkey told their Turkish counterparts that they were leaving because others were. They stated that they didn’t understand what was going on, but that others leaving and high interest rates were enough of a signal that something was very wrong” (Interview with EVP in charge of the Treasury of a large Turkish bank).

¹⁴⁷ Letter by Demirbank to the IMF, “Such movement [in interest rates], even before Demirbank began its dealings, proves that there was a manipulation initiated by some banks that would benefit from the high interest rate environment.” (Paragraph 7)

¹⁴⁸ According to Demirbank staff, the central bank encouraged Demirbank to withdraw from the ISE and to maintain its repo rates at existing levels (75%). According to a letter by Demirbank to the IMF “the central bank had acknowledged the fact that there was an organized movement and asked Demirbank to borrow from the central bank only instead of the ISE repo market. Demirbank complied with this request on that day and the following days. Senior central bank officials had reconfirmed to Demirbank that there was an intentional and organized attack on Demirbank on a number of occasions.” Further, according to Demirbank staff, the central bank also that they could net off positions with the ISE, allowing it to avoid defaulting on its obligations. A top official

disagreed with these statements, arguing that it would be crazy of the central bank to encourage Demir's exit from the markets. The top official also noted that it was normal central bank practice to provide liquidity after market close, the logic being that markets should be given a chance to equilibrate during the day.

¹⁴⁹ Interviews with a Turkish banker and Demirbank staff. ISE overnight repo volume was down from TL3.1 quadrillion (which was unusually high) on the 21st to TL2.5 quadrillion on the 22nd. It was TL2.4 quadrillion on the 23rd and TL2.1 quadrillion on the 24th. Demirbank's withdrawal from the ISE lasted from the 22nd to the 24th.

¹⁵⁰ State banks were in a similar position as Demirbank and had to approach the CBT for funding.

¹⁵¹ Cumulatively in the crisis NDA increased by a staggering TL3.7 quadrillion, indicating a breach of the NDA ceiling under the program of TL3 quadrillion.

¹⁵² Interview with an economist at a foreign investment bank. Note however that the increase reflects the end of day increase in free reserves of the banking system by TL600 trillion, which was mopped up on the next day (NDA declined by TL1 quadrillion on the 23rd).

¹⁵³ Interview with a top IMF official. Recall that the performance criterion is on NDA at end-quarter, not during the quarter.

¹⁵⁴ Interview with EVP of the Treasury of a large Turkish bank. Akbank staff claim that it never placed funds interest free with the CBT.

¹⁵⁵ Demirbank paid a penalty fee for this late payment. The total penalty paid to the ISE during those 10 days was 22 trillion TL (interview with Demirbank staff).

¹⁵⁶ Interview with EVP in charge of the Treasury of a large Turkish bank.

¹⁵⁷ Interview with a top bureaucrat.

¹⁵⁸ Interview with Demirbank staff.

¹⁵⁹ Interviews with Demirbank staff.

¹⁶⁰ CSFB November 23, 2000. J.P. Morgan also noted the possibility that the currency board arrangement might not be maintained in the long run, but downplayed the liquidity injection on November 22 as it appeared to have been agreed with the IMF, and could always be scaled back (J.P. Morgan, November 24).

¹⁶¹ Interview with a top official. At the meeting, Temizel tried to assuage fears over the closing of open positions.

¹⁶² Interview with a top official.

¹⁶³ CSFB, November 27, 2000.

¹⁶⁴ Interview with Demirbank staff.

¹⁶⁵ IMF News Brief No. 00/107, November 26, 2000. Fischer's statement also referred to the announcement on November 15 of an agreement on strengthened policies, including fiscal measures to increase the primary surplus from 3% to 5% of GNP in 2001.

¹⁶⁶CSFB November 27, 2000.

¹⁶⁷ TL275 trillion nominal of July 18, 2001 bonds from bids of TL713 trillion (nominal) at an average compounded yield of 41.90 and TL245 trillion (nominal) of August 22, 2001 bond from bids of TL1,403 trillion (nominal) at an average compounded yield of 40.53%] (YKB Evening report, November 27).

¹⁶⁸Demirbank offered to sell about T12 quadrillion in T-bills in a range of around 38-45% (interview with Demirbank staff).

¹⁶⁹ Dow Jones Newswires, November 28, 2000.

¹⁷⁰ Interview with unidentified source.

¹⁷¹ One interviewee told us that word of a debate at the IMF had gotten out and that his bank subsequently cut its proprietary position.

¹⁷² CSFB November 30, 2000.

¹⁷³ CSFB December 1, 2000.

¹⁷⁴ IMF News Brief No. 00/109, November 29, 2000.

¹⁷⁵ Goldman Sachs, December 1, 2000.

¹⁷⁶ Morgan Stanley Dean Witter, November 30, 2000. They estimated the probability of a devaluation before year-end at 20% and of over 30% in the first quarter.

¹⁷⁷ Interview with a top bureaucrat.

¹⁷⁸ Total outflow of \$5.9 minus \$4 billion estimated outflow due to liquidation of repo, bond, and currency positions by foreigners. According to EVP in charge of the Treasury of a medium-sized Turkish bank, half or more (approximately USD2.5 billion) of funded local currency structures were unwound by the end of the November crisis. In addition there were outflows because of the raising of haircuts (on average from 30-35 to 50%) and margin calls because of the decline in prices of T-bills.

¹⁷⁹ One of our interviewees noted that unwinding of structures risked the relationship but was done anyway, on the logic that “a 20% loss from devaluation could have exceeded the profits to be made from the counterparty.” This illustrates the type of thinking at the time, including as to the likely size of the devaluation.

¹⁸⁰ Yildirim, December 2000.

¹⁸¹ J.P. Morgan, February 2001.

¹⁸² Interview with treasurer of a top bank.

¹⁸³ Interview with EVP in charge of the Treasury of a large Turkish bank.

¹⁸⁴ Between 25th and 30th, ISE limits were cut from 3 quadrillion to 600 trillion. Recall that the default at the ISE by Demirbank only reflected the operational problem associated with shifting from ISE to central bank funding. With the central bank providing funds only late in the evening, the ISE believed banks would have difficulty delivering funds they owed before closure at 5PM, leading to technical default, as had happened with Demirbank on the 22nd of November.

¹⁸⁵ Interview with a Turkish banker. At the time Demirbank had sufficient T-bills to provide the necessary collateral, so in one view the CBT went against its legally mandated lender of last resort function. (interview with Demirbank staff).

¹⁸⁶ Interview with a top official.

¹⁸⁷ Hursit Gunes chronology.

¹⁸⁸ For the Asian experience, see IMF 2002, p. 12.

¹⁸⁹ The guarantee was apparently issued over the objection of the BRSA, which was concerned about the cost to the budget (interview with a top BRSA official). There was a sense on the part of the IMF banking team at that point that the Turkish banking system was on the verge of a meltdown and that an immediate announcement of a new IMF program as well as a general bank guarantee was imperative. Some delay in negotiations nevertheless occurred, apparently because of both the BRSA's and the government's reluctance in issuing a general bank guarantee, and because of unwillingness on the part of the Treasury to give the SDIF its needed funding guarantees. Details on the guarantee were announced on January 18, indicating that it covered all liabilities of the banking sector, including off-balance sheet items of all Turkish commercial banks, their foreign branches, and offshore subsidiaries.

¹⁹⁰ It was taken over pursuant to article 14/3 of the Banks' Act No. 4389, which states that the SDIF may take over a bank with an affirmative vote of at least 5 of its members if: (a) a bank can not fulfill its obligations as they fall due; (b) the value of the liabilities of the bank exceeds the value of the assets; and (c) the continuation of its activities would threaten the rights of depositors and the security and the stability of the financial system.

¹⁹¹ See, for instance, the PM's interview with Ankara correspondents of major Dailies on January 2, 2001.

¹⁹² In August, the President vetoed a government amendment to remove civil servants with religious inclinations from civil service, tilting the balance in the public eye to his favor as a man who represents law and order against a government that was always trying to bend the law to turn things its way.

¹⁹³ New York Times, January 20, 2001.

¹⁹⁴ ABN Amro, "Macroeconomics: Turkey," January 19, 2001.

¹⁹⁵ As reported in CSFB, January 26 2001.

¹⁹⁶ Interview with an economist at a foreign investment bank, who noted that state banks could never attract large credit lines based on their financials.

¹⁹⁷ The high interest rates (2-3000%) had led to a redistribution of across banks, with large losses at some banks and large profits at others (notably liquid banks), and changed the balance of economic activity.

¹⁹⁸ In the interpretation of one interviewee, big banks had to comply with the Ankara demand, because Ankara wielded a certain power given that banks were not always in compliance with the complex regulatory framework.

¹⁹⁹ Interviews with several small banks.

²⁰⁰ In the words of a Turkish banker, "Banks had learnt that the central bank had become under the new exchange rate arrangement like a hospital that would close when you had an accident and needed just a little liquidity."

²⁰¹ Lehman Brothers cautions investors about the lack of banks appetite for government debt as Turkish banks are likely to pursue liquidity rather than profitability given the dent in their capital from the November crisis and looking ahead to real sector weaknesses. See Sovereign Strategy, February 2001.

²⁰² The augmented program approved in December 2000 had extended the original stand-by agreement and marked the completion of the 3rd and 4th reviews.

²⁰³ See Salomon Smith Barney, January 25, 2001; CSFB Emerging Markets Fixed Income Research, Turkish local currency, January 24, 2001; and ABN Amro, January 19, 2001, respectively.

²⁰⁴The IMF's MD Kohler was remarkably positive in his statement following the Board meeting on February 5: "Policy implementation since the last Executive Board meeting has been most encouraging. In particular, the central bank has strictly implemented the monetary policy framework laid out in their December 2000 Letter of Intent and important actions in the structural area have been implemented during January." The statement mentioned only one area, the passing of the Electricity Law, where the government was behind the program, but the IMF decided not to delay the conclusion of the Review. However, news of the tax amnesty came only following the Board Meeting.

²⁰⁵ Here Mr. Deppler is presumably referring to the possibility that the Constitutional Court could ban the Islamic party, which would lead to the resignation of some 80 MPs and trigger by-elections, an issue also noted in the June 2001 Staff Report.

²⁰⁶ NBER (2001).

²⁰⁷ IMF (2001).

²⁰⁸ Interview with a top IMF official.

²⁰⁹ Sabah, February 14, 2001.

²¹⁰ Hurriyet, February 14, 2001.

²¹¹ At least one London economist predicted devaluation in February, but majority of market participants were surprised by this concrete position.

²¹² Interview with top official at the IMF who noted that it would have been possible to call major industrial groups and threaten them with higher taxes in 2000 and 2001 as had been suggested by Professor Dani Rodrik of Harvard University who was advising the CBT Governor at the time. The suggestion, which could in fact have fixed a long-time weakness of the program, was not taken into consideration, possibly because there was no political figure to pull it together.

²¹³ Moody's and Standard and Poor's estimated the cost of bank recapitalization at the time at \$20-\$30 billion and \$35-40 billion respectively. These figures included unsecured duty losses at state banks of TL15 quadrillion, or \$20 billion, which were already incorporated in the IMF fiscal accounts (Moody's as quoted in CSFB January 30 Emerging Markets Daily;

Opening Remarks from S&P's Conference Call on Turkey Faces Challenges of Banking Sector Reform, January 18, 2001)

²¹⁴ Morgan Stanley, "Macro Commentary: Turkey Floats," February 22, 2001.

²¹⁵ Salomon Smith Barney, "Turkey: Cautiously Optimistic," January 25, 2001.

²¹⁶ Fischer (2001).

²¹⁷ Phone conversation in February with one of the authors.

²¹⁸ This was argued in a series of articles by Okan Muderrisoglu, an "insider" journalist, in the Daily Sabah (February 17-19, 2002).

²¹⁹ The timing with which the decision became known is difficult to assess. According to a high-level Turkish bureaucrat, the NDA decision was leaked ahead of its publication in the letter of intent after market closure on February 5 – someone from the IMF staff was rumored to have passed the information to London.

²²⁰ J.P. Morgan, Economic Research Note, January 12, 2001. The note states that NDA was supposed to come down to about \$2.2 billion by January 11, but actually fell to \$420 million, thereby creating policy discretion in case of a sudden liquidity squeeze.

²²¹ Interview with Treasury official.

²²² Emre Timurkan Newsletter, February 18, 2001.

²²³ YKB Evening Report, various issues.

²²⁴ Okan Muderrisoglu, Sabah, February 19, 2002.

²²⁵ See Annex II for daily data on several market indicators including, among others, interest rates, CBT aggregates, and stock market variables during November and February crises.

²²⁶ A constitutional body that comprises the President, PM, a number of key ministerial posts, and top military officials. Arguably, it is the most important decision-making body in Turkey, where national priorities are set and "threats" are addressed, though this is now changing as a step toward meeting the E.U.'s Copenhagen criteria. The so-called "soft coup" of February 1997 that ended the Islamist government of the time evolved out of a NSC meeting.

²²⁷ Center for Strategic and International Studies, March 5, 2001.

²²⁸ Interview with EVP in charge of the Treasury of a medium-sized Turkish bank.

²²⁹ Erdal Saglam, Huriyet, February 22, 2001.

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- ²³⁰ Interview with bureaucrat present at the meeting.
- ²³¹ Interview with a top official.
- ²³² Interview with Governor Gazi Ercel.
- ²³³ The EVP in charge of the Treasury of a large Turkish bank commented how with liquidity provision the market would have bought \$14-15 billion and wiped out reserves.
- ²³⁴ Interview with a top official at the IMF.
- ²³⁵ Interview with a top bureaucrat.
- ²³⁶ Interview with a senior Turkish banker.
- ²³⁷ YKB Evening Report, February 20, 2001.
- ²³⁸ Interview with Governor Gazi Ercel.
- ²³⁹ Interview with a top Turkish banker.
- ²⁴⁰ YKB Evening Report, February 20.
- ²⁴¹ Interview with Mr. Gelberi.
- ²⁴² Interview with YKB staff.
- ²⁴³ As noted earlier, this was because the financials of state banks would not permit foreign banks from taking on larger positions. Foreign banks would allocate maximum \$100-200 million each, and hence 5-6 foreign banks would not make up more than \$1 billion of the \$5 billion total requirement of state banks (interview with an economist at a foreign investment bank). Everyone had TL100 trillion over the counter without collateral; ABN, Citi, Chase, SSMB, Goldman, Merrill, all probably had funds with state banks (interview with YKB staff). But an alternative view held by a number of Turkish bankers was that lending by foreigners to state banks was sizeable, on the order of \$3 billion.
- ²⁴⁴ According to an economist at a foreign investment bank, state bank creditors included the three large private banks. Unlike foreign banks, local banks had no limits for lending to state banks, and parked their excess liquidity there. According to one estimate, 4-5 Turkish banks were lending \$3-4 billion to state banks.
- ²⁴⁵ Interviews with a top Turkish banker and Mr. Kumcu. In fact, at the airport, Mr. Kumcu talked to Undersecretary Demiralp as he was on his way to Ankara with Stan Fischer – they had left the G-20 meetings together during lunch – and argued for liquidity provision. The Undersecretary said Fischer was not in favor: This was done once in November and should not be allowed this time (Interview with Mr. Kumcu).

²⁴⁶ Ironically, this phrase from Becket's *Waiting for Godot* was not generally known and was interpreted by some as meaning that waiting for devaluation was unpatriotic.

²⁴⁷ Interview with a high official.

²⁴⁸ Okan Muderrisoglu, *Sabah*, February 19, 2002.

²⁴⁹ CBT (2003).

²⁵⁰ The rumor that circulated then, about the CBT selectively providing liquidity to state banks so that foreigners could get out was false. Foreigners were able to leave because they were mostly invested in the central bank-guaranteed money market, rather than with state banks. More generally, the central bank did not provide liquidity selectively. Interview with a top official.

²⁵¹ Interview with EVP in charge of the Treasury of a large Turkish bank.

²⁵² Interview with a top official.

²⁵³ Quarterly statistics from the Banks Association.

²⁵⁴ Interview with an economist at a foreign investment bank.

²⁵⁵ Interview with a senior banker.

²⁵⁶ Interview with EVP of Treasury of a Turkish bank.

²⁵⁷ Interview with a top official.

²⁵⁸ Interview with Treasury official.

²⁵⁹ One may ask, as Mr. Kumcu did during our interview, why outflows were not even bigger if confidence was indeed entirely lost, i.e. why the entire redemption did not turn to foreign exchange. This would have implied an outflow of \$6 billion rather than \$3.5 billion. It appears that part of the answer is that a sizeable amount of the rollover was by individuals, who found the one month T-bill attractive (interview with the EVP in charge of the Treasury of a medium-sized Turkish bank), that some \$0.5 billion of the rollover was by public institutions, and that another \$0.5 billion of the issuance was in foreign exchange, and hence did not carry a devaluation risk.

²⁶⁰ Interview with a banker.

²⁶¹ *Sabah*, 16 July 2003 "O Gecenin Sirri". The details as published were Citibank, \$1.0638 billion; Deutsche Bank, \$764 million; Kocbank, \$426 million, TEB, \$411 million; YKB, \$383.7 million; Chase Manhattan, \$332.6 million; Osmanli Bankasi, \$269 million; Disbank, \$258 million; HSBC, \$254 million; WLB, \$227.2 billion; Garanti Bankasi, \$199 million; ABN Amro, \$135 million; Finansbank, \$121 million; Is Bankasi, \$95 million; Turkbank, \$90.9 million; Iktisat Bankasi,

\$58.3 million; Tekstilbank, \$51.7 million; CSFB, \$50 million; Interbank, \$42.3 million; Akbank, \$27 million; TAIB Bank, \$25 million. These amounts include purchases on account of clients, including Turkish banks purchasing foreign exchange offshore through foreign banks.

²⁶² Interestingly, in contrast to a number of second generation models of currency crises (and the experience in Sweden, Mexico and Asia), the cost of high interest rates to the banking sector (including Ziraat) was barely mentioned.

²⁶³ A top banker confirmed that the main reason for devaluation in the minds of the meeting participants was the need to ensure IMF support.

²⁶⁴ Reportedly the decision to devalue was made in the first half hour of the meeting, with the rest of the meeting dedicated to discussing the consequences for the banking sector.

²⁶⁵ See International Capital Markets Report (1999) for a review of the behavior of ratings during emerging markets crises.

²⁶⁶ See Calvo and Vegh (1999).

²⁶⁷ In a private conversation with the authors, Mr. Cottarelli clarified this further: "The crisis would not have occurred if the exchange rate had not appreciated excessively and the current account deficit had not risen to a record level for Turkey. The root of the crisis is there and indeed, the structural vulnerabilities of the Turkish banking system were exacerbated by the emergence of an exchange rate disequilibrium, which increased the risk of a devaluation and a rise in interest rates." Notably, in the same conference, Rusdu Saracoglu, an ex-Governor of the Central Bank, provided a variant of this view: "...with capital flows affecting the availability of private sector credit and thus economic activity. When activity improves, financial markets think things are going well, reducing the financing constraint still further. Gradually, however, the bad news builds up as the current account deteriorates. The markets conclude that too much credit has been allocated to Turkey, and the constraint begins to tighten again."

²⁶⁸ See Yeldan (2001).

²⁶⁹ Specifically, the variables that signaled crisis were the current account, the real exchange rate, interest rates, and the stock market.

²⁷⁰ See Goldman Sachs, 1998.

²⁷¹ A related question, which we do not elaborate here, is whether the Turkish crisis was a typical "twin crisis". On the

surface, the pattern of the Turkish crisis mimics the pattern identified in Kaminsky and Reinhart (KR) in their study of twin crises: Early banking sector problems resulting from low growth are followed by balance of payments problems, which then lead to more substantial problems in the banking sector as balance sheets suffer from the balance of payments crisis. It is interesting to note, however, that banking problems, unlike in the KR conjecture, originated from an “excessive drop” in rates, rather than on account of an increase in non-performing loans in the bust (or low growth) phase of exchange rate-based stabilization programs. Turkey was clearly still in a boom phase and banks’ bad loans had not (yet) started to increase.

²⁷² A top IMF official pointed out that the exit was not meant to restore competitiveness, in the presence of failure to disinflate fast enough in the first year of the program. In fact, Stan Fischer had worried that the exit was too late.

²⁷³ Specifically, Table 4 shows that, apart from stabilization programs in transition economies, the Brazilian program of 1964, the Israeli program of 1985, and the Uruguayan program of 1990, all programs ended with unplanned devaluations, but the only one that experienced it within about the same amount of time with Turkey’s was Brazil’s Cruzado plan of 1986. But then again, this program, as it were generically the case in those days with Latin programs, counted merely on incomes policy (wage and price freezes) and was not adequately supported by tight fiscal and monetary policies, and was associated with declines in reserves from the start.

²⁷⁴ Calvo and Vegh (1999), p. 1548.

²⁷⁵ As a matter of fact, a year later, the oil price was, on average, \$24 per barrel.

²⁷⁶ This is also the stance that an IIF report co-authored by one of the authors, took at the time (IIF October 2000).

²⁷⁷ On some measures, notably the unit labor cost (ULC) measure constructed by the central bank, the lira had actually *depreciated* in real terms since after the 1994 crisis. But this measure was received skeptically. Mr. Fischer noted during our interview that “when the authorities come up with one measure of the exchange rate that shows the currency is not overvalued, you know you are due for a devaluation. In all cases of emerging market devaluations following the defense of a peg in the 1990s, actual devaluations were initially much

larger than those implied by pre-devaluation measures of exchange rate overvaluation.” Late Rudi Dornbusch, while he did not see a severe problem with the lira at the time of the crisis, commented at the NBER conference that ULC measures are problematic because the data are not trustworthy. Also of note was that much of the real exchange rate appreciation occurred in the first two months on account of pass-through of administrative price increases in the second half of December 1999 (interview with Economist Mr. Ozturk).

²⁷⁸ Akyuz and Boratav (2002) and Tunc (2003) also argue the significance of this indicator.

²⁷⁹ See Rodrik and Velasco (1999), Borenzstein et. al. (1999), Bussiere and Mulder (1999), Mulder, Perrelli, and Rocha (2002), and Osband and Van Rijckeghem (2000).

²⁸⁰ IMF (2000).

²⁸¹ A ratio of short-term debt to reserves of one is the cutoff point for safety according to the so-called “Greenspan-Guidotti rule”.

²⁸² Interviewees from the IMF, central bank, and private Turkish banks made this suggestion. It should be noted, however, that a take-over was apparently not legally possible given Demir’s equity in the beginning of the crisis (at least based on internal rate of return calculation for its investment portfolio, as permitted by law) and the absence of regulation on interest rate risk (which meant Demirbank had done anything illegal); and that direct liquidity provision *was* tried, thereby drastically reducing Demir’s need to access the markets, but that notwithstanding this, the crisis continued. More importantly, preventing what appears to have been the trigger of the crisis would probably not have been sufficient, as there were many other potential crisis triggers (e.g. Operation Hurricane) given that the economy was vulnerable to a self-fulfilling crisis. In hindsight, a better solution would probably have been to prevent Demirbank “coming to the rescue” in September, and to have bitten the bullet then rather than artificially extend the life of the program by hoping for the best. Having learnt this lesson, new regulations on interest rate risk were indeed introduced after the crisis.

²⁸³ CSFB, November 23, 2000.

²⁸⁴ Interviews with the three banks concerned.

²⁸⁵ Turkish accounting practice, according to which a security cannot be booked in a repo transaction above its book value,

also played a role (Interviews with a Turkish banker, with Mr. Timurkan, and a with a senior banker).

²⁸⁶ Interview with a Turkish banker.

²⁸⁷ Demirbank itself perceived the situation as such (Demirbank letter to the IMF).

²⁸⁸ Interview with EVP for Treasury of a large Turkish bank.

²⁸⁹ This view was shared by a group of economists influential in the local media.

²⁹⁰ See Financial Times, March 12, 2001.

²⁹¹ Demirbank sold only some TL12 trillion on November 14 and TL14 trillion on the 16th, tiny amounts compared to the size of its balance sheet and bond volumes overall.

²⁹² In fact, this view was later formally conveyed to Kumcu, by Governor Ercel.

²⁹³ Economist Mr. Ozturk and a number of bankers pointed to these factors in our interviews.

²⁹⁴ Traditionally only \$1-2 billion in positions would be closed because positions were small and structures simple, excluding complicated structures to carry open positions, and because the banking sector was less concerned about its appearance to foreign institutions (when applying for syndicated loans, banks present the end-year balance sheet and need to show positions which are reasonable to manage). (interview with the EVP in charge of the Treasury of a medium-sized Turkish bank).

²⁹⁵ See Calvo and Mendoza (1996).

²⁹⁶ Yildirim (2000).

²⁹⁷ See, for instance, Deppler (2001a).

²⁹⁸ The payment collapse was only avoided by breaking the new NDA limit on December 4 and providing state banks with the necessary liquidity.

²⁹⁹ E.g. senior trader Mr. Aksel. Deutsche Bank was rumored to be speculating by repoing its securities with the CBT, but as central bank limits for repo were based on asset size and capital, a bank like Deutsche could not speculate for more than TL10-20 trillion (Interview with an economist at a foreign investment bank).

³⁰⁰ See e.g. JP Morgan, "Turkey: Mind the Change in Monetary Policy," January 12, 2001.

³⁰¹ Interview with a senior banker.

³⁰² A top official of the IMF noted that the accusation of an IMF staff member passing this information to London did not

originate at the IMF and that it had itself only heard the rumor during meetings at the Central Bank.

³⁰³ At the time, by contrast, when it was not known that devaluation was almost a foregone conclusion, the central bank actions seemed more to reflect an interest rate defense of the exchange rate or a defense of the NDA target under the IMF program.

³⁰⁴ [Our chronology for February 21 provides additional speculations as to the reasons for such default on commitments at the auction.](#)

³⁰⁵ Our interviews with foreign investors confirmed that indeed there was concern about devaluation as early as November 22nd (Black Wednesday), but that there was no widespread concern among local banks during the November crisis.

³⁰⁶ Interview with Governor Gazi Ercel.

³⁰⁷ One interviewee from the Treasury suggested that the program was massively under-financed. The macro-framework for the new program seemed overoptimistic, as it assumed positive growth, relatively small bank re-capitalization expenditures, large privatization revenues, and large eurobond issuance.

³⁰⁸ Morgan Stanley, "Macro Commentary: Turkey Floats," February 22, 2001.

³⁰⁹ EVP in charge of the Treasury of a large Turkish bank and another senior banker.

³¹⁰ This is the interpretation of Tunc (2003), for example.

³¹¹ Flood and Garber extend the Krugman model in the second part of their paper, where they add uncertainty to fundamentals (namely credit growth), and thereby generate a forward discount on the exchange rate (a forward exchange rate larger than the spot rate), higher interest rates before the crisis, capital outflows before the crisis, and a jump in the exchange rate at the time of the crisis. There is a single equilibrium, but the timing of a crisis depends on shocks to the fundamentals.

³¹² See Ozatay and Sak (2002) for data.

³¹³ This model was developed in an attempt to explain the Asian currency crises of 1997-8 and the authors have argued that it is also of applicability to Turkey.

³¹⁴ Note how as in the Krugman (1979) model, the government does not reduce its deficit notwithstanding the fact that this implies a balance of payments crisis in the future. Several

reasons have been suggested in the literature, including ministries' not internalizing the overall budget constraint, a war of attrition between political parties over balancing the budget, and pushing inflation into the future, as reviewed in Obstfeld (1994).

³¹⁵ Serdengecti (2002).

³¹⁶The ultimate cost of recapitalizing SDIF banks, including the effect of high interest rates after the November crisis and of the devaluation, was \$22 billion through 2002, still comparatively low (Van Rijckeghem, 2003). Caprio and Klingebiel, 2003 provide comparative data.

³¹⁷ Many banks wanted to reduce their open foreign exchange positions by the time of the exit to a more flexible exchange rate arrangement, and there were questions as to how this would play itself out.

³¹⁸ To recapitulate, the illiquid segment of the banking sector had suffered tremendously owing to high interest payments on its short-term debt. In addition, the negative impact of the November crisis on growth hurt the banking sector further. This caused banks to be both more risk averse and try to remain liquid, reducing prospects for easy debt rollovers.

³¹⁹ In another class of models, discussed in Flood and Marion (1998) the possibility of attack-conditional policy changes, such as an increase in the growth rate of credit following devaluation is a reason for multiple equilibria. Ozatay and Sak (2002) have also assessed the Turkish November crisis in the context of the currency crisis literature. They conclude that the February crisis does not fit well into the second generation of currency crises models because of the large recession that followed the devaluation and because macro-economic policies were not expansionary following devaluation. They favor a "third generation" explanation (discussed below in the main text here) based on a combination of a fragile banking sector and triggering factors that made this fragility crystal-clear.

³²⁰ Such measures and IMF support were not a foregone conclusion. The IMF considered the devaluation option early on. From its point of view, it was trying to correct of disequilibria early in the game. With hindsight, an early controlled devaluation with strong IMF support would have been preferable to the final outcome. But alas, what all had tried to avoid, happened in the end, namely a disorderly devaluation.

³²¹ The setup requires there to be a chance (however small) that fundamentals are so poor that the government would devalue even in the absence of a speculative attack. Conversely it also requires there to be a chance that the fundamentals are so good that the government would not devalue even in the presence of the strongest possible speculative attack. Sprati and Sbracia (2002) provide the references in this regard.

³²² For instance, in the case of a severely overvalued exchange rate and/or dismal rollover prospects.

³²³ Readers interested in the role of the precision of public and private signals are referred to Prati and Sbracia (2002).

³²⁴ The authors also consider the case where the position of the large trader is not known. Even then traders become more aggressive when a large player is present, particularly when the large player has more precise information. As in Morris and Shin (1998) there is a unique equilibrium, with a currency crisis occurring earlier if a large player has more precise information, in the limit as all players' information becomes very precise.

³²⁵ For an overview of the literature on herd behavior in financial markets, see Bikchandani and Sharma (2001). See also Calvo and Mendoza (2000).

³²⁶ Interview with a senior banker.

³²⁷ As Kehoe and Obstfeld in their comments on Krugman (1996) and subsequently Masson and Jeanne (2000) have pointed out, Krugman's result also depends on contemporaneous expectations of devaluation entering the government loss function, rather than lagged expectations. By contrast, in most second generation models, lagged expectations of devaluation enter the government loss function.

³²⁸ Jeanne and Masson (2000) show more generally that multiple equilibria are not possible as long as fundamentals are continually deteriorating (deterministically, as in Krugman, or stochastically) or even follow a random walk. Their finding is a corollary of another finding of theirs in that "for sunspot equilibria to exist the probability of a decrease in the fundamental must be strictly increasing with the fundamental, at least over some range," a condition akin to stationarity.

³²⁹ According to one of our interviewees working for a foreign investment bank:

"Starting in September, the flight to quality started. Foreigners switched lending from low quality investments to high quality

investments (such as the CBT money market). Some foreign and conservative Turkish banks left the ISE repo market in mid-October because of concerns over Demirbank and fears of a systemic crisis. In general, the banking system was endangered because of high funding costs. Demirbank might be forced to dump T-bills into the market, causing problems, as the central bank would be slow in buying T-bills offsetting this action, as their hands were tied by the NDA ceiling. Foreigners worried about deposit runs.”

³³⁰ Market segmentation could in theory be handled without increasing NDA, by the central bank recycling liquidity from strong banks to Demirbank. But in practice there could be loss of confidence and foreign exchange outflows.

³³¹ Recall that in July 2001 the pre-announced rate of crawl (a monthly rate of depreciation of 2.1% in January 2000, gradually falling to 1% in December 2000) was to be replaced by a gradually widening band, with a width of 7.5 percent at mid-2001 which would increase a further 7.5 percentage points each half year until the lira was fully floated at the end of 2002.

³³² Krugman’s (1997) model of the Asian crisis was based on the idea that deposit insurance collapses given sufficient claims on it. In such a situation asset prices would fall from their moral hazard induced high levels, cause a decline in bank net worth, and a banking crisis. Though Krugman does not model this aspect, presumably a banking crisis could then induce a currency crisis. Chang and Velasco (1999) model currency runs as bank runs in the tradition of the Diamond-Dybvig model. Large amounts of short-term foreign debt (modeled as deposits) make bank runs possible when banks face costs to liquidate their assets, that is when bank runs turn solvent banks into insolvent ones. Cole and Kehoe (2000) model currency runs as the result of self-fulfilling doubts about the government’s ability to rollover debt in the presence of short-term debt.

³³³ Ozatay and Sak (2002) document the deterioration in bank balance sheets in 2000 in terms of increasing credit, foreign exchange, and interest rate risk. They note how banking difficulties—notably in Demirbank—could lead to rollover difficulties for the sovereign.

³³⁴ As quoted in Calomiris (2003).

³³⁵ E.g., Cottarelli (2001).

³³⁶ Ajay Chhibber and Johannes Lin (2001).

³³⁷ Gazi Ercel, at the NBER conference on the Turkish crisis in 2001 sums up all the vulnerabilities and possible triggers. "Gazi Ercel described what he called a "matrix of vulnerability" that included the exchange rate peg, the current account balance, weaknesses in the banking sector, high levels of short-term debt, capital flight, and political uncertainty. He noted that the December program, though short on capital flows, provided initial credibility gains and front-loaded actions that "gave more comfort." But he said that banking sector did not adapt itself for a disinflation program. Other, deeper weaknesses were an inability of the monetary policy rules to substitute for credibility, a relaxation of government determination after the first six months, the impact of the current account deficit on market sentiment, and an overly rapid decline in interest rates in the early stages of the program. He said confidence was also dented by a perception of overvaluation that built despite an increase in competitiveness, a continuous stream of "unwarranted criticism," misperceptions about the banking sector's foreign exchange position, non-compliance with the September stand-by review, and the fact that the "markets were open for all gossip." On the causes of the February crisis, he listed the weakening of confidence in basic policy corrections, the growing vulnerability to currency attack, worsening maturity mismatches, and increased market concern about the risks of contagion. The trigger for the crisis, however, was the conflict between president and prime minister on February, 19."

³³⁸ Deppler (2001a).

³³⁹ In addition, any tightening would be outside the budget process (Akyuz and Boratav, 2002).

³⁴⁰ A Contingency Credit Line (CCL) had been introduced in 1999, but that was a specialized facility that was to be used in the case of contagion from other capital markets.

³⁴¹ Ozkan (2003) in an examination of fundamentals ahead of the crises, also concludes that a pegged exchange rate regime should not be attempted in the context of a fragile banking sector. She emphasizes the incentives for short-term borrowing in foreign exchange stemming from the perceived fixity of the exchange rate, which accentuate vulnerabilities.

³⁴² Akyuz and Boratav (2002) have argued that a major tightening was difficult to accomplish with non-interest expenditures already at a bare minimum, but this is easily

refuted with reference to the tightening that did happen with the 2001 budget (Turkey managed a 5.5% of GNP public sector primary surplus in 2001, and began targeting 6.5% thereafter). The same is true for the argument that tightening was difficult in the absence of a budget, since as a senior IMF official noted mid-year tightening had been implemented on various occasions in Turkey, and abolishing the VAT refunds for consumers, for instance, would have yielded 0.7% of GDP and would have directly affected consumer spending.

³⁴³ Alper and Onis (2002) also make this point in a broader study of the IMF.

³⁴⁴ The term “battle plan” draws on Michael Mussa, the IMF’s Chief Economist, who, commenting on the Turkish crisis in the July 2001 NBER conference, argued that, “...an IMF program is kind of a battle plan. The key is how forcefully to respond to adverse developments. In the end, the capacity to respond was not there.”

³⁴⁵ A term used to describe the leaders of Latin programs of the late 1980s and early 1990s, who were essentially technocrats with the political savvy and cloud, such as Domingo Cavallo of Argentina and Pedro Aspe of Mexico (see Jorge I. Dominguez, 1996).

³⁴⁶ The view of the EVP for the Treasury at a large Turkish bank was that “Demirbank had sizeable losses in September, but at that stage it could have taken the loss. It was negotiating with HSBC.”

³⁴⁷ Interview with a senior banker.

³⁴⁸ Interestingly, there had been a similar situation during the Russian crisis with Baykal withdrawing his outside support to the government following a corruption scandal in the privatization of a bank in which then PM Yilmaz was implicated. This did not trigger a crisis, however.

³⁴⁹ This is not to say that liquidity management by itself caused the crisis, only that it may have exacerbated it. A top official at the IMF raised the following question in our interview: “Turkey had in the past withstood a few days of high interest rates, so it was not clear how this by itself was the cause of the crisis. Why would high interest rates have a different impact now?”

³⁵⁰ Interview with an SSMB trader.