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Capital Flows, Macroeconomic Management, and the Financial System

Turkey, 1989–97

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Between 1989–97, large private capital flows to Turkey contributed to economic growth Yet chronic and high fiscal deficits — coupled with an inconsistent financial sector regulatory framework — left the banking system and the economy vulnerable to capital flow reversals and external shocks

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Summary findings

Recent developments in a number of emerging economies have heightened interest in the relationship between macroeconomic management and financial regulation, in an environment of open capital accounts and large-scale movements of private capital.

Celasun, Denizer, and He analyze the Turkish experience with capital flows in a macroeconomy characterized by chronically high inflation and fiscal deficits. They study the relationship between capital flows, macroeconomic management, and vulnerability in the financial system.

Their analysis highlights the importance of fiscal policy in an era of large capital flows. Fiscal imbalances contributed both to real exchange rate appreciation and high real interest rates in Turkey. The high interest rates the government must pay on domestic debt have become one of the key issues of Turkey's macroeconomic management. Only by reducing its interest expenses can fiscal deficits be reduced and greater stability be achieved.

The Turkish banking system, in becoming increasingly integrated with international financial markets, has become vulnerable to shifts in market confidence. Banks borrowed abroad in response to macroeconomic imbalances to benefit from high interest rates on domestic loans and government paper. In the process, the banks have exposed themselves to interest rate risk, to foreign-exchange risk, and to large credit risks.

To reduce the Turkish economy's vulnerability to external shocks, financial regulation must be strengthened simultaneously with the achievement of macroeconomic stability.

This paper — a product of the Poverty Reduction and Economic Management Sector Unit, Europe and Central Asia Region — is part of a larger effort in the region to examine the relationship between capital flows and economic management. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Liana Nathaniel, room F3P-198, telephone 202-458-9569, fax 202-974-4396, Internet address lnathaniel@ifc.org. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/html/dec/Publications/Workpapers/home.html. The authors may be contacted at celasun@econ.umd.edu, cdenizer@ifc.org, or dhe@imf.org. July 1999. (58 pages)

Capital Flows, Macroeconomic Management, and the Financial System: The Turkish Case, 1989–97

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I. Introduction

Turkey liberalized its capital account in 1989, taking an important step in its efforts to integrate its economy with the rest of the world. Since then capital inflows increased significantly and the financial system became increasingly linked with external markets. While in most other emerging market economies financial opening was accompanied or preceded by fiscal and structural reforms, this was not the case in Turkey. The new regime began under conditions of chronic and high inflation that averaged about 70 percent in the late 1980s. Due to persistently poor public finances, this situation continued throughout the 1990s and achieving stabilization still remains a challenge. The financial sector has been operating in this unstable environment and reforms to ensure its soundness have been uneven. Liberalization of interest rates, easing entry of new foreign and local banks, and permits for new products and services in the early 1980s led to a more dynamic financial sector. However, improvements to the legal and supervisory frameworks to anticipate and deal with weaknesses in the banking system have not been fully sufficient. Transparency, consolidated supervision, orderly exit mechanisms, and accounting standards are still policy issues to be addressed.

Turkey's experience with capital flows raises interesting questions. To begin with, what factors account for capital inflows with poor fiscal fundamentals? What are the characteristics of such flows and how did they impact consumption, investment and growth? An analysis of economic management during the 1989-1997 period in general and the post 1994 crisis period in particular is also called for, in order to draw policy lessons and to offer some thoughts for a possible stabilization program. There are also important issues related to the financial sector. How did capital flows, the volatile economic environment, and regulatory policies affect the system's operations? Has the financial sector become weaker and exposed to higher currency and credit risk as a result of real exchange rate targeting policy? These are the main questions we attempt to answer in this paper. In light of the current global financial turmoil, our goal is to assess emerging vulnerabilities that relate to capital flows in the Turkish financial system.

Our overall message is that capital inflows contributed to economic growth through their positive impact on private consumption and investment, but also rendered monetary policy ineffective and inflation path unchecked, given the particular policy mix of real exchange rate targeting and high fiscal deficits. Although the authority's conscious policy in recent years of maintaining external competitiveness helped reduce the currency's vulnerability to speculative attacks, it led to an economy that lacks a nominal anchor. Capital flows also enabled the country to delay its structural reforms. The failure of successive governments to deal with structural problems resulted in the economy operating under a cloud of vulnerability, particularly in terms of the worsening debt dynamics. In other words, the underlying causes of stop-go stabilization policies, which generate considerable uncertainty about the overall policy framework, and volatile economic growth, are still present.

The overall macroeconomic situation, which sets the broad incentive structure for the operations of banks, has affected the financial sector. As a result of predictable depreciation of the currency, banks borrow at cheaper rates abroad and lend it at high rates domestically, expecting to earn more in net interest income than they lose from currency depreciation. As a result of the moral hazard created by extensive government guarantees and the lack of effective prudential regulation and supervision, the banks take on substantial risks in their interest rate exposures due to maturity mismatches, in unhedged foreign currency positions, and in potential loan losses. Such risks and the existence of large confidence-sensitive claims by nonresidents make the banking sector vulnerable to business cycles and shifts in market sentiment. Although the state banks have much less exposure in market risks, their operations are distorted by their heavy involvement in quasi-fiscal activities and the failure of the government to reimburse the banks for the subsequent "duty losses". Their losses are a major source of liquidity risk to the banking system.

The rest of the paper is organized in three main parts. First, we analyze capital flows data and the determinants of capital flows and their impact on the real sectors of the economy. Second, we consider macroeconomic management issues relating to capital flows. Thirdly, we review the interactions of capital flows with the financial sector. Section II presents the basic capital inflows and outflows data and, discusses the main characteristics of these flows and provides a decomposition of the capital account. In section III the setting for capital account liberalization and the initial conditions with regard to the key macroeconomic aggregates are presented, followed by some econometric evidence on the determinants of capital flows. Section IV discusses the effects of capital flows on consumption and investment. Section V turns to macroeconomic management issues, including the exchange rate, monetary and fiscal policies, that relate to capital flows and point out macroeconomic vulnerabilities. Section VI turns to the financial sector and analyzes banking intermediation of capital flows and issues surrounding the process. Section VII concludes.

II. The Characteristics of Capital Flows

II.1 The Record

Despite the unstable macroeconomic environment, capital inflows to Turkey increased steadily after 1990, with net capital inflows reaching more than four percent of GNP in 1996 and 1997. At the aggregate level, the volatility of capital inflows reflected the volatility in economic activity. Turkey's GNP grew by more than six percent each year in the 1990s, except in 1991 (the year of the Gulf Crisis which saw GNP growing by only 0.3%) and in 1994 (the year of a severe currency crisis when GNP contracted by six percent). In parallel, total net capital inflows were also above two percent of GNP each year, except in 1991 and in 1994, when there was a net capital outflow.

In comparative terms, the relative level (in terms of GNP) of net capital inflows to Turkey has been higher than that to Brazil before the implementation of the Real Plan, close to the level of capital inflows to Indonesia, but lower than those to Mexico and Thailand. In

terms of debt stock, at the end of 1996, Turkey's total external debt reached 43% of GNP, as compared to 24% for Brazil, 49% for Mexico, 50% for Thailand, and 60% for Indonesia.

Table 1

Turkey: Net Capital Inflows (US$ million)

	1990	1991	1992	1993	1994	1995	1996	1997
Financial Account	4,037	(2,397)	3,648	8,963	(4,194)	4,643	8,763	8,616
Direct Investment	700	783	779	622	559	772	612	554
Portfolio Investment	547	623	2,411	3,917	1,158	237	570	1,634
Equity	(45)	56	300	431	994	120	198	(42)
Debt	592	567	2,111	3,486	164	117	372	1,676
Other Investment	2,790	(3,803)	458	4,424	(5,911)	3,634	7,581	6,428
of which: short-term	3,000	(3,020)	1,396	3,054	(5,127)	2,305	5,945	1,761
Monetary Authority	(130)	(1,060)	336	1,024	1,397	1,632	1,339	1,097
General Govrnment	503	330	(1,310)	(1,953)	(2,516)	(1,991)	(2,232)	(1,406)
Banks	1,510	(2,199)	(374)	1,265	(4,612)	1,692	4,494	1,256
Other Sectors	835	(880)	1,806	4,088	(180)	2,301	3,980	5,481
Net Erros & Omissions	(469)	948	(1,190)	(2,222)	1,766	2,355	(1,782)	(2,523)

Sources: International Financial Statistics and Central Bank of Turkey.

Table 2

Turkey: Net Capital Inflows (% of GNP)

	1990	1991	1992	1993	1994	1995	1996	1997
Financial Account	2.7%	-1.6%	2.3%	4.9%	-3.2%	2.7%	4.7%	4.4%
Direct Investment	0.5%	0.5%	0.5%	0.3%	0.4%	0.5%	0.3%	0.3%
Portfolio Investment	0.4%	0.4%	1.5%	2.2%	0.9%	0.1%	0.3%	0.8%
Equity	0.0%	0.0%	0.2%	0.2%	0.8%	0.1%	0.1%	0.0%
Debt	0.4%	0.4%	1.3%	1.9%	0.1%	0.1%	0.2%	0.9%
Other Investment	1.8%	-2.5%	0.3%	2.4%	-4.5%	2.1%	4.1%	3.3%
of which: short-term	2.0%	-2.0%	0.9%	1.7%	-3.9%	1.3%	3.2%	0.9%
Monetary Authority	-0.1%	-0.7%	0.2%	0.6%	1.1%	1.0%	0.7%	0.6%
General Govrnment	0.3%	0.2%	-0.8%	-1.1%	-1.9%	-1.2%	-1.2%	-0.7%
Banks	1.0%	-1.4%	-0.2%	0.7%	-3.5%	1.0%	2.4%	0.6%
Other Sectors	0.5%	-0.6%	1.1%	2.2%	-0.1%	1.3%	2.2%	2.8%
Net Erros & Omissions	-0.3%	0.6%	-0.7%	-1.2%	1.3%	1.4%	-1.0%	-1.3%

Sources: International Financial Statistics and Central Bank of Turkey.

Table 3

Net Capital Inflows of Selected Countries (% of GNP)

	1990	1991	1992	1993	1994	1995	1996	1997
Mexico	3.3%	8.2%	7.6%	8.6%	3.9%	-4.4%	1.3%	-
Brazil	-1.3%	-1.3%	1.6%	1.8%	1.5%	4.3%	-	-
Thailand	10.8%	12.2%	8.7%	8.6%	8.7%	13.3%	10.8%	-10.0%
Indonesia	4.1%	4.6%	4.6%	3.7%	2.3%	5.3%	5.0%	0.7%

Source: International Financial Statistics.

There were a number of salient features of capital flows to Turkey. First of all, capital flows have been very much a two-way phenomenon. While inflows have been much larger than outflows, Turkish investments abroad were also substantial in a number of years. Turkish banks made large investments in foreign assets before 1994, and Turkish portfolio investments in foreign securities (particularly debt securities) reached more than one billion US dollars in 1996. Given that the current account balance in Turkey has been on average less than two percent of GNP in the 1990s, Turkey cannot be said to be a large capital net importer.

Secondly, net foreign direct investments in Turkey have been very small - it has never been more than 0.5% of GNP in the 1990s. This is a somewhat puzzling observation given that Turkey has a very dynamic private manufacturing sector, and Turkey is a major manufacturing base for a number of important multinational corporations (e.g. in the automobile industry). Thus, although there may well be a reasonably good presence of international firms in Turkey, such presence has not brought about a large financial inflow with it.

Thirdly, portfolio investments have not been as important as deposits, loans and trade credits. In most years of the 1990s (except in 1997), deposits and credits were dominated by short-term flows. Within the portfolio investment category, investments in equity securities have been less important than investments in debt securities. It is likely that such debt portfolio inflows were mostly bonds issued abroad by the Turkish government and private sector residents rather than foreign investment in domestic Treasury bills and government bonds. There is not much information available as to the magnitude of foreign investment in domestic government securities.

Fourthly, the public sector has been a net repayer to rather than a net borrower from the foreign sector, though it still holds the bulk of the external debt stock, particularly that of the medium-long term external debt.

Fifthly, foreign loans and credits made directly to non-financial private sector borrowers seem to have been more important that the loans and credits made through the banking sector. In terms of the distribution of the external debt stock, the banking sector's foreign debt had been much larger than the non-financial private sector before 1994, but the situation has changed considerably since. By the end of 1996 and 1997, the external debt stock of the non-financial private sector was twice as large as that of the commercial banking sector. It should be noted, however, that the loans and credits borrowed by the non-financial private sector have often carried guarantees by the domestic banking sector, as we shall see later. As a result the banking sector is not less exposed.

Finally, there is considerable uncertainty regarding the size of short-term flows in and out of Turkey. Apart from the fact that there have been sizable "net errors and omissions", the current account records very large unclassified invisible earnings. Whereas such items could perhaps be largely accounted for by so called "shuttle trade" before 1996, the balances

for 1996 and 1997 have been estimated with "shuttle trade" already being taken into account in merchandise exports. Therefore there could be substantial amount of short-term flows which were captured by the official statistics on "short-term" capital inflows.

In terms of the volatility of the flows, it is noteworthy that, during 1989-1997, foreign direct investments had the lowest volatility in all category of flows, whereas net errors and omissions had the highest volatility. Loans, deposits and trade credits were more volatile than portfolio investments, but most interestingly, there was no substantial difference in volatility between short-term loans and deposits and long-term loans and deposits.

Table 4

Turkey: Volatility of New Capital Flows

(Coefficient of Variation)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	89-97
Capital Account Balance	4.2	0.5	-1.6	1.0	1.0	-1.8	1.9	0.9	0.9	2.1
Foreign Direct Investment	0.6	0.5	0.5	0.5	0.6	0.6	1.2	0.9	0.9	0.8
Portfolio Investment	0.9	1.6	2.4	1.0	1.4	3.2	19.5	7.5	3.3	2.8
Other Long-term Flows	-2.6	-10.8	-4.3	-1.8	1.3	-1.9	-30.9	1.8	0.4	6.2
Other Short-term Flows	-4.1	0.7	-1.2	2.2	2.0	-0.8	2.9	0.8	3.2	5.6
Net Error & Omissions	2.0	-6.8	3.2	-2.4	-2.3	5.5	1.8	-2.0	-2.1	-15.5

Source: Own calculation based on monthly central bank balance of payments statistics.

Table 5
Turkey: External Debt
(in billions of US Dollars; end of period)

	Old Series					New Series	
	1992	1993	1994	1995	1996	1996	1997
				(By borrower)			
Medium-Long Term	42.9	48.8	54.3	57.6	59.2	64.1	69.6
Public Sector	39.8	42.8	48.2	50.0	48.8	51.1	49.2
of which:							
Consolidated Budget	25.8	28.3	30.4	31.1	30.2	31.4	30.8
State Owned Enterprises	5.1	5.4	5.5	4.8	4.4	4.9	4.7
Central Bank	6.2	6.6	8.6	10.5	10.7	10.7	10.3
Private Sector	3.2	6.0	6.1	7.6	10.4	13.0	20.4
of which:							
Banks	-	-	-	-	-	2.7	5.1
Non-financial Companies	-	-	-	-	-	10.2	14.1
Short Term	12.7	18.5	11.3	15.7	20.5	20.5	22.6
Central Bank	0.6	0.7	0.8	1.0	1.0	1.0	0.9
Deposit Money Banks	7.2	11.1	4.7	6.6	8.5	8.4	8.5
Other Sectors	4.9	6.7	5.8	8.0	11.0	11.1	13.2
				(By type of credit)			
Medium-Long Term	42.9	48.8	54.3	57.6	59.2	64.1	69.6
of which:							
Project and Program Credits	21.8	21.8	25.2	23.6	22.1	-	-
Bond Issues	9.3	12.6	13.8	14.2	14.8	-	-
Short Term	12.7	18.5	11.3	15.7	20.5	20.5	22.6
Credits	10.1	15.4	8.0	11.2	15.0	-	-
Credits for Imports	2.6	4.8	3.8	5.4	8.3	-	-
Pre-Export Credits	0.9	1.1	1.4	1.6	1.6	-	-
FX Credits to Banks	5.1	8.7	2.2	3.2	3.9	-	-
Other	1.5	0.8	0.6	1.0	1.2	-	-
Deposits	2.6	3.1	3.3	4.5	5.5	-	-

Source: Turkish Treasury.

II.2 Decomposition of the Capital Account

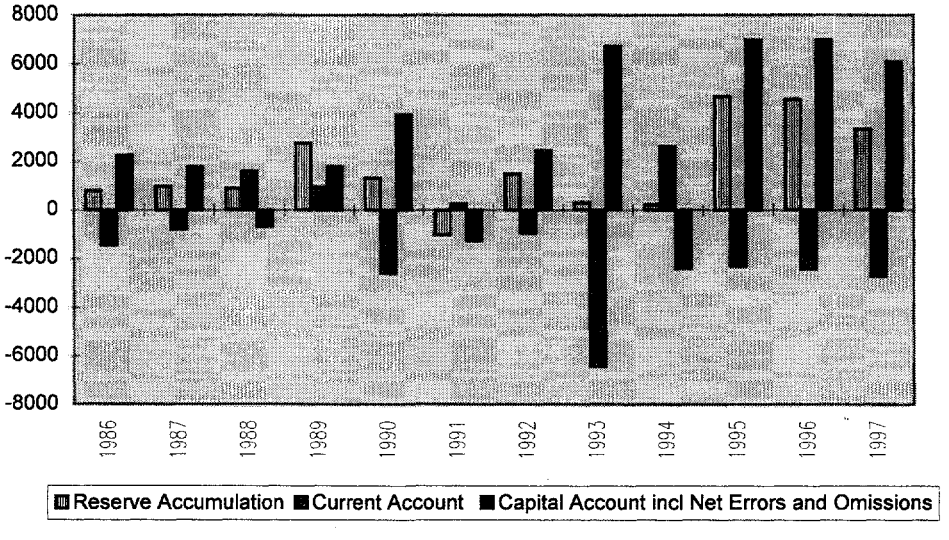
The balance of payments identity allows decomposing the capital account surplus (i.e. net capital inflows) plus statistical discrepancies , into the current account deficit , and the accumulation of official foreign exchange reserves. The current account can further be

decomposed in to the net resource balance deficit, that is net trade in goods and services, plus net factor payments and transfers. Table 6 shows the decomposition of the flows until 1997 in millions of US$, whereas Table 7 shows the decomposition as percentages of the Capital Account, inclusive of net errors and omissions. The negative sign on most of the elements of the Net Factor Payments and Transfers column in Table 6 indicates a surplus (net inflow) on the account.

Although a sharp increase in the level of the trade deficit took place after 1989, no clear pattern emerges on the allocation of the capital account among its three components in the pre 1994 period. The last three years in the table show a larger allocation to reserve growth compared to the current account. This is consistent with the post crisis policy of keeping the real exchange rate constant, which resulted in heavy foreign exchange intervention. Since inflows were particularly strong in 1995-1997, the extent of reserve accumulation has been substantial, as seen in Table 6. In the pre-crisis period, in the years which saw heavy inflows such as 1993 and 1990, larger shares were for current account deficit allocation as opposed to reserve accumulation. Chart 1 shows the evolution of the capital account and its allocation between current account and reserve accumulation.

Chart 1

Allocation Of Capital Account, Million $



The large and increasing size of recorded trade deficits of the recent years (which now include an estimate of shuttle trade) with respect to capital inflows are noteworthy. Financing of the trade deficits was made possible by the strong positive balance on the invisibles account, especially non-interest and non-tourism revenues. Part of these were likely to be short-term capital flows, which could be subject to sudden reversals. The

relatively healthy current account position of Turkey therefore relies on unrecorded flows, which may pose problems in the future.

Table 6 : Allocation of Capital Account, US $ Billions

	Capital Account Balance	Capital Account incl Net Errors and Omissions	Reserve Accumulation	Current Account Balance	Net Resource Balance Deficit	Net Factor Payments and Transfers
1986	2.1	2.3	0.8	-1.5	3.1	-1.6
1987	1.9	1.8	1.0	-0.8	3.2	-2.4
1988	-1.0	-0.7	0.9	1.6	1.8	-3.4
1989	0.8	1.8	2.8	1.0	4.2	-5.2
1990	4.0	3.9	1.3	-2.6	9.6	-6.9
1991	-2.4	-1.3	-1.0	0.2	7.3	-7.6
1992	3.6	2.5	1.5	-1.0	8.2	-7.2
1993	9.0	6.7	0.3	-6.4	14.2	-7.7
1994	-4.2	-2.4	0.2	2.6	4.2	-6.8
1995	4.6	7.0	4.7	-2.3	13.2	-10.9
1996	8.8	7.0	4.6	-2.4	10.6	-8.2
1997	8.6	6.1	3.3	-2.8	15.5	-12.7

Table 7 Allocation of Capital Account, % of Total

	Reserve Accumulation	Current Account	Net Factor Payments and Transfers	Net Resource Balance Deficit
1986	35	65	-72	137
1987	55	45	-137	182
1988	-126	226	478	-252
1989	153	-53	-288	234
1990	33	67	-176	243
1991	80	20	593	-574
1992	60	40	-294	333
1993	5	95	-115	210
1994	-8	108	282	-174
1995	67	33	-155	189
1996	65	35	-117	152
1997	55	45	-209	254

III. The Liberalization of the Capital Account and Determinants of Capital Flows

The surge in capital flows to developing countries in the early 90s are believed to be partly associated with common external factors, such as the recession in industrialized countries, and low interest rates in the United States. Yet, the countries receiving the largest share of capital flows were also those that had undertaken fundamental fiscal and structural reforms. In contrast, liberalization of the capital account and the increase in capital inflows took place against a background of considerable macroeconomic imbalances in Turkey, such as deteriorating fiscal fundamentals, and high inflation. The absence of a stronger and persistent increase in the flows to Turkey in the early 1990s as experienced in other developing countries points towards the relative importance of domestic and regional factors in determining the flows.

To better understand the determinants and effects of foreign capital inflows to Turkey, we first describe the macroeconomic setting under which capital account liberalization took place. The path of fiscal deficits was of great importance with respect to the timing of capital account liberalization, and financing patterns were in turn affected significantly by the easing of the external borrowing constraint. We will then present econometric evidence on the determinants of various components of the capital account.

III.1 Capital Account Liberalization : The Process and the Motive

After experiencing a severe debt crisis in 1978-80, Turkey abandoned its inward oriented policy stance and embarked on an export oriented growth strategy. The key elements of this change have been trade, capital account and financial sector liberalization. By the mid-1980s all quantitative restrictions on trade were lifted and only minimal controls on the current account remained.[1] The impressive export performance in the early 1980s benefited to a great extent by significant alterations in relative prices (Celasun and Rodrik,1989), which served to enhance Turkey's creditworthiness in international capital markets. Turkey maintained a competitive real exchange rate throughout the 1981-88 period, which was supported by a repressed real wage regime (Celasun, 1990, Boratav, 1990).

With increased political contestability from 1987 onwards, however, repression of real wages became politically unsustainable. The real wage boom of 1989-90 and further populist wage policies from then on had adverse impacts on Turkey's public finances, which were already burdened by a sizable external debt servicing burden in the latter half of the 1980s. The policy of maintaining a competitive real exchange rate, which helped the private sectors export performance in the mid 1980s, implied capital losses on foreign debt and a deterioration of the terms of trade of the public sector vis a vis the private sector. Failing to achieve a counterbalancing improvement in the primary stance, the government abandoned the real exchange rate rule in 1989, and after that, the exchange rate appreciated in real

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[1] The drive to liberalize foreign trade culminated in a customs union with the European Union in early 1996.

terms.[2] (See Chart 3) The appreciation of the exchange rate not only eased the servicing of foreign official debt, but the slower crawl of the exchange rate also implicitly served as a nominal anchor and helped to control inflation in an environment of deteriorating fiscal deficits.

Against this background, the move to fully liberalize the capital account started in 1989 and through a series of decrees Turkey accepted IMF's Article VIII in 1990. This marked the completion of the external financial liberalization process, which was initiated in 1984 when Turkish residents were allowed to hold foreign exchange denominated deposit accounts. While the goal of capital account liberalization was put forward as further integration with international capital markets, and in particular the European Union, Celasun and Arslan (1996) suggest that easing of the financial constraint on surging public expenditures was an important consideration underlying this decision.

Events in 1989 seem to confirm this view. In that year, chronic inflation became the major issue on the policy agenda. Aiming to limit the monetization of fiscal deficits, the Central Bank and Treasury came to an agreement to constrain the Central Bank financing to 15% of total budgetary appropriations. With the share of net external financing by the public sector also being rather limited, domestic borrowing became the main source of financing the deficits. Yet, with the exchange rate following a path of real appreciation, lending by the domestic banks to the public sector was based on a rapid build up of short term foreign debt. Ekinci (1996) notes that, with the Central Bank creating reserve money mainly against foreign reserve accumulation, and external borrowing being delegated to domestic financial institutions, short term capital inflows became the ultimate financing source of fiscal deficits.

III.2 The Determinants of Capital Flows: Some Econometric Evidence

To capture the main determinants of net capital inflows, we follow the literature and regress capital flows on a constant, the uncovered interest differential between Turkish three month T-bills and the TL equivalent of three-month LIBOR rate, and the growth rate of real GDP or the industrial production index. Estimation was done for total, portfolio and short term capital flows, using monthly data for 1990-1997 as well as foreign direct investment using quarterly data for the period 1990-1997[3]. The results are presented in Table 8.

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[2] No objective behind the move to a (managed) float from a real exchange rate targeting rule was ever officially announced. With increasing capital inflows, the feasibility of real exchange rate depreciation had decreased substantially and the Central Bank seemed not to have another option but allow for some real appreciation.

[3] Since portfolio flows are mainly composed of debt instruments placed by Turkish residents in foreign markets, foreign interest rates are likely to be most relevant measure of opportunity costs of these flows. Therefore we broke down the uncovered differential into the continued

As expected, the uncovered T-bill interest differential is significant in explaining short term capital flows. Total capital flows turned out to be significantly explained by the lagged first difference of the interest differential, not its lagged level. Growth rate of real GDP, however, does not significantly (at 10 percent level) affect short term or total capital flows. The insignificance of the growth of real GDP variable stands in contrast to some other country studies (see for example Corbo and Desormeaux 1996) and seems to be suggestive of the fact that, the most important pull factor of capital flows is the short run interest rate differential rather than growth opportunities in the economy. While capital flows do significantly affect the real variables in the economy as we discuss below, we were unable to find significant effects of the dynamics of GDP growth on short term or total capital flows.

For portfolio flows, the foreign interest rate is a significant regressor, with a negative sign. As the opportunity cost of placing debt securities in foreign markets increase, this component of capital flows are negatively affected. This is consistent with the observation that most flows in this category are debt related rather than equity investment.

For foreign direct investment, it turns out that, only the lagged real GDP growth rate is significant, other than the constant. This is an expected result, because these types of flows are necessarily longer term, and not related to short run arbitrage opportunities in the financial markets.

LIBOR rate and the US equivalent of the T-Bill rate, and included these two in our regression.

TABLE 8

Dependent Variable: Total Capital Flows (TCF)

Variable	Coefficient	T-Statistic
c	234	3.18**
TCF(-1)	0.40	4.06**
ΔUIP(-1)	4794	2.62**
G(-1)	803	1.20
R^2= 0.23	Durbin-Watson Statistic= 2.18	F-Statistic=8.00 (P-value=0.00)

Dependent Variable: Short Term Capital Flows (STC)

Variable	Coefficient	T-Statistic
c	67	1.20
STC(-1)	0.42	2.35**
UIP(-1)	2199	1.76*
G(-1)	131	0.21
AR(1)	-0.16	-0.81
R^2= 0.13	Durbin-Watson Statistic= 2.09	F-Statistic=2.94 (P-value=0.03)

Dependent Variable: Portfolio Flows (PI)

Variable	Coefficient	T-Statistic
c	57798	2.09**
PI(-1)	0.02	0.17
LIBOR(-1)	-56234	-2.04**
TB3(-1)	-1181	-1.57
G(-1)	-66	-0.19
R^2= 0.09	Durbin-Watson Statistic= 1.94	F-Statistic=1.99 (P-value=0.10)

Dependent Variable: Foreign Direct Investment (FDI)

Variable	Coefficient	T-Statistic
c	162	5.82**
FDI(-1)	0.02	0.13
UIP(-1)	9.96	0.13
G(-1)	142	2.56**
R^2= 0.23	Durbin-Watson Statistic= 1.78	F-Statistic=2.60 (P-value=0.07)

Note: **: Significant at 5 %, * :Significant at 10 % .

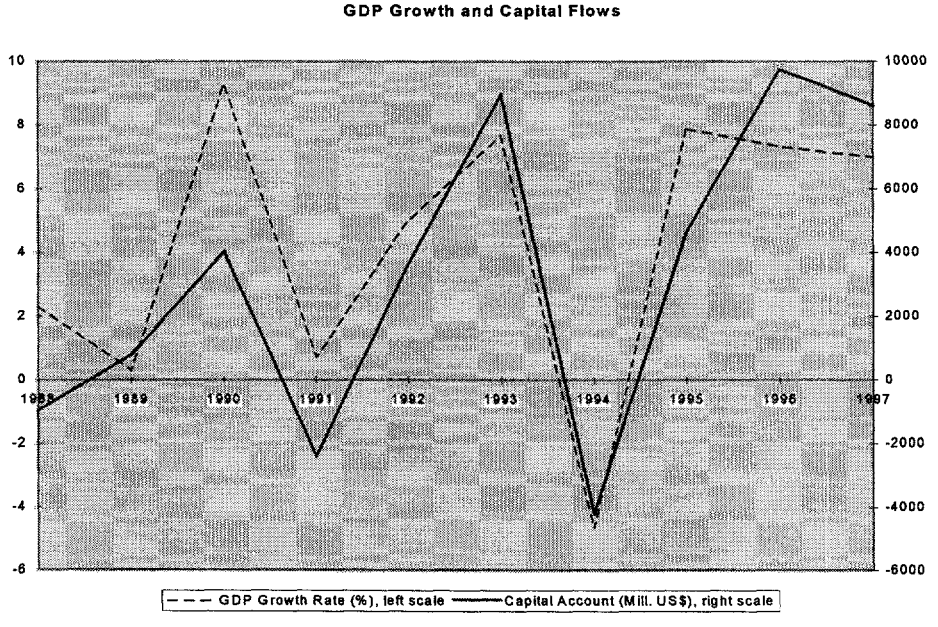
IV. Impact Of Capital Flows On the Real Economy

Capital flows and macroeconomic developments clearly have impacts on one another through various channels. For example, the high growth rates of GDP in the most recent

years are by and large associated with growth in private consumption expenditure biased towards durables, and also private investment, which increased demand for imports of intermediary goods and external financing.[4] Increased capital inflows due to financial developments may stimulate aggregate demand by increasing the stock of loanable funds in the financial system, and domestic credit. In Turkey, the path of economic growth has been closely associated with the amount of capital inflows. (See Chart 2).

We attempt here to analyze whether capital flows have an independent impact on different components of aggregate demand, once other standard determinants are controlled for. In doing so, we follow the approach of Kamin and Wood (1997) applied to the case of Mexico, and a cross section of other Pacific Basin countries. We estimate separate econometric models relating consumption and investment to a standard set of determinants, and capital inflows. We also attempt to distinguish the effects of capital flows on various breakdowns of aggregate demand, such as private and public consumption, and private and public investment.

Chart 2



IV. 1 Consumption

We use a standard set of easily quantifiable determinants of consumption in our consumption equations. While consumption should be positively related to income, and negatively to the real interest rate, the availability of credit may also be positively related to

[4] See SPO (1998).

consumption. Here, we used real M2 (inclusive of foreign currency deposits) as a proxy for the stock of bank loans. We also add the capital account to our equation. Since capital flows are assumed to affect real variables indirectly through their effect on interest rates and the availability of credit, the inclusion of these variables in the regression would be expected to reduce the coefficient on capital flows. The basic equation we estimate is as follows:

$$(1) \qquad C = \beta_0 + \beta_1 GDP + \beta_2 rir + \beta_3 M2 + \beta_4 KA + \varepsilon$$

We estimate this equation for private and public consumption separately, using quarterly data for the period 1987-96. The first column in Table 3 shows the estimated coefficients when the equation excludes real M2.[5] While real income and capital flows are very significant and positive, the real interest rate is found to negatively effect private consumption. The broad results are not significantly altered when real M2 is added to the equation, as seen in the second column. Real M2 enters the equation with a significant positive coefficient. When the availability of credit as proxied by real M2 is controlled for, the significance of the real interest rate declines, but not by a large extent. Interestingly, the results are altered considerably when public consumption is considered.

While one would expect that easier financing due to capital inflows would increase public consumption, the effect of capital flows on public consumption are insignificant. The results are shown in the last two columns of Table 10. The inclusion of real M2 does not alter this result. Although the real interest rate becomes significant along with real M2, capital flows are still insignificant. We estimated error correction versions of the equations as well, and finally estimated a parsimonious version of the equations, removing insignificant explanatory variables. The results are broadly the same: private consumption is positively related to capital flows, but public consumption is not. The results are in Table 11.

---

[5] The estimation method used was maximum likelihood allowing for an AR(1) error structure.

Table 10 Results for Real Consumption

Dependent Variable	Private Consumption		Public Consumption	
	Without M2	With M2	Without M2	With M2
Constant	4211	2244	334	-23.10
	(7.81**)	(3.47)	(2.11**)	(-0.19)
Real GDP	0.49	0.49	0.06	0.04
	(24.96**)	(22.42**)	(7.68**)	(3.64**)
Real Interest Rate	-1870	-1321	-703	-2188
	(-2.23**)	(-1.72*)	(-1.58)	(-5.10**)
Real M2		2.26E-09		1.08E-09
		(2.67**)		(3.82**)
Capital Account	0.13	0.13	0.004	-0.02
	(2.96**)	(3.10**)	(0.20)	(-
AR(1)	0.69	0.51	0.94)	
	(4.76**)	(3.12**)	-0.62	-0.72
			(-5.03**)	(-
			5.92**)	
R^2	0.97		0.97	0.51
0.65				
Durbin-Watson Statistic	2.26		2.05	2.08
1.80				
F-Statistic	266		237	8.69
12.08				
p-value of F-Statistic	0.00		0.00	0.00
0.00				

Note : T- Statistics in parentheses. * :significant at 10% level, **:significant at 5% level

Table 11 Results for Real Consumption, Error Correction Version

Dependent Variable	Change in Private Consumption	Change in Public Consumption
Constant	936	665
	(1.23)	(0.94)
Real GDP(-1)	-0.05	-0.03
	(-1.33)	(-0.82)
Real Interest Rate(-1)	2288	-1118
	(1.26)	(-0.67)
Capital Account(-1)	0.08	0.038
	(1.28)	(0.61)
ΔReal GDP	0.47	0.019
	(15.8**)	(0.69)
ΔReal GDP(-1)	0.09	0.09
	(4.37**)	(4.58**)
ΔCapital Account	0.17	0.03
	(3.06**)	(0.59)
R^2	0.98	
0.62		
Durbin-Watson Statistic	2.39	3.15
F-Statistic	292	8.44
p-value of F-Statistic	0.00	0.00

Note : T-Statistics in parentheses. * :significant at 10% level, **:significant at 5% level

IV.2 Investment

Our results for investment seem less robust to specification. We still use the three monthly deposit rate as a proxy of the opportunity cost of funds, due to the lack of reliable lending rate data. Although the levels of lending and deposit rates are different, the variation in the deposit rate would be expected to track the variation in the lending rate reasonably well. The results of the basic equation estimation for private fixed capital formation are in the first two columns of Table 12. Though the capital account does not significantly affect private fixed capital formation whether real M2 is included or not, the real interest rate becomes significantly negative only when it is included. But the sign of the coefficient of real M2 is negative, which is not plausible. The results for fixed capital formation by the public sector, as shown in the last two columns of Table 11 are not different. Capital flows do not significantly enter any of the two equations, while the implausible sign on real M2 persists.

Error correction versions of the estimation are summarized in Table 13. It can seen that public investment still is not related to capital flows, but capital flows, in past level, or past changes, do effect private fixed capital formation. Based on the error correction

specification results, we can not reject the significant effect of capital flows on private investment, although the effect is not as clear as it is for consumption.

Table 12 Results for Real Fixed Capital Formation (FCF)

Dependent Variable	Private FCF		Public FCF	
	Without M2	With M2	Without M2	With M2
Constant	3180	80134	969	-1551
	(2.72**)	(0.03)	(2.43**)	(3.88**)
Real GDP	0.08	0.08	0.04	0.09
	(4.60**)	(5.13**)	(2.5**)	(4.12)
Real Interest Rate	810	-152	-6089	-4616
	(0.78)	(-0.14)	(-3.40**)	(-2.74**)
Real M2		-3.08E-09		-1.9E-09
		(-1.65)		(-2.85**)
Capital Account	-0.01	-0.04	-0.03	0.007
	(-0.19)	(-0.82)	(-0.58)	
AR(1)	0.91	0.99	(0.14)	
	(12.4**)		-0.40	-0.52
	(16.81**)		(-2.25**)	(-3.08**)
R^2	0.88		0.89	0.22
0.37				
Durbin-Watson Statistic	1.90		2.15	1.59
1.51				
F-Statistic	61.8		51.3	2.44
3.89				
p-value of F-Statistic	0.00		0.00	0.07
0.01				

Note : T-Statistics in parentheses. * :significant at 10% level, **:significant at 5% level

Table 13 Results for Real Fixed Capital Formation Error Correction Version

Dependent Variable	Change in Private Fixed Capital Formation	Change in Public Fixed Capital Formation
Constant	1517	2473
	(4.25**)	(3.95**)
Real GDP(-1)	-0.07	-0.12
	(-4.76**)	(-4.36)
Real Interest Rate(-1)	3024	1763
	(3.06**)	(1.02)
Capital Account(-1)	0.13	0.11
	(2.56**)	(1.29)
ΔReal GDP(-1)	-0.007	0.15
	(-0.57)	(6.65**)
ΔCapital Account(-1)	0.10	-0.05
	(2.16**)	(-0.61)
R^2	0.72	
0.58		
Durbin-Watson Statistic	2.18	2.83
F-Statistic	16.6	9.30
p-value of F-Statistic	0.00	0.00

Note : T-Statistics in parentheses. * :significant at 10% level, **:significant at 5% level

V. Macroeconomic Management During Capital Flows

As already indicated earlier, Turkey opened up its capital account under conditions of large fiscal imbalances and high and chronic inflation in sharp contrast to the experience of East Asian and most Latin American countries. What were the effects of these inflows on important variables such as the exchange rate and interest rates, and how did Turkey manage its economy under these circumstances? In this section we first review the evolution of exchange rates and consider how they interacted with the overall economy. Next, we review fiscal and monetary policies with a view to assessing whether there was an internal consistency among these policy tools given the capital inflows and the openness of the economy.

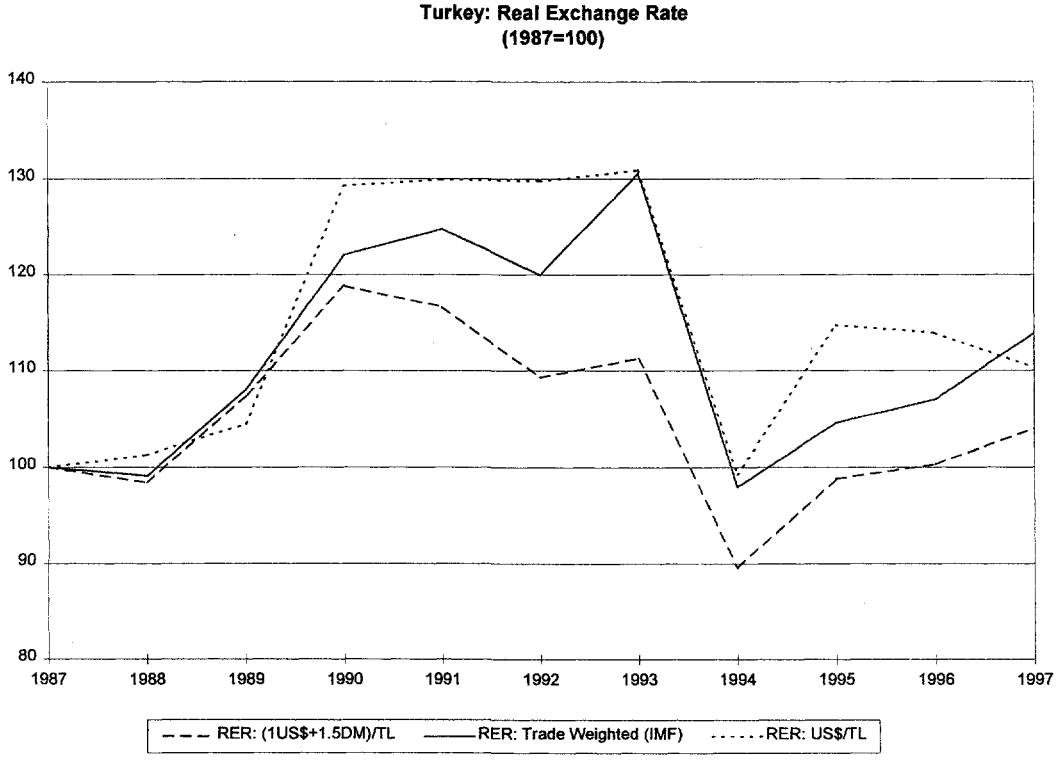
V. 1 Capital Flows and the Exchange Rate

The recent literature on capital flows to developing countries has shown that capital inflows are associated with the appreciation of the real exchange[6]. To consider the evolution

[6] See for example Calvo, Leiderman and Reinhart (1993), (1996),and Fernandez-Arias and Montiel (1995).

of the real exchange rate Chart 3 plots three series. Like many Latin American countries that experienced heavy capital flows, it is clear that Turkey also experienced real exchange rate appreciation[7]. The abandonment of the real exchange rate rule in 1989 coupled with liberalization of the capital account indeed led to sharp real appreciation during 1989-90 which continued at a more moderate scale until 1994. With no fiscal adjustment and the persistence of high inflation, choosing the exchange rate (governed with a managed float) as an implicit nominal anchor inevitably led to such real appreciation when combined with capital inflows. This policy process backfired when further deterioration of the fiscal stance combined with government's attempt to control interest rates on its domestic bonds-a fundamental policy error when capital account is open-led to a correction of the real exchange rate in the 1994 financial crisis, which is clearly visible in Chart 3.

Chart 3



The response to the crisis was a stabilization program announced on April 5, 1994, which was supported by a three year stand-by arrangement with the IMF. Demand for

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7 Capital flows are believed to cause exchange rate appreciation insofar as the increased domestic absorption associated with the capital flow from abroad puts pressure on the non traded goods sector, and increase its relative price.

Turkish Lira denominated assets recovered due to very high real interest rates in the second quarter of 1994. The program, however, had only short term success in meeting the fiscal adjustment targets. Exchange rate targets were announced from mid 1994 to mid 1995, and foreign borrowing resumed in early 1995. With political tensions and early elections taking over the agenda in late 1995, the program was not implemented and the last tranche of the Stand-by was never disbursed. That marked the return of the real exchange rule back on to the policy agenda.

Central Bank credit to the Treasury was gradually phased out in the post crisis period. The Central Bank, having achieved greater independence, has chosen the relative stability of the real exchange rate as its objective. In the absence of any lasting structural and fiscal adjustment in the aftermath of the crisis, this policy has served to reduce uncertainty in the foreign exchange market and maintain competitiveness of the export sector. In our view, another important objective was to mitigate the build up of excessive short term foreign debt associated with arbitrage opportunities that arise due to real appreciation in an uncertain environment.

It is interesting to note the differences in the three real exchange rate series in the chart above. The trade weighted series show a much more appreciated real exchange rate in 1993, before the crisis, consistent with the observation that currency crises are often preceded by steep exchange rate appreciation[8]. The same series also indicates a slightly larger upward change (appreciation) in the real exchange rate index since 1994. The post 1995 stability of the US$-TL real exchange rate index compared to the other two indices is also noteworthy. The Central Bank, mainly intervening in the market for US dollars, seems to have been more successful in keeping this index constant. With a strengthening US dollar, the TL has appreciated against the currencies of Turkey's main trade partners. The appreciation in the latter half of 1997 was partly due to a conscious strategy by the Central Bank to minimize potential speculation against the TL during the East Asian crisis.

Preliminary data suggest that the appreciation of the currency in real terms in the first half of the 1998 was around 8-10%. However, it appears that the rate of nominal depreciation in the last quarter of 1998 picked up and it is possible that real appreciation for the whole year could be below 8 percent. It must also be noted that the Central Bank's intervention in the foreign exchange market has been instrumental in avoiding a larger real appreciation of the currency. As our analysis of the decomposition of capital flows in section II.2 showed, the Central Bank's accumulation of reserves over the 1995-1997 period was quite large, which was consistent with its constant real exchange rate policy. While not much is known about the long run equilibrium exchange rate for Turkey at present, the overall post 1995 appreciation is indicative of the difficulties in attaining a constant real exchange rate by the Central Bank when capital flows in and there are serious fiscal imbalances at the same time.

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[8] See Kaminsky and Reinhart (1996)

Apart from the direct effects of capital inflows on exchange rates, there are other possible indirect effects that need to be pointed out. As a result of exchange rate and fiscal policies becoming increasingly inconsistent with each other, the currency steadily appreciated prior to the 1994 crisis (Chart 3) and this real appreciation was associated with a stronger import boom and a relatively weak effect on exports. That an expected future devaluation (due for example to inconsistent government spending versus the managed exchange rate regime) can lead to a consumption boom is a well established result in the theoretical literature, and implies a temporary surge in imported goods demand, which results in increased home good demand and a real appreciation.[9] Elements of this "temporariness" hypothesis seem to be present in the pre-1994 crisis experience. Another mechanism seems to have the wealth and income affects that has been due to the domestic and asset yield differentials, which we found in section III.2 to be the key factor pulling capital inflows to Turkey. To the extent that such effects led to a higher demand for non-traded goods, the real exchange rate would tend to appreciate.

V. 2 Financial Integration and Interest Rates

The liberalization of the capital account established a strong link between domestic and external markets and this was expected to lead to a convergence of local and foreign interest rates. However, over the last decade and particularly after the 1994 crisis, domestic ex-post real rates have diverged significantly from foreign rates which were the main cause of capital inflows as shown in section III.2. Chart 4 compares three month T-bills real rates in TL (i.e., after adjusting for inflation), three month T-bill return in US$ (i.e., after adjusting for lira depreciation), and the LIBOR. It is clear that Turkish rates, ex-post, have been high by international standards since 1989. It is also visible that there has been a large volatility and in a few occasions returns have been negative in real terms. While high real rates have been a source of concern, the discussion in Turkey has rarely been in an open economy context and policymakers often ignored or did not fully grasp the implications of open capital account for interest rate determination - lack of such an understanding was the reason behind the policymakers attempt to manipulate the auction rates of T-bills in 1993/1994 which triggered the currency crisis.

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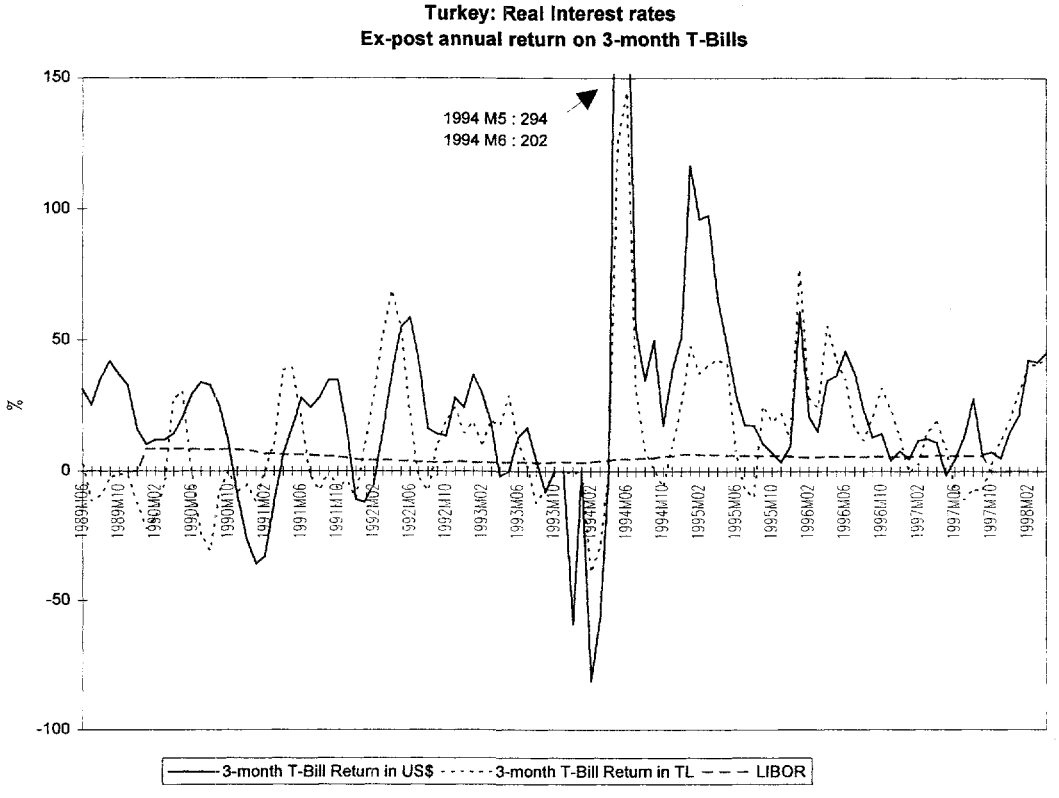
[9] See Calvo and Vegh (1993).

Chart 4



Given the openness of financial markets in Turkey, the starting point is the uncovered interest parity condition. It states that with no barriers to capital mobility, risk neutrality, and no country risk, returns for similar types and maturity of assets would be equalized through arbitrage, and deviations from parity will be unpredictable and white noise (Frankel & Okongwu 1995, Edwards, 1998). The fact that there maybe restrictions or taxes on capital flows, and there are foreign exchange and country risks can put a wedge between domestic and foreign rates, which will leave investors indifferent between holding foreign and domestic instruments. This portfolio equilibrium differential can be expressed in real terms as:

$$R(TR) = R(US) + R + TX + U(t)$$

where R(TR) and R(US) are real interest rates in US$ terms in Turkey and abroad (US or euro dollar market) respectively, R is the risk premium, which can be further decomposed into the country premium, i.e. the compensation for holding claims on a country that is perceived to be riskier than claims on the US; and the exchange rate risk premium, i.e., the compensation for holding currencies that are perceived to be riskier than dollars. TX is tax equivalent of any restrictions of capital inflows, and U(t) is an iid random variable.

Using the condition above, it is possible to gain a perspective on interest rates in Turkey. It is clear from this condition that real rates in Turkey must naturally be higher than world interest rates by at least the country risk premium, the exchange rate risk premium, the tax equivalent of any restrictions on capital flows (very little in the case of Turkey), and any further premium that may be due to random shocks, such as the current global turmoil.

The differential between nominal interest rates and the rate of depreciation minus the LIBOR rate could provide some idea about the magnitude of the risk premium. Calculations using this method show that risk premium has been high and ranged between 9-30 percent after 1994, with an average of about 15 percent. Of the total risk premium, the country risk premium (which covers the risks of default and non-convertibility, etc.) can be proxied by the spreads of Turkish euro dollar bonds over comparable (in terms of maturity and coupon rates) US Treasury bonds. Such spreads averaged between 200 basis points for three year bonds to 400 basis points for ten year bonds in 1997. Clearly, the country risk premium was not the dominant factor in the determination of the total risk premium. Instead, the exchange rate risk or policy risk premium has been the major factor in the determination of real rates in Turkey.

The inability of successive governments to sustain a strong fiscal adjustment program, stop-go attempts with stabilization, political fragmentation all factor into the risk premium and keep real rates high. The erosion of primary budget surpluses in 1997 that Turkey managed to maintain during the post-1994 period needs to be seen in this context, which has the effect of raising risk premium. Last but not least, there is the possibility of a large and sudden jump depreciation of the TL. A policy error, such as the one that triggered the 1994 crisis, can lead to a large depreciation for which markets build a margin in the domestic level of interest rates. The implication of this analysis is that a consistent policy framework, supported by reduced political uncertainty and enhanced structural reforms, is the key to lowering real interest rates in Turkey.

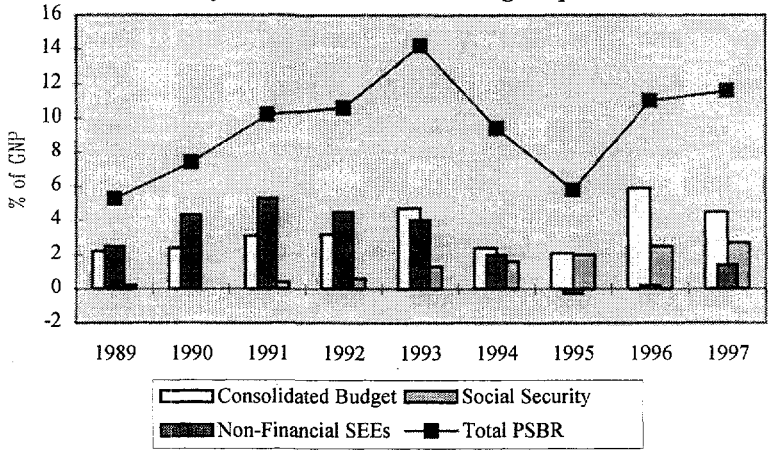
Finally, there is the random shock factor which can be significant in the determination of real interest rates. The current global crisis is a good example of such shocks and Turkey is already feeling the effects of this type of a situation. Nominal interest rates rising to the 150 percent level (implying a real rate of close to 50%) and sudden reversal of capital flows, about US$7-10 billion since the Russian crisis, are a manifestation of these shocks. It is also possible that international markets can deny access to fresh borrowing or it could take place at very expensive terms. This has serious implications for macroeconomic management in Turkey. It would imply the loss of one major source of financing of deficits. This will have the effect of increasing domestic rates even further. The problematic fiscal situation complicates the policy response to such events and is a clear indication of the costs of not addressing fundamental problems in good times.

V. 3 Public Finances and Fiscal Policy

As we indicated in the opening of the paper, since Turkey opened up its economy through a series of reforms in the 1980s, establishing fiscal discipline has been a key policy challenge. Capital flows to Turkey have been associated with large public sector borrowing requirements and over time external flows became increasingly important in financing the deficits. This situation distorted the flow of funds in the domestic financial system in favor of the public sector. The large borrowing requirements have also been associated with growing share of interest payments, and large turnover of domestic debt. While a significant portion of capital account have been short term borrowing and short term portfolio flows, a predominant share of domestic public debt has been of short term maturity. This problem in turn has been affecting all dimensions of policy management in Turkey's open economy. Charts 5-7 summarize the evolution of key variables.

Chart 5

Turkey: Public Sector Borrowing Requirement



Note: Consolidated budget balances were before transfers to SEEs and Social Security institutions

Chart 6

Turkey: Consolidated Budget Deficits

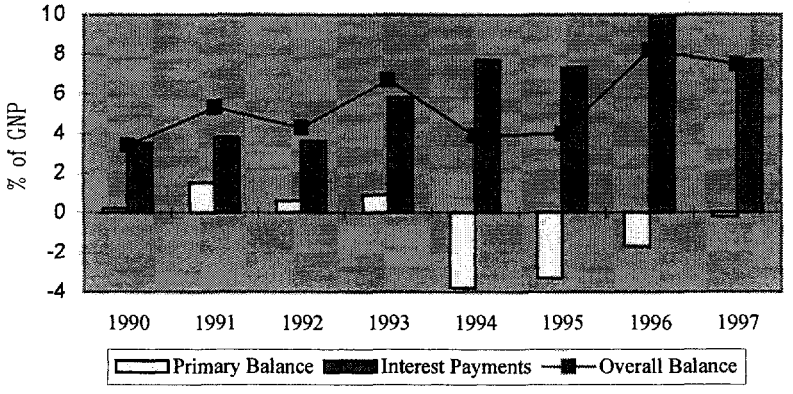
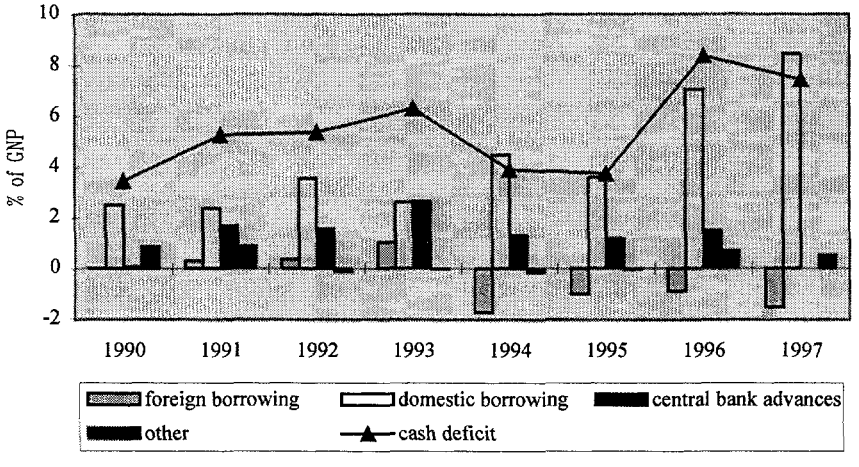


Chart 7

Financing of the Budget Deficit



It is clear from the charts above that the fiscal stance until the 1994 crisis was on a worsening path. After 1991, the primary stance of the government worsened, which contributed to the risk premium in real interest rates, and the budgetary burden of interest payments increased considerably. Both in 1992 and 1993 the primary budget balance was negative and PSBR started to increase rapidly, coming close to 12 percent of GNP. Rather than reducing expenditures, in mid-1993, the government started to resort to heavier Central Bank financing of the deficits, as interest payments were identified as a potential area for savings. Despite the deterioration in fundamentals, the government refused to pay higher interest rates in the debt auctions in late 1993, and canceled several auctions altogether.

The inconsistent mix of government policies in 1993 triggered devaluation expectations, a domestic demand led boom, and worsened export performance and trade deficit. When the crisis erupted in the first quarter of 1994, there was a massive outflow of capital, and the Turkish Lira depreciated by almost half in nominal terms. Turkey managed to cut some of the expenditures and a sizeable primary surplus was achieved in 1994. While in 1995 and 1996 the Government was able to maintain a primary surplus position as shown in chart 6 above, by 1997 these were largely eroded. Preliminary data suggests primary surplus will be around 4 percent of GNP in 1998 thanks to higher revenues due to a new tax law. While this is a welcome development as it is a key condition for fiscal sustainability, it is not clear how long it could be maintained.[10] Structural reforms to maintain a sound fiscal

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[10] An important issue that needs to be mentioned here is the measurement of public sector deficits. The fiscal data discussed above refers to the consolidated budget which excludes quasi-fiscal operations of public banks. As shown by Atiyas et.al (1998), consolidating these into public sector accounts and netting out intra-governmental debt change the primary balance situation significantly. This strongly suggests that policies for fiscal adjustment to ensure consistency between debt and inflation targets should be based on properly defined consolidated public sector accounts.

continued

policy stance are not yet in place, and no significant reduction in the risk premium is near in sight.

A more formal analysis of the interactions of fiscal policy and other key variables is undertaken by Agenor, McDermott, and Ucer (1997) which confirms the above analysis. They present empirical evidence on the effect of capital flows, government spending, and interest rate differentials on the real exchange rate in Turkey for the period 1987-95. They show that domestic macroeconomic conditions that lead to certain domestic and foreign asset yield differentials result not only in endogenous capital flow responses, but also wealth and income effects in the domestic economy, which tend to impact the real exchange rate. While their results imply an independent effect of capital flows on the exchange rate, they also highlight a common factor underlying both capital flows and real exchange rate appreciation, namely positive shocks to yield differentials, induced by fiscal policy.

V. 4 Capital Flows and Monetary Policy

The main development on the monetary front has been the gradual but steady decline of the effectiveness of monetary policy and the loss of control of the Central Bank over monetary aggregates. The high level of dollarization, and the high liquidity and short-term maturity of T-bills have markedly eroded the potential effectiveness of monetary policy, particularly with the increasing repo activity (more on this in the section on banking). Against a background of chronic inflation, the share of foreign currency denominated bank deposits have increased as a share of broad money, reaching almost 50 percent at the end of 1997.[11] (See Chart 8). The share of reserve money to GDP was less than a low 5 percent of GDP in 1997, compared to an average of 10 percent for the OECD countries. The small size of the monetary base makes a monetary expansion -due to increased credit to the Treasury or due to foreign exchange purchases - more inflationary. The twelve month growth rate of reserve money, the nominal exchange rate and the consumer price index (CPI) are shown in Chart 9.

The broad policy objectives of the Central Bank of Turkey have been somewhat different in the pre and post 1994 currency crisis episodes. While the real exchange rate appreciation of 1989-94 eased inflation somewhat, the Central Bank was not able to control its balance sheet during these years, due to its important role in financing the Treasury. Overall credit increase to the public sector constituted the main source of Reserve money

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[11] Turkish residents are allowed to hold foreign currency denominated bank accounts since 1984.

growth prior to 1994. (See Chart 10 on the Sources of Reserve Money Growth) In the aftermath of the 1994 crisis, the Central Bank took a more passive stance and the main objective of the Central Bank has been to maintain stability in the financial markets. Up to September 1995, the Central Bank was committed to a certain ceiling on exchange rate depreciation, actively using interest rates as an instrument.[12] As stated earlier, between late 1995 and early 1998, the Central Bank's main focus has been the stability of the real exchange rate. This policy has attained a decline in overall vulnerability to a balance of payments crisis at the expense of a higher level and inertia of inflation.

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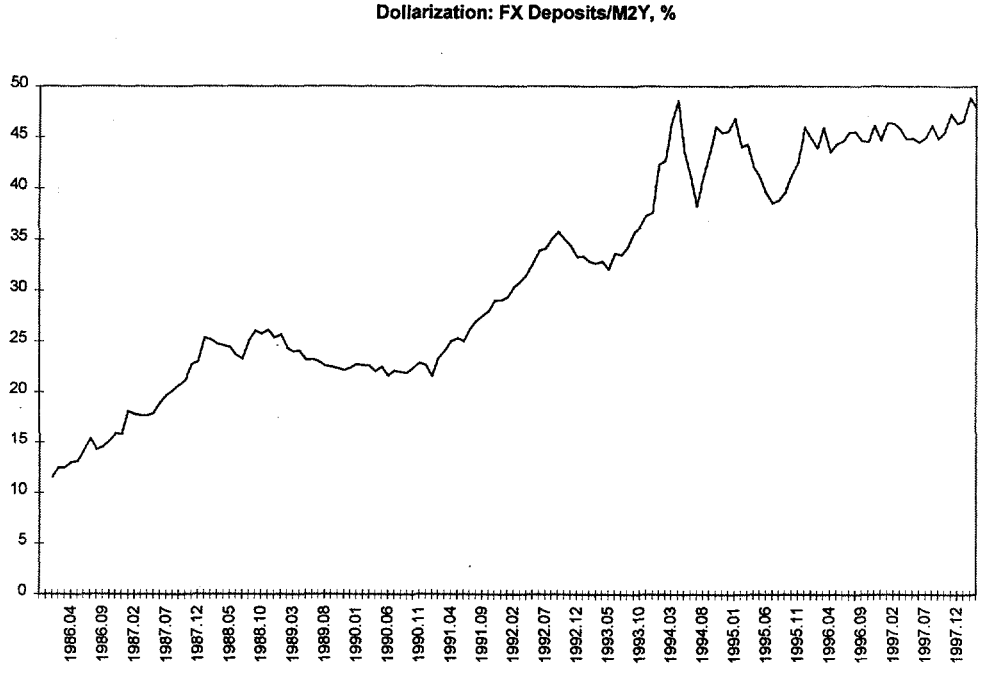
[12] Demand for TL recovered sharply after the second quarter of 1994, due to very high yields on government paper, and very slow crawl of the exchange rate.

Chart 8



Note: M2Y is M2 plus foreign currency denominated deposits of residents

Chart 9

Growth of Reserve Money, Exchange Rate and CPI Index, %

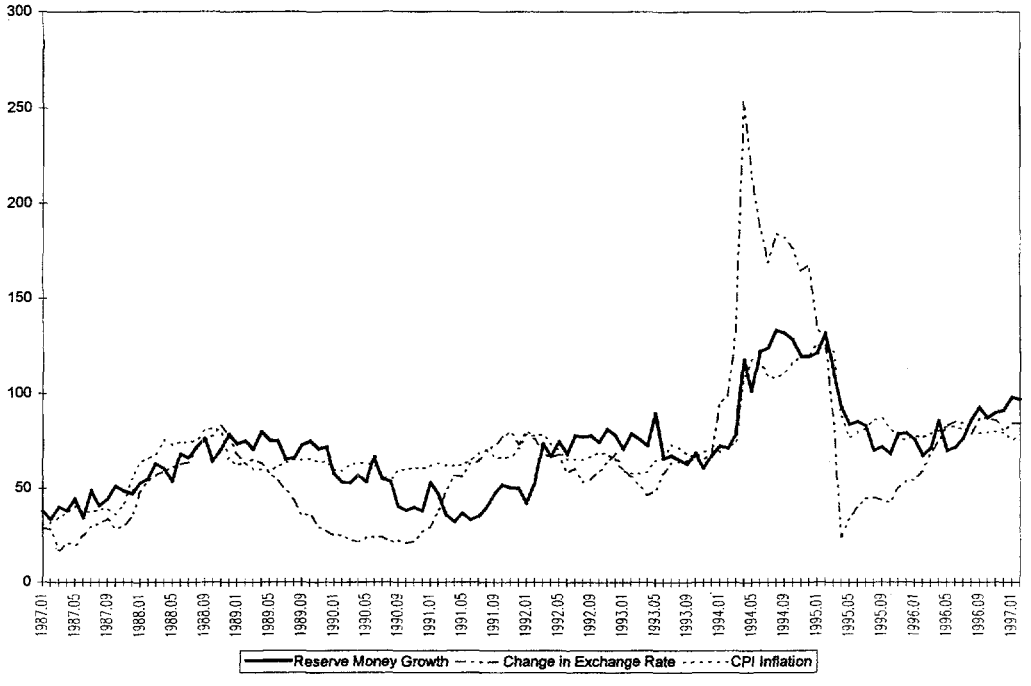
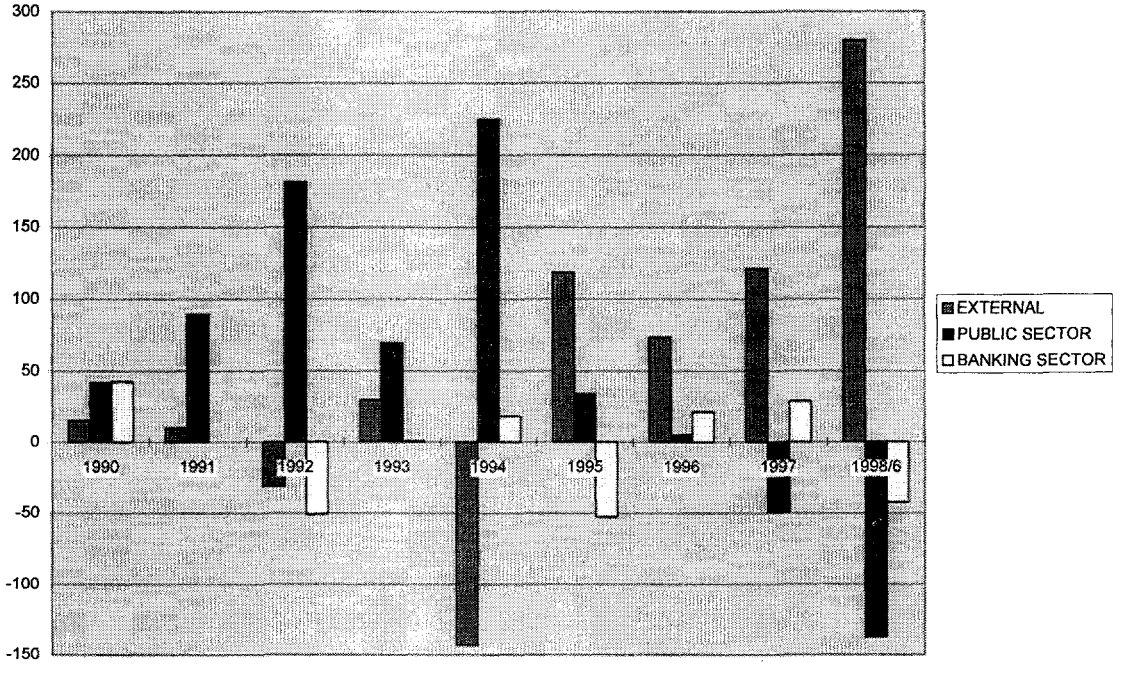


Chart 10

Central Bank of Turkey: Sources of Reserve Money Growth, %



Note: External=Foreign assets-FX liabilities to non-residents-FX liabilities to banks
Public sector=Credits to public sector+Other items+Revaluation account-FX deposits of Treasury-Public sector deposits
Banking sector=Credits to banks-Liabilities due to open market operations
Source: Central Bank of Turkey.

Sterilization of Capital Flows

Whether the Central Bank engages in active sterilization of reserve flows by offsetting changes in net domestic assets can be assessed by estimating a policy reaction function, which relates a measure of monetary policy, including its net domestic assets (NDA) to the change in net foreign assets (NFA) of the central bank. The estimation of such a function is complicated by the fact that there are two-way simultaneous interactions between these variables when a Central Bank is engaged in sterilized intervention, calling for instrumental estimation. Here, we follow the methodology of Cumby and Obstfeld (1983) to estimate the Central Bank sterilization reaction function, with consideration of the endogeneity problems. We also take into account the time series properties of the variables in the regression, as proposed by Siklos(1996).

Our dependent variable (MP) is the change in Central Bank domestic assets, which includes the revaluation account and is adjusted for reserve requirements. The revaluation account is included in this variable, and excluded from the foreign assets, since the decision

to monetize capital gains on foreign reserves (to finance the Treasury for example) is a discretionary change in domestic credit. Changes in minimum reserve requirements enter the measure of domestic credit policy, so as to incorporate the effect of these changes on the amount of deposit money the base supports.[13]

Other than the balance of payments, changes in NFA, the reaction function allows MP to respond to various other variables. These are LEPPI, (log of) real exchange rate index calculated using the TL/$ exchange rate and the producer price index, LRGDPSA, the (log of) real GDP, seasonally adjusted, DEFSA, consolidated government's deficit, seasonally adjusted.[14] Augmented Dickey Fuller tests indicated that MP, NFA, LEPPI and LRGDPSA were nonstationary, moreover, cointegration tests (allowing for deterministic interventionist dummies to account for possible structural breaks) resulted in a plausible cointegrating relationship among the I(1) variables. This long run cointegrating relationship is included in our first differences specification as the error correction term, EC.

Another issue to be addressed is the simultaneity between NFA and MP, due to the capital account offset and sterilization attempts. Moreover, the conditioning variables themselves may be affected by a policy change in the NDA as well. Therefore, estimation was carried out using two stage least squares, for the period 1990:02 to 1996:06. The results, together with the list of instruments, are in Table 9. The sterilization coefficient is a statistically significant -0.37. Given that the lags of NFA (initially 3 were included) proved insignificant, it seems about 37 percent of reserve flows were sterilized within a month, and this was all the sterilization that took place.

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13 See Cumby and Obstfeld (1983) for a thorough derivation of the measure.

14 Seasonal adjustment is done on DEF and LRGDP as the other variables did not show signs of seasonality. The method used is X-11 (additive). Given the big increase in the deficit in 1994 (which could be viewed as a structural break), its seasonal adjustment was done by splitting the sample in to two, and separately adjusting both parts.

Table 9 : Dependent variable: ΔMP

Variable	Coefficient	T-Statistic
C	14.21	4.36**
ΔMP(-1)	0.34	1.91*
ΔMP(-2)	-0.31	-1.53
ΔNFA	-0.37	-4.45**
ΔLEPPI	252.1	2.38**
ΔLRGDPSA(-3)	223.1	1.75*
ΔDEFSA	-0.60	-1.87*
ΔDEFSA(-1)	-0.70	-1.80*
EC(-1)	-0.03	-2.03**
R^2		0.67
Durbin-Watson Statistic		1.97
F-Statistic		15.10
p-value of F-Statistic		0.00

Note: Instrumental variables used were : a constant, monthly dummies, three lags of the dependent and conditioning variables, 6 lags of NFA, uncovered interest parity and three lags of it.

Our result basically reflects that, although the Central Bank has ventured to sterilize the effect of capital inflows on the monetary base at times, this has not been the focus of monetary/domestic credit policy. The role of public sector deficit financing has been the main preoccupation of monetary policy during most of the period under study. Given the large borrowing requirement of the public sector (which is sizable with respect to the domestic financial system) the Central Bank has often been reluctant to drive interest rates up by squeezing liquidity. In the same vein, complete sterilization has been avoided due to the already high pressure of the borrowing requirement on the markets.

Our view is that, having a more defensive stance on the exchange rate in the pre-crisis period, the Central Bank engaged in relatively more active sterilization and pursued a tighter stance in the pre 1993 period. The 1994 crisis revealed the fragility of the system. With direct cash credits to the Treasury being constrained, purchase of foreign exchange became the main instrument through which the market was funded, facilitating the rollover/placement of domestic debt. There had been some sterilization attempts in the first three quarters of 1995 due to strong short term inflows, but they were unsuccessful in the shallow financial system. There have been periods when the Central Bank eased the market, for example by providing liquidity to the banks through the interbank market in late 1997 and early 1998. During other episodes, such as in the second quarter of 1998, massive purchases of foreign exchange were partly sterilized. The IMF Staff Monitored Program of July 1998, however, envisions a target for net domestic assets, which implies that the Central Bank will not be sterilizing reserve flows to a great extent.

V. 5 Policy Mix Inconsistency and Macroeconomic Vulnerability

The review of economic developments in the preceding sections is indicative of the policy dilemmas when capital account is open and there are persistent fiscal imbalances. Successive governments since the mid-1980s basically muddled through without structural reforms that resulted in poor public finances. This type of policy process created major inconsistencies between fiscal, monetary and exchange rate policies creating a dynamic loop with problems in these policy areas exacerbating, and exacerbated by, each other. What kept the system from exploding have been high GDP growth, occasional but incomplete adjustment efforts that kept debt ratios broadly stable, and low initial debt level and its composition, and a large component of monetary correction in the total deficit. In this section we consider the interactions between exchange rate, fiscal and monetary policies and their impact on public debt dynamics, which is an important source of vulnerability in the macroeconomy.

Financial Opening, Debt Dynamics, and Macro Sources of Vulnerability

Financial opening interacts with fiscal dynamics in a number of ways. First, as the interest parity condition given above shows, capital mobility brought about by financial liberalization makes interest rates endogenous and market determined. This implies that domestic debt must be financed at market terms, which would include a large risk premium given the perceived political and policy uncertainty. The effects of this can be understood by analyzing the path of cash debt accumulation[15]. The cash debt stock was 6.6% of GNP at the end of 1991, but had reached 15.6% of GNP by the end of 1997. This has been the fastest growing component of domestic debt and its fast growth implies that the costs of debt service have been increasing rapidly. The fact that there is a primary surplus now but the PSBR is close to 10 percent of GNP (as of last quarter of 1998) is a clear sign of the high financing costs. While debt/output ratio in Turkey is still manageable at about 35% of GNP, the recent rate of growth of debt is a serious source of concern.

There are two factors that make it necessary to break the vicious circle (high inflation-high real interest rate-high debt financing cost-monetization-more inflation) and to minimize the possibility of a crisis. The first is the shallowness of financial markets in

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[15] In addition to issuing Treasury bills and bonds through auctions to finance budget deficits, the Treasury engages in debt restructuring with the other public entities, including the Central Bank. These off-budget operations transfer resources to public entities (especially State Economic Enterprises) against equivalent obligations to the Treasury, typically to service debt liabilities to third parties. The "non-cash sales of bonds and bills" represent such off-budget debt issuance. Such issues took up about 45% of total securitized government debt in 1993, and still took up about 20% of total government debt in 1998.

Turkey. The share of M2 (excluding foreign exchange deposits) is only 17 percent and including FX deposits is 32 percent, quite low by international standards. The share of base money in GDP has also been falling making monetary management a more difficult task. The second factor is the change in composition of national savings. As the public sector dissaved during last decade there were corresponding increases in the share of private savings. Celasun and Tansel (1993) show that there has been a strong link between real interest rates and private saving, which indicates that private savings will come at a high cost. Putting these two factors together it is easy to argue that rolling over the domestic debt stock will be a serious challenge given the heavy burden of public debt service (estimated to be around US$27-30 billion in the first half of 1999). Further, locking in high interest rates now will complicate a possible disinflation program as real interest burden will rise as inflation falls. Hence, swapping the expensive domestic debt with cheaper foreign sources of financing would need to be a key component of a credible stabilization program.

While the Central Bank could ease the situation by providing further liquidity in the absence of capital inflows, this could only be a temporary solution. In fact, since the Russian crisis the Central bank has been funding the market through open market operations, offsetting capital outflows that were estimated to be US$7-8 billion in the last quarter of 1998. Sustained Central Bank funding in the market, without capital inflows, would effectively mean central bank financing of the Treasury. This will require very careful management of liquidity, otherwise maintaining stability in the exchange rate will be much more difficult.

In sum, the fact that capital flows could quickly reverse themselves puts government finance in a very vulnerable position. The government could find it very difficult to rollover its debt in the midst of capital outflows. Explosive growth in interest financing cost and the shortening of the maturity structure of the Treasury bills market added one important dimension to the macro vulnerability of the Turkish economy.

VI. Capital Flows, Financial Development, and Banking Sector Vulnerability

VI.1 Banking Intermediation of Capital Flows

The reform process in the financial sector began as part of the comprehensive structural adjustment program in the early 1980s. The government ended interest rate controls, eased entry restrictions for domestic and foreign banks and non-banking financial institutions, and allowed new types of instruments. Directed credit programs were reduced drastically and policy measures to develop equity and bond markets were adopted. Although there were setbacks and occasional policy reversals in terms of interest rate controls, such reforms generated important changes in the sector. During the 1980-1990 period there were 31 de novo entries to the system, of which 19 were foreign and 11 were national. Freeing of interest rates contributed to the financial deepening which had started prior to 1980. Product variety in the market increased and quality of financial services improved. The arrival of

foreign banks raised the overall standards in the sector, especially in terms of human capital and information technology which was low prior to the reforms.[16]

Following the reforms in the 1980s and exposure of the sector to greater domestic and foreign competition, Turkey's banking industry has grown in size and its structure has become less concentrated. By the end of 1997, there were 72 banks operating in Turkey, including 59 commercial banks, and 13 development and investment banks. Total banking assets amounted to about US$95 billion, or equivalent to 65% of the Turkish GNP in 1997, as compared to 29% in 1980 and 43% in 1990. In terms of size concentration, the five largest banks held 44% of sector assets by end of 1997, some 20 percentage points lower than a decade ago. Turkey's banks are also among the most sophisticated in the emerging Europe region. Four of them are now listed on international stock exchanges. Many Turkish banks are experienced borrowers on the international capital markets, receiving traditional short- and medium-term bank facilities as well as borrowing through more innovative structures, such as securitized receivables. Turkish banks have had sophisticated electronic banking and information technology in place since the late 1980s. However, in a number of areas Turkey's banks continue to rely on less analytically sophisticated methods for credit assessment and management such as high collateral levels and short maturities, and lending to large holding companies which they are part of.

The state banks continue to occupy a prominent position in the banking system--42 percent of assets as of end 1997. However, these institutions have been progressively weakened by their role in a range of quasi-fiscal activities, including subsidized credit and agricultural commodity support arrangements. The Government's failure to compensate the state banks for their quasi-fiscal losses has led to decapitalization and acute liquidity problems in these banks.

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[16] For a detailed review of financial liberalization experience of Turkey, see Akyuz (1990), Akkurt et. al (1992) and Atiyas and Ersel (1994).

Table 14
Turkey: Ratio of Bank Assets to GNP

Year	ratio
1980	28.5%
1981	34.4%
1982	38.2%
1983	41.5%
1984	41.3%
1985	40.9%
1986	48.6%
1987	54.0%
1988	51.0%
1989	46.3%
1990	43.2%
1991	46.4%
1992	49.9%
1993	52.2%
1994	51.3%
1995	51.8%
1996	59.8%
1997	65.3%

Source: The Banks Association of Turkey.

As our analysis in the preceding sections suggest, Turkey's banks operate in one of the world's most volatile macroeconomic environments. During the 1990s annual inflation in Turkey has ranged from 70-125%, while double digit foreign exchange and interest rates movements have not been unusual. Despite such volatility, Turkey's private sector banks seem to have remained profitable by tailoring their strategy to this environment, although it is hard to measure profitability in Turkey due to lack of inflation accounting and ongoing problems with accounting standards.

High inflation and volatile asset prices have distorted banking activity and performance. One consequence is the prevalence of short-term lending - over 85% of bank loans have a maturity under one year. At the same time, high real interest rates on lira-denominated instruments crowded out lending to the real sector, and at the end of 1997, loans (excluding government-directed preferential credits) accounted for only 35% of total assets of the banking sector. With lending activity restricted, banks placed 10% of their assets in government securities and 14% on the inter-bank market at the end of 1997.

However, banking sector exposure to the government securities market is much higher than 10% of their assets. Banks have large investment positions in government securities funded by repurchase agreements (repos) operations, both held off balance sheet. There has been phenomenal growth in the repo volume in recent years, largely a reflection of policy distortions such as differential tax treatments and reserve requirements. By the end of 1997, commercial banks had a net repo position with private sector customers of US$10

billion (11% of total assets). Thus the exposure of the banking sector to the government securities market is at least as large off-balance sheet as on-balance sheet. The importance of the government debt market to the banking sector is also reflected in the observation that 25% and 22% of total interest income came from investment in government securities in 1996 and 1997 respectively.

Table 15

Turkey: Performance Ratios of the Commercial Banks

(percentages)

	1990	1991	1992	1993	1994	1995	1996	1997
Capital Adequacy								
capital base/risk-weighted assets	-	-	-	11.0	9.5	13.0	12.2	11.9
Asst Quality								
non-performing loans/loans	4.2	4.9	3.2	2.9	3.4	2.3	1.9	2.2
Liquidity								
liquid assets/total assets	34.6	37.3	40.1	43.2	40.9	38.4	37.8	34.4
liquid assets/(deposits+ non-deposit funds)	45.3	49.4	51.7	54.7	50.7	48.1	45.3	41.9
FX liquid assets/Fx liabilities	48.0	48.9	53.2	54.3	56.0	48.4	47.9	43.1
Profitability								
net income/average total assets	2.6	2.0	2.3	2.9	1.6	3.0	3.1	2.6
net income/average shareholders' equity	34.7	27.6	36.8	47.4	24.3	47.0	50.9	43.8

Source: The Banks Association of Turkey and Central Bank of Turkey.

The volatility of inflation has also induced lenders to include in interest rates a premium to cover their uncertainty which together with other factors, such as the government demand for funds, has resulted in very high real interest rates, which is already analyzed in more detail in section IV. The high domestic interest rates, real exchange rate appreciation, and tax distortions have induced banks to borrow abroad to finance both domestic loans and positions in the government paper market. Some of the exchange rate risk on the loans is reduced by lending foreign exchange but the banks do have foreign exchange risk to the extent they use foreign borrowing to finance their purchases of government paper. In using the government securities for overnight repos, the banks also expose themselves to interest rate risk.

Net Foreign Asset Position of Commercial Banks Turkish banks' liabilities to nonresidents has grown from being negligible in early 1980s to 13% of total liabilities in 1993, and 12% in 1997. Though the foreign liabilities of the Deposit Money Banks grew extremely fast in most of the years in the 1990s, these banks maintained positive foreign asset positions until 1997. This is in sharp contrast with the major capital importer countries such as Thailand, Indonesia, Mexico and Chile where the banking sector had large negative foreign asset positions in the 1990s. The situation in Turkey changed in 1997, however, when the net foreign asset position of the banking sector turned negative for the first time.

Table 16

TURKEY

Net Foreign Asset Position of Deposit Money Banks

(In million of U.S. dollars)

	1990	1991	1992	1993	1994	1995	1996	1997
Net Foreign Assets	**1,177**	**1,797**	**2,164**	**1,340**	**5,454**	**4,670**	**1,343**	**(888)**
Foreign Assets	**4,973**	**5,486**	**8,549**	**10,719**	**8,724**	**9,976**	**9,452**	**10,553**
Cash	305	365	384	432	559	666	920	927
Claims on banks abroad	3,818	4,822	7,624	9,529	7,007	8,079	6,651	6,742
Claims on other non-resident	850	298	541	758	1,159	1,232	1,881	2,884
Securities and bonds	5	31	249	328	484	648	1,144	1,813
Credits	753	204	205	325	529	379	461	645
Equity participation	34	37	58	88	118	145	194	337
Other	58	27	29	18	28	60	82	89
Foreign Liabilities	**3,796**	**3,688**	**6,385**	**9,379**	**3,271**	**5,307**	**8,110**	**11,442**
Interbank deposits	504	82	116	354	328	1,272	1,556	2,398
Loans	2,837	2,962	5,465	8,100	1,869	2,100	4,254	5,907
Non-residents FCDs	247	412	571	731	953	1,806	2,028	2,931
Others	209	232	232	193	121	128	271	205

Source: own calculation based on Central Bank data.

Table 17

Commercial Banks' Exposure to Nonresidents

(% of total assets)

	Claims on nonresidents	Liabilities to nonresidents
1981	0.1	0.1
1982	0.4	0.3
1983	0.9	0.8
1984	1.8	2.0
1985	0.2	0.2
1986	6.4	3.8
1987	6.6	3.9
1988	9.8	4.9
1989	8.0	4.5
1990	8.7	6.6
1991	9.5	6.4
1992	13.3	9.9
1993	14.9	13.0
1994	16.8	6.3
1995	14.6	7.8
1996	11.3	9.7
1997	11.2	12.1

Source: for 1981-1989, Atiyas and Ersel (1994); for 1990-1997, own calculation based on Central Bank data.

Table 18

Commercial Bank Net Foreign Assets as Percentages of Broad Money

	1991	1992	1993	1994	1995	1996	1997
Turkey	5.3%	6.0%	3.9%	17.0%	11.1%	2.6%	-1.7%
Thailand	-2.8%	-4.2%	-7.8%	-21.6%	-28.0%	-28.7%	-33.0%
Indonesia	-0.9%	-2.7%	-6.4%	-7.0%	-4.5%	-6.4%	-
Mexico	-4.3%	-3.3%	-4.3%	-5.4%	-2.1%	-1.5%	-0.7%
Chile	-7.8%	-16.5%	-15.1%	-14.2%	-9.5%	-6.3%	1.6%

Source: own calculation based on IFS.

The fastest growing foreign liabilities have been interbank deposits and foreign currency deposits by non-residents. These deposits remained stable even during the 1994 currency crisis. Loans from non-residents declined sharply during 1994, and although this item has also been growing very fast in recent years, the growth has not been strong enough for the loans to recover to the level as recorded in 1993. It is noteworthy that there has been a structural shift in the composition of foreign loans. In pre-1994 crisis years, trade credits (imports and pre-export finance) were not as important as other purpose foreign loans. Since the crisis, however, trade credits have been more important than other purpose foreign loans. The fastest growing foreign assets have been portfolio investments abroad. Overall though, the level of foreign assets has remained much less volatile than the level of foreign liabilities.

Foreign liabilities reached 24% of domestic liabilities by the end of 1997, as compared to 32% at the end of 1993 and 14% at the end of 1990. Data of the maturity structure of foreign liabilities are hard to come by, but according to BIS, of the US$29.2 billion total claims on Turkey at the end of 1997 by BIS-reporting international banks, 56.3% were claims of maturity up to and including one year. This figure was an average of all the claims to banks, the public sector and the non-bank private sector. For the claims to banks, it is likely that a higher percentage was of short-term. According to the Turkish Treasury, the short-term external debt of the deposit money banks reached US$8.4 billion at the end of 1996 and US$8.5 billion at the end of 1997, out of total external debt of the deposit money banks of US$11.1 billion and US$13.6 billion at the end of 1996 and 1997 respectively[17]. Thus in 1996 75% of deposit money banks' foreign borrowings were short-term, and in 1997 the ratio declined to 62%.

It is noteworthy that short-term loans and credits from abroad have been subject to a levy of 4 percent by the Resource Utilization Support Fund.[18] Thus despite the existence of

[17] There is some discrepancy between Treasury data and Central Bank data of the foreign liabilities of the banking system. The Treasury data show larger foreign liabilities of the banks than Central Bank data. The discrepancy may have to do with the definition of "banks" in their prospective coverage.

[18] This levy was lifted in early 1999 in response to the Russian crisis.

such a tax on short-term inflows, the magnitude of short-term flows have been more important than longer-term flows. It also appears that part of the short-term borrowings from abroad was due to tax arbitrage reasons. The fact that Eurobonds issued by the Turkish government prior to 1997 were not subject to income tax in Turkey provided a strong incentive for Turkish banks to conduct tax arbitration transactions. Many Turkish banks made substantial investment in government Eurobond issues motivated by tax advantages. In order to finance these investment, banks made short-term borrowings from international banks against which the government bonds were pledged as collateral. Essentially, the banks were borrowing short-term money to hold long term Turkish government bonds.

An important feature of the Turkish banking system is the substantial off-balance sheet contingencies and commitments (Table 20). As of the end of 1997, total contingencies and commitments reached US$85 billion (92% of total on-balance sheet assets), including guarantees and warranties of US$29 billion (of which US$21 billion in foreign currency), commitments (including repos) of US$23 billion (of which US$4 billion in foreign currency), and foreign exchange and interest rate transactions of US$32 billion (of which US$23 billion in foreign exchange). Thus, although the direct foreign liabilities of the banking sector were smaller than those of the non-bank private sector, such on-balance sheet liabilities may only be small part of the banking sector's overall liability to the foreign sector ex post, in the event that such contingent guarantees are called.

Table 19
Turkey
Claims of BIS-Reporting Banks by Maturity and Sector
(consolidated cross-border claims in all currencies and local claims in non-local currencies)

		Distribution by maturity		Distribution by sector		
	Total	Up to and including one year	Over one year	Banks	Public Sector	Non-bank Private Sector
	in billions of US dollars	in percentages of total consolidated claims				
mid-1994	17.5	50.4	41.8	29.3	28.6	42.1
end-1994	16.2	45.0	46.2	21.7	31.3	47.0
mid-1995	17.5	47.6	44.6	23.2	31.8	45.0
end-1995	18.6	48.1	44.2	27.9	28.3	43.8
mid-1996	20.1	50.3	43.6	28.8	27.1	44.1
end-1996	22.6	50.9	43.5	32.7	22.7	44.6
mid-1997	25.1	52.1	42.3	33.0	20.1	46.8
end-1997	29.2	56.3	38.5	34.4	17.6	47.9

Source: BIS, The Maturity, Sectoral and Nationality Distribution of International Bank Lending, various issues.

Table 20
Turkey
Commercial Bank Contingencies and Commitments
(US$ million)

Period		Guarantees and Warranties	Commitments	Fx and Interest Rate Transactions	Total
1997	TL	8,075	18,875	9,393	36,343
	FX	21,327	3,850	23,004	48,181
	Total	**29,401**	**22,725**	**32,397**	**84,524**
1996	TL	7,213	16,162	4,630	28,005
	FX	17,222	1,991	15,056	34,269
	Total	**24,436**	**18,153**	**19,686**	**62,275**
1995	TL	7,041	7,970	4,794	19,805
	FX	13,906	633	12,525	27,064
	Total	**20,947**	**8,602**	**17,319**	**46,868**

Source: The Banks Association of Turkey.

VI.2 Capital Flows and Capital Markets Development

Since financial liberalization in the 1980s, Turkey's securities markets have grown tremendously in size and in sophistication, though the dominance of the government debt securities in the market has remained unchanged. Stock market capitalization has increased from US$1 billion in 1988 to US$62 billion in 1997 (from 1% of GNP in 1988 to 31% of GNP in 1997). The number of listed companies increased from 80 to 258, and turnover ratio increased from 5.5 to 114, in the same period. By the end of 1997, Turkey ranked 29th in total market capitalization, 20th in total value traded, and 29th in number of listed domestic companies, in the world (IFC, 1998).

Although stock market capitalization has surpassed the level of outstanding Treasury bills and bonds, the level of outstanding shares issued has been much smaller than debt securities. The value of outstanding shares was only 15% of the outstanding government bills and bonds at the end of 1997. Private sector issues (of which 80% was equity issues) was less than 5% of Treasury bills and bonds issued in 1997. In fact, private sector issues have not shown any real growth since the early 1990s, despite the phenomenal growth in market capitalization and high real returns in equity investment.

Secondary market trading of government securities has also grown phenomenally in recent years. Value traded of government securities on the "outright purchases and sales market" in the Istanbul Stock Exchange increased from US$312 million in 1991 to US$35 billion in 1997. Value traded on the "repo-reverse repo market" in the Istanbul Stock Exchange increased from US$4.8 billion in 1993 to US$374 billion in 1997.

The very fact that the value of shares outstanding in the Turkish capital market has been rather small as compared to government securities implies that the impact of the collapse of an asset bubble will be limited, particularly to the banking sector. The stock market in Turkey is known for its volatility, and at times the market seemed to be overvalued, only to be corrected some months later, without too much effect on the rest of the financial sector or real economic activity.

Table 21

TURKEY

Capital Markets: Selected Indicators, 1992-1997

	1992	1993	1994	1995	1996	1997
	(in trillion of Turkish lira)					
New issues of securities						
Total	172	402	926	1,840	4,787	6,638
Private	23	72	85	175	162	378
of which: shares	5	10	38	51	102	306
asset-backed securities	15	53	42	114	42	23
T bills and Govt. bonds	150	330	841	1,666	4,625	6,260
Trading volume in secondary markets						
Total	682	2,031	6,163	22,248	73,446	186,515
of which: shares	56	256	652	2,375	3,040	9,086
govt. bonds	209	658	1,679	4,580	12,741	85,389
T bills	376	1,028	3,479	14,831	56,808	90,729
Outstanding securities						
Total	196	382	729	1,498	3,221	7,025
Private	61	112	131	295	441	932
of which: shares	49	71	109	224	425	909
Public	135	270	598	1,202	2,780	6,093
			(in percent)			
Memorandum items:						
Public sector share of:						
New issues	86.9	82.1	90.9	90.5	96.6	94.3
Trading volume	85.7	83.0	83.7	87.3	94.7	94.4
Outstanding securities	69.0	70.7	82.0	80.3	86.3	86.7
Public sector outstanding securities						
As percent of GNP	12.2	13.5	15.4	15.3	18.6	20.6
As percent of M2Y	42.7	56.8	50.5	50.5	53.8	59.3

Source: own calculation based on data from Capital Markets Board and Treasury.

Table 22

Istanbul Stock Exchange

	No. of Listed Companies	Market Capitalization (in billion US dollar)	Trading Value (in billion US dollar)	Price Index*	P/E Ratio	Dividend Yield(%)
1986	80	0.94	0.01	132	5.1	9.2
1987	82	3.12	0.12	385	15.9	2.8
1988	79	1.13	0.12	120	5.0	10.5
1989	76	6.76	0.77	561	15.7	3.4
1990	110	18.74	5.85	643	24.0	2.6
1991	134	15.56	8.50	501	15.9	4.0
1992	145	9.92	8.57	273	11.4	6.4
1993	160	37.82	21.77	833	25.8	1.6
1994	176	21.78	23.00	413	24.8	2.8
1995	205	20.78	52.46	383	9.2	3.6
1996	228	30.80	37.74	534	12.2	2.9
1997	258	61.88	58.10	982	24.4	1.6

*US$ base, January 1986=101

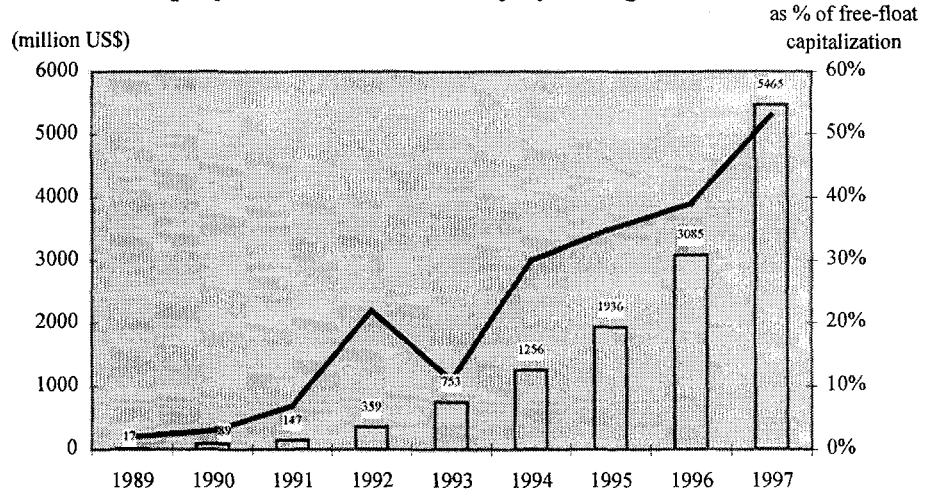
Source: Istanbul Stock Exchange

Foreign Participation in Capital Markets A milestone in the Turkish financial liberalization process was the August 1989 issuance by the government of Decree No. 32 regarding capital account transactions. Under the decree, nonresidents were allowed to buy and sell Turkish securities quoted on the domestic stock exchange or government securities through intermediary institutions operating in Turkey. They were also permitted to transfer income and the sales proceeds of these securities abroad through banks and other authorized financial institutions. Residents were permitted to purchase securities issued by foreign countries through authorized financial institutions. They were also allowed to transfer the foreign exchange required to purchase such securities abroad.

There is no information available as to how much the outstanding Treasury bills and government bonds are now held by foreign residents. However, there has been a huge increase in the proportion of shares held by foreign residents. Chart 11 shows that, according to the Istanbul Stock Exchange, foreign holdings of the "free float" market capitalization reached more than 50% in 1997, as compared to about 33% in 1996, and less than 5% in 1990. By the end of April 1998, net equity investments by foreign investors was approximately US$7 billion.

Chart 11

Net Equity Investments in Turkey by Foreign Investors



Source: Istanbul Stock Exchange

VI.3 Capital Flows and Financial Vulnerability

While increased financial integration may convey substantial economic benefits for developing countries, free capital flows also expose these countries to the risks and costs imposed on the economy by abrupt and large reversals of capital flows because of changes in creditor perceptions. A country may become financially vulnerable externally if there are large risks in its financial system that constrain foreign exchange liquidity. As we can see from earlier sections, foreign loans and credits to Turkey have been rather volatile, and Turkey experienced a sharp reversal of capital flows and a severe currency crisis in 1994. As a result, there was a sharp contraction of credit to the real sector and real economic activity contracted by 6% in that year. In this section we assess the liquidity risks, particularly foreign exchange liquidity risks, currently facing the Turkish banking system, and the ability of the commercial banks and the authorities to handle those risks.

Adequacy of International Reserves In traditional models of balance of payments, the vulnerability to a speculative attack usually results from a drainage of reserves following an excessive flow domestic credit expansion. Recent developments in the literature suggest that a currency can be subject to attack even without a flow fiscal deficit that causes a drainage of reserves, if the stock of broad money greatly exceeds the stock of foreign exchange reserves. When capital inflows suffer a reversal, not only do gross inflows dry up, but also holders of liquid domestic liabilities try to convert them into foreign exchange and flee the country. Thus reserves must be compared with a broad measure of liquid monetary assets in order to determine a country's vulnerability to panic.

Net foreign reserves have grown rapidly in recent years in Turkey, and Table 23 below shows that the ratio of broad money to foreign reserves have declined. Though the ratio does not look particularly high as compared to a number of other large capital importer countries, whether the reserves are all freely usable is an issue of concern in the case of Turkey. While the central bank has fairly conservative foreign exchange management policies, and it does not engage in foreign exchange guarantees, forward contract or swap positions, a large part of the net international foreign reserves represent foreign currency deposits with the central bank by foreign residents of Turkish origin through the Dresdner Scheme[19] or similar arrangements. Although the balance of such deposits does not exhibit high volatility, its stability cannot be taken for granted.

Table 23

Turkey: System Liquidity

	Ratio of Short-term Debt to Foreign Reserves	Short-term Debt as Percentage of Total Debt	Ratio of Broad Money to Foreign Reserves	Ratio of Broad Money+ Repos to Foreign Reserves
1993	2.4	28%	4.3	4.3
1994	1.3	17%	4.0	4.1
1995	1.1	21%	3.4	3.4
1996	1.2	26%	3.0	3.1
1997	1.2	27%	3.0	3.2

Source: Own calculation based on Central Bank data.

Table 24

System Liquidity in Seleted Countries as of June 1997

	Ratio of Short-term Debt to Foreign Reserves	Short-term Debt as Percentage of Total Debt	Ratio of Broad Money to Foreign Reserves
Korea	3.0	67%	6.2
Indonesia	1.6	24%	6.2
Thailand	1.1	46%	4.9
Philippines	0.7	19%	4.9
Malaysia	0.6	39%	4.0

Source: Goldstein (1998), p11.

19 The Dresdner Scheme is a special arrangement between Dresdner Bank in Germany and the Central Bank of Turkey, to attract deposits of Turkish workers residing in Germany. The Central Bank of Turkey sets the interest rates offered under the scheme, with the Dresdner Bank acting as an agent to facilitate remittances back to Turkey.

Table 25
TURKEY
Net Foreign Asset Position of the Central Bank
(In million of U.S. dollars)

	1990	1991	1992	1993	1994	1995	1996	1997
NFA	**-449**	**-87**	**1,601**	**1,142**	**-659**	**2,008**	**5,894**	**8,557**
Net international reserves	**7,296**	**6,400**	**7,607**	**7,700**	**8,232**	**13,067**	**16,950**	**18,917**
Gold	1,467	1,492	1,494	1,488	1,420	1,383	1,383	1,124
Foreign bank notes	222	366	429	626	422	796	292	363
Correspondent accounts	5,683	4,547	5,687	5,587	6,740	11,595	15,980	18,056
International reserve liabilities	76	4	2	1	350	706	706	626
Other foreign liabilities (net)	**7,744**	**6,487**	**6,007**	**6,558**	**8,891**	**11,059**	**11,056**	**10,360**
Non-resident FCDs	7,534	6,432	6,368	6,975	9,290	11,558	11,949	11,360
Medium-term loans (net) 1/	-1,196	-1,106	-1,093	-1,039	-1,073	-1,110	-1,167	-1,218
Others (net)	1,407	1,160	731	622	674	611	274	217

Source: Statistics Department of the Central Bank of Turkey.

1/ Mainly foreign credit extended.

Open Foreign Exchange Positions and Maturity Mismatches Largely as a result of chronically high inflation and asset substitution, the government's overwhelming borrowing presence in Turkey's financial markets, and due to the unique set of tax and regulatory incentives affecting banks and their customers (e.g. the blanket deposit guarantee provided by the government), many Turkish banks have turned to arbitrage activities to generate a substantial portion of their profits. In particular, many private-sector banks run large currency and interest rate risk positions than would be considered prudent in most countries. A number of banks run open foreign exchange positions that exceed the already generous regulatory limit of 50% of capital.[20] Such behavior is also a reflection of moral hazard as a result of the existence of extensive government guarantee on deposits and regulatory forbearance. The fact that the regulatory authorities allowed non-compliance without imposing serious sanctions encouraged the banks to continue taking large foreign exchange risks.

The Turkish banking sector was hard hit during the 1994 currency crisis. At year-end 1993, the total open position of the banking sector was US$4.6 billion, or 68% of total equity. The risks of such a capital structure became apparent only a few weeks later, when the lira collapsed, losing half of its value in the first quarter of 1994. This currency crisis led to large foreign exchange losses and higher loan defaults at most banks. Net income for the sector fell from US$1.9 billion in 1993 to US$0.9 billion in 1994. Moreover, a number of

[20] This limit is now lowered to 30% of capital as a result of the agreement with the IMF on a Staff Monitored Program.

banks experienced severe liquidity problems. Three were dissolved, while another was acquired by a stronger bank. By the end of 1994, the total open position of the banking sector had narrowed to US$860 million, but it has since expanded again close to US$5 billion by the end of 1997.

Table 26
TURKEY
Balance Sheet Open Short Foreign Exchange Positions of Banks

	US$ billions	Percentage of Capital
1992	2.9	48
1993	4.6	68
1994	0.8	18
1995	3.1	51
1996	2.5	34
1997	4.9	55

Source: The Banks Association of Turkey.

There is a systemic aspect to this risk. Virtually all of the risk-taking banks are positioned in the same direction, holding short foreign currency positions and borrowing short and lending/investing long. Moreover, these banks are the dominant players in both currency and government securities markets. Therefore, if there is a strong rate movement against either or both of these risk positions, the banking sector may move in unison to shed it holdings, pushing the lira down and interest rates up, and leaving the Central Bank as the sole stabilizing force in the market. These factors suggest that the Central Bank may be constrained in its policy options for crisis management. If, for example, it wishes to defend the currency by raising interest rates sharply, such action would have serious consequences for the banks because of their interest rate risk positions.

Quality of Loan Assets One of the striking features of Turkey's private-sector banks is the low ratio of loans to total assets, and the short-term nature of such loans. While this fact may cause some concerns, it has a beneficial liquidity effect - namely that a greater proportion of assets can be held in more liquid asset-types, such as securities, and the loans can be called and turned into more liquid assets more easily. The securities can provide liquidity via sale, repo, or when pledged against interbank borrowings. On the other hand, loans are still the largest asset item, and large credit risks have profound implications for system liquidity.

The level of credit risk in the Turkish banking system appears to be moderately low as measured by banks reported level of non-performing assets, and the banks appear to be

reasonably well capitalized as shown in Table 15.[21] However, the current practice of loan classification and loan loss provisioning may not provide an accurate picture of potential as opposed to actual loan losses in the banking system. The current loan loss classification system is largely based on the number of days a loan is past due for principal. The problem with this is that deteriorating credits are likely to be provisioned later than they should be. By the time borrowers are unable to meet principal payments, there is a large probability that the loan will be a loss to the bank.

One sign of the existence of larger than reported credit risks is that credit to the private sector appeared to have grown very fast. Commercial banks' claim on the private sector grew in real terms by 44% in 1995 (which might to a large extent reflected making up for the sharp contraction of 32% in lending to the private sector in 1994), 28% in 1996, and 22% in 1997. Thus the growth in bank credit to the private sector exceeded by a wide margin the already rapid growth of GNP. The credit growth rates were very high as compared to other large capital importers. The nature of such lending is not clear (in terms of sectoral concentration, etc), but it is noteworthy that consumer lending has assumed increasing importance. Though consumer credits have been only a small part of the total lending (about 9% as of end 1997), the volume of consumer credits have been growing very fast - from US$1.9 billion as of end 1996 to US$2.9 billion as of end 1997 (a growth rate of 53%). Such a high credit growth rate may not augur well for credit quality. Turkish banks may be subject to large credit losses if economic activity slows down, for example, due to business cycle reasons.

Table 27
Turkey: Growth of Bank Credit to the Private Sector Relative to the Growth of GNP

Year	Real Credit Growth	Real GNP Growth	Difference
1992	14.3%	6.4%	7.9%
1993	15.3%	8.1%	7.2%
1994	-32.0%	-6.1%	-25.9%
1995	44.0%	8.0%	36.0%
1996	27.7%	7.1%	20.6%
1997	22.5%	8.0%	14.5%

Source: own calculation based on IFS.

[21] The level of non-performing loans was reported to have increased sharply during 1998, as a consequence of adverse economic conditions.

Table 28
Growth of Bank Credit to the Private Sector Relative to the Growth of GDP in Other Countries

	1990-94	1995	1996
Thailand	10.0%	11.1%	5.8%
Indonesia	10.4%	4.4%	5.7%
Malaysia	3.1%	10.5%	13.1%
Philippines	10.7%	27.4%	31.5%
Hong Kong	8.8%	8.9%	-6.1%
Singapore	0.8%	7.8%	5.7%
South Korea	2.6%	2.2%	-0.6%
Mexico	25.7%	-0.6%	-36.0%

Source: Goldstein (1998), p8.

To what extent have capital inflows contributed to such high growth in domestic credit? It is clear that lending to the private sector could not have grown by as much as it did in 1992, 1993, and 1997, without the funds borrowed from abroad. In 1997, lending to the private sector increased by US$5.6 billion and investments in government securities increased by US$1.8 billion, whereas domestic liabilities increased by only US$2.2 billion. Without the increase in foreign liabilities of US$3.3 billion, the growth in domestic credit would not have been possible. Equally important, reversal of foreign inflows in 1994 (an outflow from the banking sector of US$6 billion) was the main reason for the sharp contraction in lending to the private sector (a decrease of 32% in real terms). In 1995, the growth in domestic credit was funded primarily by the growth in domestic liabilities. The situation in 1996 was less clear, but it would be true to say that without the foreign financing of US$2.8 billion, total domestic claims (investment in government securities and lending to the private sector) could not have grown as much as they did.

The credit risks faced by Turkish banks are also closely linked with currency risks they take. Banks are exposed to credit risk through currency risk since a portion of their foreign currency loans go to companies which do not engage in foreign trade related business (as the end of 1997, close to 60% of all non-preferential loans by the commercial banks were foreign currency loans). The bulk of the earnings of these companies are in domestic currency and their debt repayment capacity would significantly deteriorate in the case of a sharp exchange rate depreciation. Though the exact magnitude of such loans are not known, indications from various sources are that they are sizable. In addition, as mentioned earlier, banks carry large off-balance sheet guarantees, of which 73% is in foreign currency. Such guarantees could also carry high credit risks in the event of a sharp exchange rate depreciation.

Regulatory Deficiencies The absence of full consolidated supervision of banking groups-i.e. of branches and subsidiaries-represents a serious weakness in Turkey's financial regulatory framework, particularly from the perspective of external financial vulnerabilities. There is anecdotal evidence of the formation of bank branches/subsidiaries by Turkish banks

in foreign countries which lie outside the supervisory net (e.g., off-shore centers such as Cyprus), and there is also anecdotal evidence that Turkish banks have begun to become involved in more complex types of financial instruments in the international markets, utilizing subsidiaries and special purpose vehicles. The financial soundness of Turkish banks could be seriously compromised by activities carried on out of the sight of its supervisors. As we have shown in Section II, Turkish banks have made substantial investments abroad. The quality of such foreign assets has important implications to the financial positions of domestic banks. The liquidity of such assets also has important implications for foreign exchange liquidity of the banking system. In addition, the existence of unsupervised cross-border financial transactions could also add to the severity of a balance of payments crisis.

The dominance of industrial and commercial companies in the ownership of many of Turkey's commercial banks also increases the importance of addressing the issue of consolidated supervision. Recent developments demonstrated the risks associated with connected lending in the Turkish banking system. Earlier in January 1999, the medium-sized Interbank was taken over by the Deposit Insurance Fund. Most of Interbank's problems arose from a large exposure to its parent company, Nergis Holding, one of the largest textile companies in Turkey. The latter was severely affected by the downturn in the industry that followed the Asian crisis. Connected lending and concentrated credit portfolios exposed the banks to imprudent concentration of credit risks. This case may indicate that the credit risks faced by the Turkish banks could be far higher than implied by the apparently moderate level of non-performing loans, and illustrates the importance of strengthening bank supervision to protect the banking system from risks arising from the ownership of its banks by industrial groups.

Excessive risk-taking in the banking system also reflects deficiency in the mechanism for the resolution of problem banks. It has been open secret that quite a few small and medium sized banks have been under special surveillance for a long time. While being under special surveillance, these banks are exempted from a number of prudential requirements, creating perverse incentives for the banks to remain under special surveillance without taking serious effort to improve and exit from that status. In addition, an ineffective bank liquidation process also weakens the disciplinary effect of bank exit policy. Out of the five banks which have been in liquidation in Turkey, two started in 1985, and the remaining three started in 1994 after the currency crisis. The expectation is that it would take at least ten years to terminate these liquidations. The main problem is a very slow court process that is not suitable for bank liquidations. To be able to deal with future bank failures and to restore the right incentives in the banking system, the authorities need to expedite the modernization and reform of the legal and regulatory framework.

VII. Conclusions

Net capital inflows to Turkey reached significant magnitude in 1993, 1996 and 1997, surpassing four percent of GNP. The first half of 1998 has seen even bigger inflows, with official foreign reserves increasing by about US$8 billion by mid 1998 as compared to end

1997. In the midst of such large inflows, Turkey has maintained modest current account deficits, with the result of increasing reserve accumulation. Within the current account, it is noteworthy that the trade deficits (which now include an estimate of the so called "shuttle trade") in recent years have been increasing and becoming fairly large (US$15 billion, or 7.7% of GNP, in 1997). Financing of the trade deficits has been made possible by the strong positive balance on the invisibles account, especially non-interest and non-tourism revenues. Part of these are likely to be speculative short-term flows, which may be subject to sudden reversals. Turkey's relatively healthy current account position therefore relies to some extent on unrecorded flows, which could be an important element in its external vulnerability.

Though the stock market in Turkey has grown tremendously in size and sophistication in the past decade, and foreign residents now hold more than half of the free float of the market capitalization, equity flows have not been as important as debt flows. Among debt flows, foreign deposits with the banking sector and loans and credits to the non-financial private sector were more important than portfolio flows. The net foreign asset position of the banking sector had been positive before 1997, but it turned negative for the first time in 1997, and is likely to remain negative in 1998. Against the backdrop of such large capital inflows, credit to the private sector has been growing very fast in recent years. Such high credit growth does not augur well for the soundness of the banking sector.

The majority of the debt inflows were not intermediated through the domestic banking system - the nonfinancial private sector has been a more important borrower of foreign funds than the banking sector. However, the foreign borrowings of the non-financial private sector often carried guarantees by the domestic banking sector, thus the banking sector's exposure to foreign liabilities was much larger than their balance sheet items indicate. It is also noteworthy that, though the short-term debt stock was only one-fourth of total debt stock, short-term flows have dominated net inflows in most years. On the other hand, the volatility of short-term flows of loans and deposits did not seem to be significantly different from that of longer-term flows of loans and deposits. This observation calls into question the usefulness of the distinction between short-term and long-term flows.

Foreign direct investments have been a small part of total capital flows, and the most important pull factor of non-portfolio capital flows to Turkey seems to have been short-term interest rate differential rather than growth opportunities in the economy. Since the exchange rate depreciation rate has often lagged behind the rate of inflation, ex post real returns on domestic debt have been generally higher in US$ terms than in TL terms. This situation encouraged both domestic asset substitution and foreign borrowing. On the other hand, portfolio flows, which were mostly bonds issued abroad by the Turkish government and private sector, responded more to external "push" factors such as low international interest rates than domestic "pull" factors as the interest rate differentials.

We have found that capital flows were positively associated with private consumption and investment, but not public consumption and investment. Capital flows, therefore, alleviated to some extent the inevitable crowding-out effect of high public sector deficits and contributed to growth. Given the objectives of maintaining financial markets stability, the

Central Bank did not have control either of its Net Domestic Assets due to its lending to the Treasury before the 1994 crisis, or of its Net Foreign Assets due to its real exchange rate target rule since late 1995. High inflation was an inevitable outcome given the combination of high public sector deficits and accommodating monetary policy.

Our analysis also shows the fundamental importance of fiscal policy in an era of large capital flows. Fiscal imbalances were the key factor both contributing to real exchange rate appreciation and leading to high real interest rates in Turkey. The high interest rates that government must pay on domestic debt has become the core of Turkey's macroeconomic problem. In 1998, the government estimates that it will spend 10.5% of GNP on domestic interest payments, up from less than 3% in 1992. Only if the government can find a way to reduce its interest expenses can fiscal deficits be reduced and greater stability be achieved. In addition, the fact that capital flows could quickly reverse themselves puts government finance in a very vulnerable position. The government could find it very difficult to rollover its debt in the midst of capital outflows. The shortened maturity structure of the Treasury bills market has not only complicated monetary management, but also added one important dimension to the macro vulnerability of the Turkish economy.

In the process of becoming increasingly integrated with international financial markets, the Turkish banking system has also become vulnerable to shifts in market confidence. The high domestic interest rates, real exchange rate appreciation, and tax distortions have induced banks to borrow abroad to finance both loans and positions in the government paper market. In using the government securities for overnight repos, the banks expose themselves to interest rate risk. Some of the exchange rate risk on the loans is shifted to the corporate borrowers by lending foreign exchange but the banks still have foreign exchange risk to the extent they use foreign borrowing to finance their purchases of government paper. The banks are also exposed to large credit risks as a result of lending in foreign currency to customers which have unhedged foreign currency positions, or by providing guarantees to customers that borrow directly from abroad in foreign currency. The exchange and interest rates risks taken by banks pose systemic problems in that all of the institutions have virtually the same exposure, namely short foreign exchange and longer dated government paper. The markets would prove very thin and volatile should banks decide to exit in unison.

The risk positions were induced by a volatile and distorted macroeconomic environment, and a reflection of moral hazard created by extensive government guarantees on deposits and regulatory forbearance. High volatility in the main macroeconomic variables is a product of high inflation and will continue until there is much greater price stability. Turkey cannot have a sound banking system without a substantial reduction in inflation. While it is difficult to engineer a stabilization program without both interest rate and exchange rate shocks, which could cause difficulty for the weaker banks, effective supervisory actions should be undertaken against non-compliance with prudential regulations so that the market and credit risks in the system will be reduced, which will help enhance the credibility of the stabilization program. In short, strengthening financial regulation and

achieving macroeconomic stabilization should go hand in hand in order to reduce external vulnerability of the Turkish economy.

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