

**COMPARATIVE ANALYSIS OF THE MEXICAN AND
TURKISH CURRENCY CRISES**

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INTRODUCTION

The integration of developing economies into the global economy has been proceeding on two interrelated fronts: the goods and services markets, and the financial markets. Typically, developing economies try to liberalize restrictive import and export policies as a first step towards market integration. Secondly, attention is directed at financial liberalization and integration policies; such policies have had far-reaching implications for a number of developing economies which aggressively adopted liberalization policies recommended by supranational organizations such as the International Monetary Fund and the World Bank.

Turkey and Mexico are two such countries with astonishing similarities regarding both their current stage of development and their long-term stabilization policies. They both have sought financial and commercial integration with the major players of the global economy. While Mexico became a member of NAFTA in 1994, Turkey marked 23 years of gradual integration into the European Union (EU) with a customs union agreement in December 1995. Both countries share short-lived success stories marked by stellar economic performance, despite the overall instability of their economies. Furthermore, both countries endured political instabilities and costly domestic armed conflicts, as well as severe financial crises in early and late 1994.

Turkey suffered a severe financial crisis following several years of relatively strong economic growth, the gross domestic product (GDP) growth rate reached nearly 10%, in real terms, in 1993. The Turkish lira depreciated against all major currencies by more than 100% in the course of only three weeks following three years of revaluation against major currencies and a mounting current account deficit. The devaluation of the Turkish lira against the US dollar reached 146% by the end of 1994. The short-term interest rates soared to an annualized 200% and the financial system was paralyzed throughout most of 1994, becoming functional only towards the end of that year. Mexico experienced a similar crisis just 10 months after the Turkish crisis. The Mexican peso depreciated by 40% in real terms after two years of revaluation against major currencies. The peso crisis was further exacerbated by a surge in the current account deficit and a major outflow of foreign capital.

The motivation for this research stems from the belief that the economic and financial crises of Turkey and Mexico hold many lessons for developing economies, and that a comparative methodology is likely to provide an analysis that improves the validity of conclusions that may be made in relation to any future currency crisis. The objective of this case study is to analyze the background, evolution, eruption, and aftermath of the currency crises experienced in February 1994 and December 1994 in Turkey and Mexico, respectively.

The first section presents a general overview of the policies leading to financial integration of developing economies into the global financial system. Section two analyzes the stabilization policies implemented throughout the 1980s and early 1990s in both countries and develops a macroeconomic map for a comparative analysis. Section three compares the eruption and the management of the two crises. Section four compares the circumstances and variables surrounding the currency crises in Mexico and Turkey.

2. THE MEXICAN CRISIS

2.1-Macroeconomic Background

Between 1950 and 1970, Mexico was described as a paragon of financial stability and growth ⁽¹⁾. In the fixed exchange rate era and unrestricted convertibility period, high economic growth prevailed with only mild inflation. Excessive fiscal expansion occurred due to growing oil revenues, increased government borrowing, and appreciation of the peso in real terms. Despite the large amount of petrodollar inflows, the trade deficit grew rapidly and the budget deficit reached 16% of the gross domestic product. Excessive expansionary policies, mounting government debt, and appreciation of the peso in real terms created current account imbalances. The implementation of exchange rate controls coupled with the nationalization of Mexican banks by Lopes Portillo's government triggered a massive flight of capital out of Mexico and, in 1982, Mexico was swept into insolvency and the international "Debt Crisis." During this period, Mexico accumulated external debt amounting to 49 percent of its GDP ⁽²⁾, and was denied access to the international capital markets until 1989.

An economic stabilization program was necessary for the revitalization of the Mexican economy. Traditional economic policies, implemented by the Miguel de la Madrid government from 1983 to 1988, aimed to reduce government spending and liberalize exchange rate controls. Due to the rapid contraction of government spending and tight monetary policies, Mexico experienced a deep recession in 1983. The Mexican economy began showing signs of recovery in 1984, but in 1985 a shattering earthquake, which caused \$10bn in damage ⁽³⁾, threw any chances of economic recovery into a tailspin.

The economic devastation following the earthquake and the collapse of oil prices exposed major weaknesses in Mexico's fiscal policy; once again, the government deficit reached an alarming level of 16% of GDP while inflation rose to 159% ⁽⁴⁾. A series of devaluations weakened investor confidence and triggered another round of capital flight from Mexico. In the midst of the crisis, the de la Madrid government made a bold move to join the General Agreement on Tariffs and Trade (GATT) which paved the way for trade liberalization policies. Shortly after joining GATT, Mexico's inflation dropped due to intensified competition in consumer products as foreign goods found their way into the Mexican market.

In 1988, de la Madrid's fiscal and economic recovery efforts were left to the Carlos Salinas de Gortari administration, that embarked on an ambitious stabilization program. The inauguration of Salinas de Gortari was a turning point for the Mexican economy. His commitment to strong fiscal consolidation and structural transformation accelerated Mexico's overall economic liberalization process, and its privatization of state owned enterprises. The experience from earlier stabilization programs proved that traditional policies were not sufficient to curb Mexican inflation ⁽⁵⁾, and the need for innovative policy measures was recognized by the Salinas government. Thus, the Economic Solidarity Pact (Pacto) was signed by government, business and labor representatives. The government basically adhered to tight fiscal and monetary policies and fixed exchange rates, whereas the business and labor sectors showed commitment to moderate price and wage increases.

2.1.1-Fiscal Policy Implications

The fiscal components of the stabilization program focused on curbing government expenditures and increasing tax revenues by reducing the marginal tax rate and increasing coverage. The fiscal consolidation targeted a reduction in interest payments through

rescheduling the external debt and further debt reduction. It wasn't long before the economy felt the positive effects of the government's acute fiscal discipline. The public sector's operational budget deficit declined substantially from 1988 to 1992 (Table-2).

Furthermore, the successful implementation of the Brady Plan in 1990 reduced the external public debt from 50% of the GDP in 1988 to only 22.2% of the GDP in 1992. The Brady Plan also created the opportunity for the government to shift its attention away from foreign debt to domestic economic reform and modernization. The Brady Plan improved Mexico's ability to service its external debt by reducing the interest and principal payments. It also opened the door for Mexico to participate in the international capital markets. For Mexico, another significant contribution of the Brady Plan was the reduction of capital outflows. For example, in 1988, two years preceding the Plan, capital inflows barely reached \$400m. However, only two years following the implementation of the Plan, capital inflows reached \$25.9bn¹ (Figure-1)⁽⁶⁾.

TABLE-1

Mexican GDP Growth Rates 1980-1988

	1980	1982	1983	1985	1986	1987	1988
Real GDP	8.3	-0.7	-4.3	2.8	-3.8	1.9	1.2

Source: OECD Outlook 1995

TABLE-2**Mexican Budget Deficit (% of GDP)
1982-1993**

Year	Operational	Primary	Total
1982	-5.5	-7.3	-16.9
1983	0.4	4.2	-8.6
1987	2.0	5.0	-15.0
1988	-3.0	6.0	-11.6
1989	-1.1	7.9	-5.2
1990	1.2	7.8	-3.6
1991	2.8	5.5	0.4
1992	3.3	5.4	1.5
1993	1.5	3.9	0.7

Source:IMF World Outlook 1995 and Dornbush and Werner 1995

TABLE-3**Mexican Debt (% of GDP)
1982-1994**

Year	Domestic Debt	Foreign Debt
1982	15.5	35.8
1983	16.5	43.7
1987	16.5	61.5
1988	18.7	49.7
1989	23.9	40.5
1990	23.5	31.7
1991	19.7	26.1
1992	12.9	22.2
1993	12.0	23.0
1994	13.2	24.2

Source:IMF World Outlook 1995 and Dornbush and Werner 1995

2.1.2-Monetary Policy Implications

Mexico's monetary policy, in contrast to its fiscal policy, targeted high inflation and exchange rate stabilization, and allocated funds to the private sector through the banking system. The monetary policy focused on controlling inflation and relied heavily on the exchange rate as a nominal anchor ⁽⁷⁾. In a policy framework where the exchange rate is a nominal anchor, the exchange rate is used as a link between the domestic and international prices of tradable goods. When the exchange rate is stabilized, domestic price fluctuations are driven by the international prices of tradable goods. This relationship implies that domestic and international inflation rates should be closely approximated, provided that the government is committed to maintaining exchange rate stability. During the initial stages of the stabilization program, the peso was pegged to the US dollar. In 1989, the control was imposed through a "crawling peg" system under which the exchange rate was devalued daily at a pre-announced rate ⁽⁸⁾. When the capital controls were completely eliminated in 1991, the peso was allowed to fluctuate within a wider range, which not only provided flexibility for the system to accommodate large capital inflows, but also created a considerable degree of certainty for the economic agents.

The second aspect of Mexico's monetary policy focused on the liberalization of interest rates and bank lending. The reserve requirements and liquidity ratios were abolished while all restrictions on lending were removed during the period 1988-1989. After 18 state owned banks were privatized between 1990-1992, bank lending to the private sector jumped from 26% of the total lending to 87% in 1993 ⁽⁹⁾. The policy placed particular emphasis on monetary growth in order to keep economic expansion in line with nominal income growth.

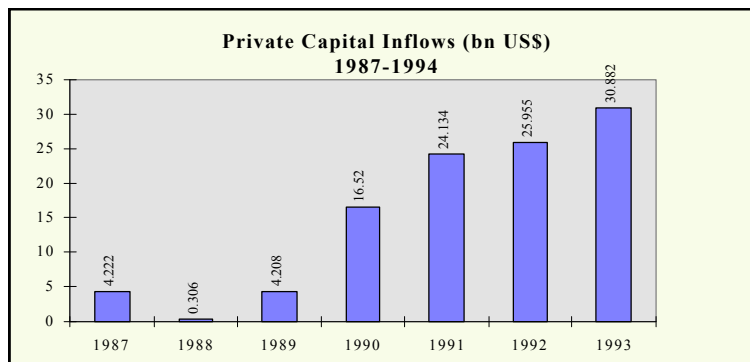
TABLE-4
Select Economic Indicators for Mexico (%)
1987-1994

	1987	1989	1990	1992	1993	1994
Real GDP	1.7	3.7	4.6	2.9	0.5	3.6
Inflation	159.2	19.7	29.9	11.9	8.3	7.1
Interest Rates¹	122.0	40.6	26.0	16.9	11.8	30.0

Source: IFS December 1995.¹ Annualized Interest rates on 28 days CETES

Control over the budget deficit and monetary growth brought inflation down to 8.3% at the end of 1993 (Table-4). Nominal interest rates declined accordingly, although real interest rates fluctuated during the 1988-1994 period. The nature of government financing has also changed and it was increasingly directed towards sterilization of surging capital inflows. In the 1990-93 period private capital inflows reached 6% of GDP (Figure-1) and 20% of the flows materialized as direct investments.

FIGURE-1
Mexico's Private Capital Inflows (bn US \$)
1987-1993



Despite the budget deficit, the decline in inflation and real interest rates created a positive investment climate; the investment growth rate was well below the growth in consumption in the 1987-1994 period. During the same period, the decline in national savings was striking (Table-5).

TABLE-5

**Mexico's Domestic Savings & Investments (% of GDP)
1987-1994**

	1987	1989	1991	1992	1993	1994
National Savings	21.6	18.5	17.6	16.0	14.1	13.7
Investments	19.3	21.4	22.4	22.8	20.6	21.6

Source: OECD Economic Outlook December 1995

Declining public consumption in the first years of the stabilization program changed course in 1990, and peaked in 1991. Private consumption, mostly financed by surging capital inflows, grew faster than public consumption (Table-6).

TABLE-6

Consumption Growth (%)

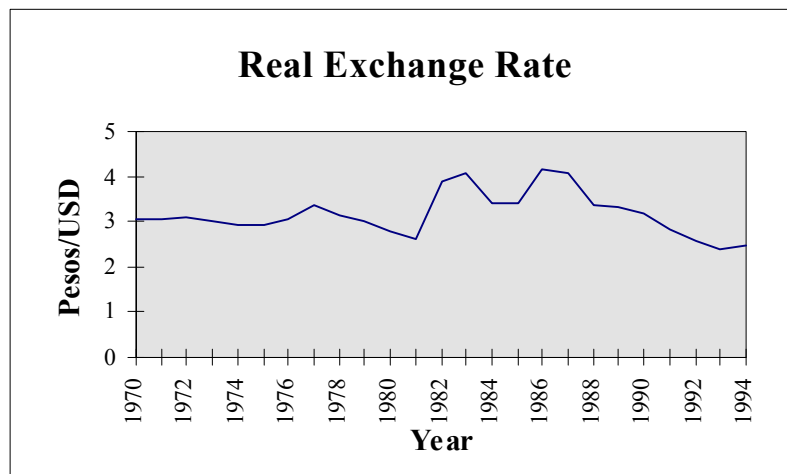
	1987	1989	1991	1992	1993	1994
Public Consumption	-1.2	-0.1	3.9	2.3	2.0	2.5
Private Consumption	-0.1	6.8	4.9	3.9	0.2	3.7

Source: OECD Economic Outlook, December 1995

Meanwhile, the Mexican peso continued to revalue in real terms, although it was periodically devaluated in real terms. Appreciation of the peso in real terms aggravated the trade deficit over the period 1988-1994⁽¹⁰⁾ (Figure-2).

FIGURE-2

Mexican Real Exchange Rate 1970-1994

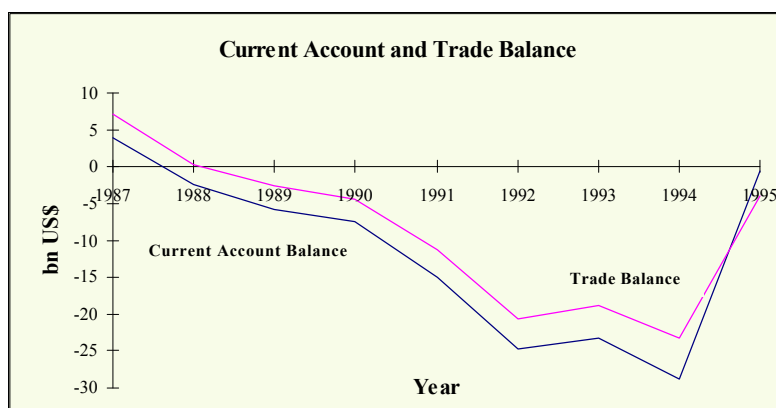


Source: EDIM International Macroeconomic Policy Forum, 1996.

In addition to the growing trade deficit, substantial income transfers for portfolio investments contributed to the ever-expanding current account deficit until the end of 1994. Unlike many other developing countries with large current account deficits, Mexico's deficit could be entirely attributed to the private sector savings deficit, because the Mexican government ran a budget surplus for the 1991-1994 period.

FIGURE-3

**Mexico's Current Account and Trade Balance (bn US\$)
1987-1995**



Source: International Financial Statistics, December 1995.

This was the state of the Mexican economy entering the election year in January 1994. At the end of 1993, few economists or business analysts had forecasted any major downturns for the Mexican economy since there were not many macroeconomic indicators pointing to greater instability. Therefore, what happened in 1994 is crucial to understanding the nature of the Mexican economic crisis. The following section focuses on the immediate pre-crisis period.

2.2-1994 and the Development of the Crisis

At the end of 1993, most economists and Mexican government officials were quite confident about the overall stability of the economy, and they were quick to point out Mexico's readiness for economic integration with the U.S. and Canada.

However, in 1994, the trade deficit continued to grow and the current account balance was likely to deteriorate even further under NAFTA. Most economists attributed the deficit to the appreciation of the peso, in real terms, against the U.S. dollar and other major currencies and indicated the urgency of a sizable devaluation, which did not take place under the controlled exchange rate structure. On the other hand, some economists argued that the revaluation of the peso was only a natural result of the increased competitiveness of the Mexican economy which had gone through a major and successful restructuring. As previously indicated, there was less concern about the current account deficit, simply because it was a result of decisions made by private parties, i.e., it was driven by the private sector savings deficit², and was financed through private capital flows⁽¹¹⁾.

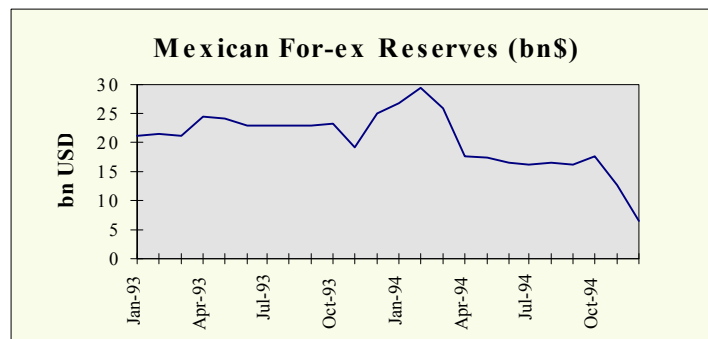
Another sign of the crisis to come was the decline in the real GDP growth rate from 4.6% in 1990 to a mere 0.5% in 1993. It was conceivable and even expected that there would be a lapse in fiscal discipline and an end to fiscal expansion during the election year to create a sense of higher growth and prosperity among the electorate. One should also note the long-term weakness of the Mexican private savings ratio which declined to 14.1% of the GDP, an unusually low rate for an emerging market economy (Table-5), and the surge in private consumption growth over the 1989-1992 period (Table-6). The low level of savings created an increasing dependency on capital inflows to finance the growing Mexican economy.

In short, the Mexican economy entered election year 1994 with a disciplined government sector and sound monetary policies which managed to hold inflation at 8.3% and real interest rates at around 3.5%. However, stabilization policies implemented throughout the late 1980s and early 1990s created wide-spread economic depression which paved the way for regional tensions in the economically deprived parts of the country. The first shock to the system was the assassination of presidential candidate Collosio

in March 1994. The assassination underscored increasing levels of political risk; therefore, many international investors quickly liquidated their portfolios and demanded a higher risk compensation for Mexican financial instruments⁽¹²⁾. This massive liquidation put significant pressure on the currency and the peso devalued by 6% while interest rates on short-term peso-denominated Cetes doubled to 18% during this brief turmoil⁽¹³⁾. The initial increase in interest rates and a \$6.75bn short-term credit line from the U.S. and Canada helped to ease the immediate pressure in the financial markets. Monetary authorities' decisions and the Bank of Mexico's intervention proved to be effective in calming the foreign exchange markets⁽¹⁴⁾. For the most part, foreign currency reserves had stabilized except for a sharp drop from \$29.2bn in February to \$17.67bn in April (Figure-4). The interest rates on Cetes and Tesebonos declined, and no major inflationary pressure was felt⁽¹⁵⁾. The Mexican central bank tried to fight the interest rate increases by excessively extending domestic credit, which augmented the drain of the bank's foreign exchange reserves throughout 1994, and by converting \$13bn in short-term liabilities from peso denominated cetes to dollar-denominated Tesobonos⁽¹⁶⁾.

FIGURE-4

Foreign Exchange Reserves 1993-1994

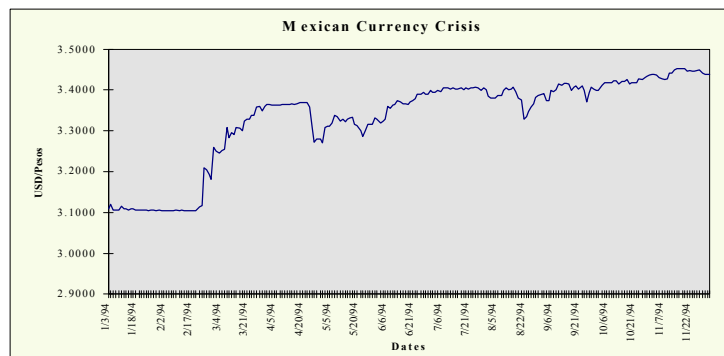


Source: EDIM's International Macroeconomic Policy Forum

The rapid credit extension by the Bank of Mexico did stimulate the economy and increase liquidity in the pre-election period⁽¹⁷⁾. However, in the aftermath of the election, speculation as to the commitment of the new government to the exchange rate structure triggered a run on foreign currencies. Meanwhile, government officials' persistence to maintain short-term interest rates on the 28 day cetes at the 13-14% range combined with the Chiapas uprising fueled demand for foreign currencies and the already drained reserves sunk to \$6.55bn. The peso/USD rate jumped from 3.4662 on December 19 to 3.9500 on December 20, 1994, when Finance Minister Serra announced that the upper limit of the exchange rate band would be raised by 13% from 3.4662 in December 1994 (Figure-5). On December 21, the government affirmed its commitment to the new exchange rate band, while the central bank spent \$6bn as capital rushed out of Mexico. The government's decision to let the peso float came the following day and the peso immediately depreciated against the US dollar and stood at 4.8500 peso/USD. The peso devalued by 40% in only three days. The volatility of the peso continued until June, when it was finally

FIGURE-5

Exchange Rates During the Crisis (Peso/USD)



Source: Federal Reserve Bank of Chicago

stabilized around 6.125 pesos per dollar. Between February and June, the peso oscillated from 5.9000 to 7.6000 pesos per dollar.

2.3-The Factors Behind the Crisis

The literature on the Mexican crisis provides four complimentary explanations. The first explanation emphasizes the importance of adverse internal and external shocks. It also acknowledges the deterioration of some of Mexico's monetary and fiscal fundamentals in 1994. The assassination of presidential candidate Collosio, the Chiapas uprising, and the surge in U.S. interest rates are cited as major internal and external economic shocks. It is argued that the inherent difficulties in understanding and forecasting the potential effects of these shocks undermined Mexican officials' ability to develop an appropriate course of action. More specifically, the Mexican government's insistence on lowering interest rates in the wake of a panic in the financial markets⁽¹⁸⁾, and substituting Tesobonos for Cetes were attributed to the misjudgment about the nature of these shocks--which proved to be more than transitory. Although this argument explains the inadequacy of Mexico's monetary policy throughout 1994, it does not emphasize the importance of the underlying macroeconomic environment.

The second argument addresses the policy choices which undermined the stability of the Mexican economy⁽¹⁹⁾. It is argued that although the adverse internal and external shocks experienced in 1994 called for a tighter monetary policy, Mexican authorities continued lowering interest rates in order to align domestic interest rates with international interest rates. Oblivious to the drain in foreign currency reserves, Mexican authorities were reluctant to increase short-term interest rates until the second week of December⁽²⁰⁾. Finally, the expansion of net domestic credit to jump-start the economy created funds but also drained much of the

central bank's reserves. The credit expansion reflected substantial growth in the central bank's balance sheet, but created inflationary pressure towards the end of the year and ultimately eroded confidence that the exchange rate could be maintained within the predetermined band⁽²¹⁾.

The third and most plausible explanation is based on the deterioration of external factors and emphasizes the "unsustainability of the external position"⁽²²⁾. The deterioration of the trade balance and the current account balance can be attributed to the peso's appreciation in real terms. It is argued that the real appreciation of the peso may have been due to an equilibrium response to structural changes, which possibly improved the overall efficiency of the Mexican economy by increasing wealth, which in turn spurred domestic consumption. In other words, according to this view, the peso appreciation was not a deviation from economic principles, but rather the result of prevailing economic principles. It should also be emphasized that the resulting current account deficit was a consequence of decisions made by the private sectors rather than of fiscal expansion. The fact, that it became unsustainable when it reached 8% of the GDP, suggests the existence of a structural limit to the financing of the current account deficit by foreign creditors regardless the underlying cause⁽²³⁾.

The last explanation for the Mexican peso crisis is investor panic which simply suggests that policy responses developed in the wake of the shocks were inappropriate⁽²⁴⁾. According to this view, devaluing the peso 25% against the US dollar, instead 13% in March, and maintaining higher interest rates for the 28-day Cetes would have mitigated the crisis.

In summary, the emergence of the Mexican crisis is attributed to a set of interrelated factors: the existence of major internal and external shocks and investor panic, a slight deterioration in macroeconomic balances, and a significant deterioration of external balances. However, an assessment of these explanations

suggests that the role of capital inflows has been either downplayed or overlooked as a background factor. In other words destabilizing nature of massive capital flows and excessive exposure to the fluctuations in the global financial markets due to Mexican financial markets' rapid integration to the global financial system has not been emphasized sufficiently. We argue that this factor has been very influential in aggravating the sparks caused by internal and external shocks leading to the explosive developments in March and particularly in December 1994. Therefore it is crucial to put this factor into a perspective to complete the analysis of the crisis.

It should be emphasized that the attitude of the Mexican authorities towards financial integration has been labeled as "exemplary" by the international financial community and it's been mainly motivated by the legacy of heavy debt burden and the 1982 experience, which created the illusion that non-debt creating capital flows were less troublesome than the debt. Infact one would share the conviction that the Mexican authorities had, if the majority of the capital flows had been directed to productive sectors of the economy and the flows had been stable ⁽²⁵⁾. However, the evidence suggests that a significant share of these investments were placed in the Mexican equities and government debt instruments.

TABLE-7

A Breakdown of The Capital Inflows (m USD)

	1991	1992	1993	1994
Direct Investments	4,742	4,393	4,389	7,978
Portfolio Investments	12,741	18,041	28,919	8,189
Other Investments	8,654	-947	4,054	2,059

Source: Balance of Payments Yearbook, 1995

In 1994 almost 25% of the Mexican Stock Market capitalization was owned by the foreign investors and 70% of the trading was accounted by the foreign institutional investors⁽²⁶⁾. The international finance literature provides ample evidence that the importance of exchange rates increase with the share of foreign investor activity in the domestic capital markets, simply because future returns are partly determined by the exchange rate fluctuations. Indeed, the linkage between inherently volatile foreign exchange markets and the capital markets creates a chaotic feedback and may easily evolve into costly financial crises. Such feedbacks are much more serious in emerging markets when the presence of foreigners is significant and currency substitution is rampant⁽²⁷⁾. In other words as expectations of currency depreciation can trigger massive capital outflows and may depress both the exchange rates and the security prices, a bearish mood in the capital markets or profit taking may lead to a currency depreciation as well as sharp declines in security prices. Additionally, in the absence of experience and expertise in the domestic capital markets, local agents tend to follow or mimic the experienced foreign institutional investors, and aggravate the implications of foreign investor reactions to internal and external shocks. Finally, offsetting these reactions by monetary policy is not as easy, and sharp swings in the interest rates have costly implications on the real sectors of the economy⁽²⁸⁾.

Viewing the Mexican experience in these lines explains why it has reached to an extent that can not be easily justified by macroeconomic fundamentals and severity of the shocks. Also the Mexican experience confirms all the concerns listed above and clearly demonstrates the extent of the exposure that the emerging markets are facing in the process of increasing integration to the global financial system. Although this conclusion should not be construed as an invitation for universal capital controls, it certainly stresses the importance of surveillance and selectivity in the case of emerging economies.

3-THE TURKISH CURRENCY CRISIS

3.1-Macroeconomic Background

Turkey's economic and political performance has been cyclical since the 1960s. The first severe crisis of the late 1950s was followed by military intervention. Turkey's second major crisis preceded the 1973 oil-shock in 1971. Despite unfavorable global conditions, recovery from the second economic crisis was rather quick given Turkey's small size and relatively closed economy. Factors such as the remittances of the 500,000 Turkish workers, an import substitution industrialization policy, and high import barriers contributed to Turkey's economic growth; it was not until the mid 1970's that Turkey enacted severe foreign exchange restrictions⁽²⁹⁾. Oblivious to the direct and indirect consequences of an oil shock to a closed economy, Turkey continued its high growth policies which ultimately contributed to the high levels of structural inflation which Turkey must still confront.

The rising austerity in Western Europe throughout the 1970s led to a substantial reduction in Turkish workers' remittances as exports declined and imports surged in the wake of an increasingly overvalued currency managed under the fixed exchange rate system. Current account deficits were financed through short-term borrowing arrangements whereby, government exchange rate guarantees were provided to private borrowers⁽³⁰⁾. By mid 1977, the Turkish government was caught in a severe liquidity crisis and foreign creditors refused any further lending. In the absence of adequate domestic savings, private and public investments reached 25% of the GDP; thereby, making extensive external borrowing the engine for growth. The long period of economic growth that had begun in the early 1960s reached its climax in 1976; this period of growth ended with a debt rescheduling in 1977⁽³¹⁾.

January 1980 was another milestone for the Turkish economy. After two IMF initiatives, ended in failure in 1978, the government

announced extensive structural reforms and a stabilization program endorsed by the International Monetary Fund and the World Bank. After a long period of import substitution policies, the economic reforms of January 1980 favored expansion into the global marketplace. Particular emphasis was placed on structural reform and stabilization programs that would help transform Turkey's closed economy into an open one; there was also a new reliance on market forces rather than government control. Reforms addressing exchange rates, foreign trade, financial markets, public enterprises and foreign direct investments were initiated. Recognition of the negative implications of an overvalued currency on the international competitiveness and the stabilization of the domestic economy led to an initial devaluation of the Turkish lira against the US dollar by 33% in 1980; at this time, Turkey adopted a flexible exchange rate policy⁽³²⁾. The Turkish lira was devalued in order to offset high inflation and preserve export competitiveness. In contrast to the pre-1980 period of overvaluation, the Turkish lira was depreciated by 50% between 1979 and 1987 in real terms⁽³³⁾.

The financial liberalization program aimed to deregulate interest rates and develop capital markets. A substantial deregulation of interest rates resulted in a sharp increase in interest rates for time deposits, which stimulated domestic saving and reduced domestic consumption. Reduced domestic consumption and the recovery in capacity utilization ratios combined with an undervalued Turkish lira stimulated exports; exports surged in the first half of the 1980s from as low as \$2.9bn in 1980 to \$7.9bn in 1985 (Table-8).

The third wave of economic reforms focused on reducing the public sector's deficit. A pricing system reflecting costs of production in State Economic Enterprises (SEE), was put in effect; SEEs ventured to be self-financing organizations. The depressed wage structure mandated by the military regime helped SEEs to reduce losses. Public sector investments were limited strictly to infrastructure projects and privatization was included on the government's agenda⁽³⁴⁾.

TABLE-8**Turkey's Exports and Imports (bn US\$)
1980-1985**

	1980	1981	1982	1983	1984	1985
Exports	2.9	4.7	5.7	5.7	7.1	7.9
Imports	7.5	8.6	8.4	8.7	10.0	10.9

Source: Celasun and Rodrik

During the first half of the 1980s, Turkey's real GDP growth rate reached an annual average rate of 4%, mostly motivated by export expansion and private investments. Inflation was contained under 40% until a surge in 1988 (Table-9).

TABLE-9**Turkey's Real GDP Growth Rates and
Consumer Price Inflation (%)
1981-1993**

	81-85	1986	1988	1990	1991	1992	1993
Growth	4.9	7.0	2.1	9.3	0.9	6.0	7.5
C.P.I.	38.7	34.6	73.7	60.3	66.0	70.1	66.1

Source: OECD Economic Outlook, December 1995.

The Turkish economy entered another expansionary period after 1986, changing the basic course of the liberalization program. An average 6% annual real rate of growth was achieved (Table-9); fiscal balances deteriorated and further instability was on the horizon for the 1990s. The following section reviews the fiscal and monetary

implications of the structural reform program on the Turkish macroeconomic landscape, and establishes the connection to the 1994 currency crisis.

3.1.1-Fiscal Policy Implications and 1990s

The 1980 structural reform program centered around limiting the role of the government. The first steps taken towards this goal were the introduction of market-oriented reforms and the independent management of state owned enterprises which were denied the managerial autonomy to react to rapidly changing market conditions in an inflationary environment. Public enterprises faced new tax regulations but the newly imposed regulations were effective only at accelerating the tax collection process rather than expanding the overall tax base. The results yielded only marginal increases in tax income. A particularly significant result of these developments was an increase in the contribution of the revenues of state owned enterprises to the aggregate public revenues⁽³⁵⁾. During 1980-1983, the stagnation of public sector investments as well as a decline in current expenditures, due to depressed wages in the public sector, helped reduce the budget deficit and the public sector borrowing requirement, thus alleviating inflationary pressures (Table-10).

TABLE-10

Turkey's Public Sector Borrowing Requirement as Percentage of GNP (%)1980-1987

	1980	1982	1983	1984	1985	1986	1987
PSBR/GNP	10.0	6.0	5.2	6.5	4.9	4.5	8.3

Source: Turkish Economy in 1993, Undersecretariat of Treasury, 1994

(35)

The 1983-1986 period was not qualitatively different from the 1980-1983 period in terms of fiscal balances. A reduction in corporate taxes and the introduction of value-added taxes did not impact overall revenues as a percentage of GNP. On the other hand, the composition of public expenditures shifted from current expenditures to investments, albeit leaving overall expenditures as a percentage of GNP unchanged (Table-11).

TABLE-11

**Turkey's Government Revenues, Expenditures, and
Public Sector Borrowing Requirement
1988-1994**

	1988	1990	1991	1992	1993	1994
Revenues (bn \$)	22.2	20.2	18.2	18.3	19.6	19.3
Expenditures (bn \$)	27.0	27.6	28.4	28.9	31.7	26.8
PSBR/GNP	6.2	10.5	14.4	14.9	16.3	17.1

Source: OECD Economic Outlook, December 1995

The fiscal deficit remained stable in this period but substantial domestic borrowing ensued in order to service the public sector's external debt. The unwieldy borrowing led to further deterioration of fiscal balances. The 1987 election year represented a major shift in the fiscal balances of the Turkish economy (Table-12). Although monetary policies implemented in the post election period resulted in a temporary reduction in the public sector borrowing requirement, the budget deficit continued to increase over the 1989-1993 period and the public sector borrowing requirement reached 14.9% of GNP in 1992.

TABLE-12**Turkey's External and Domestic Debt (% of GNP)
1985- 1994**

Year	External	Domestic
1985	48.1	19.4
1986	55.5	20.2
1987	58.8	27.6
1988	57.5	21.7
1989	52.0	18.0
1990	44.5	14.5
1991	40.4	15.0
1992	36.2	17.6
1993	37.9	18.5
1994	49.4	18.7

Source: Turkish Economy in 1993, Undersecretariat of Treasury, 1994

The transfer problem due to the external debt service requirement continued to exist and reached 12-15% of GNP, thereby putting significant pressure on real interest rates ⁽³⁶⁾. As a result of populist economic policies, Turkey was trapped in a vicious cycle of increasing government expenditures, budget deficits and spiraling government debt which created a high inflationary economy. Although the level of domestic debt, 18.7% of GNP in 1994, was very moderate by international standards, its short-term maturity structure heightened the economy's level of instability. On the other hand, although the external debt of Turkey was around 49% of the GNP as of 1994, it had a less worrisome maturity structure with only 27% of the total falling into short-term maturities ⁽³⁷⁾.

3.1.2-Monetary Policy Implications

The monetary policy dimension of the 1980 stabilization program exhibited all the characteristics of an economy's transition from being closed to becoming open. The removal of direct controls over exchange rates, foreign trade and interest rates called for effective uses of indirect control tools to implement monetary policy. Turkey's transition has not been smooth. The first act of liberalization addressed the exchange rate structure. After the devaluation of the lira against the US dollar by 40%, it continued to devalue against the German mark-US dollar currency basket. The devaluation rate was simply based on the inflation rate differential to preserve export competitiveness⁽³⁸⁾.

The second act of liberalization targeted interest rates, and the central bank's control over deposit rates was removed until its reinstatement in 1983 following a major crisis in the banking sector. In this short period, deposit rates were the major tool used to control the demand for foreign exchange. A major liberalization move came in 1984; Turkish residents were allowed to hold foreign exchange denominated bank deposits in Turkish banks. The implications of this deregulation on the monetary policy was far more severe than it was initially envisioned. The already existing currency substitution accelerated and central bank control over the monetary aggregates was impaired⁽³⁹⁾. In 1985, as the real devaluation of the Turkish lira decelerated, foreign exchange flows to the central bank stopped and created problems for the debt service. The central bank reacted to this shortage by imposing compulsory transfer requirements for foreign currency purchases by commercial banks and increasing reserve requirements for foreign exchange denominated bank deposits.

In 1985, public sector borrowing continued to increase and domestic debt service exceeded both foreign debt service and outstanding domestic debt stock. In addition to its borrowing, the treasury's reliance on central bank resources created major difficulties in the implementation of the first monetary program⁽⁴⁰⁾. In the absence of an interbank market, the central banks' efforts to control

inflation targeting M2 was not successful until the institution of the interbank money market in 1987 which facilitated open market operations. Meanwhile, dominance of the treasury in the domestic debt market rendered interest rates a useless tool for the central bank, since interest rates were determined by the domestic debt market. Until 1989, the central bank's open position, i.e. the difference between foreign exchange liabilities and foreign exchange assets grew rapidly and were monetized by the central bank³⁽⁴¹⁾. Foreign exchange losses incurred by the central bank reached 45% of the central bank's assets and became a substantial source of monetization. In 1989, the central bank's control over monetary expansion became practically impossible due to the nature of the central bank's balance sheet. The balance sheet was increasingly dominated by accounts over which the central bank had little control. At this time, the money that the central bank actually controlled was not more than 30% of total liabilities⁽⁴²⁾.

The liberalization of the capital account in 1989 was another milestone for the Turkish economy; it corresponded to the implementation of the first full-scale monetary program which aimed to control the growth of the central bank's balance sheet and to focus on an anti-inflationary policy. As the fiscal deficit continued to soar, the treasury's appetite for funds pushed nominal and real interest rates even higher. Substantial profit opportunities provided by high real interest rates attracted foreign investors seeking short-term lucrative placement alternatives for their diversified portfolios as well as domestic banks which brought in funds borrowed in the international capital markets. The growing attention to fund the public sector deficit led to a surge in capital inflows between 1989 and 1994 (Table-13). Net total capital inflows were more than sufficient to finance the current account deficit. As the resulting inflows turned the basic balance to a surplus, the Turkish lira began to revalue in real terms⁴⁽⁴³⁾.

The monetary program initiated in 1991 was hindered by the invasion of Kuwait, and the central bank failed to properly oversee and manage the balance sheet. The economic implications of the Gulf War

TABLE-13**Turkey's Balance of Payments (bn US\$)
1988-1994**

	1988	1989	1990	1991	1992	1993	1994
Trade Acct.	-1.78	-4.22	-9.55	-7.33	-8.19	-14.16	-4.22
Current Acct.	1.60	0.94	-2.63	0.27	-0.94	-6.38	2.63
Capital Flows	-0.44	1.77	3.57	-2.40	3.65	8.96	-4.19
Basic Balance	1.15	2.71	0.94	-2.13	2.71	2.58	-1.56

Source: International Financial Statistics, December 1995

were severe for Turkey. Although GDP growth rates reached 6% in real terms in 1992, the economy could only recover in the second half of the year. The expansionary policies of 1993 led to 7.5% real GDP growth driven primarily by consumption. The central bank continued to lose control over the balance sheet. Persistence of the treasury to impose lower interest rates on the market destabilized the financial markets and capital inflows slowed in August and September 1993. The cancellation of regular treasury auctions left substantial liquidity in the markets and increased pressure in the foreign exchange markets⁵⁽⁴⁴⁾.

Deterioration of the trade balance, which started in 1989, continued and the current account balance peaked as the Turkish economy overheated. Although the sluggish growth of exports was mainly attributed to the overvaluation of the Turkish lira, the abolishment of lucrative incentives for exporters in the context of multilateral and bilateral trade liberalization also contributed to the significant decline in export growth. On the other hand, growing economic activity and domestic consumption in 1992, and particularly in 1993, stimulated imports of intermediate goods. The increase in imported capital goods and particularly consumer goods was far behind the increase in intermediate goods. As a result of this surge in imports, the trade balance at \$14.6 bn reached its highest level in Turkey's

economic history (Table-13). As the usual net income from tourism and workers' remittances fell short of making up the difference, current account balance spiked to \$6.4 bn (Table-13). As the 1994 experience suggests, the level that the current account deficit reached at the end of 1993 was not sustainable with the underlying macroeconomic balances of the Turkish economy. The following section presents a detailed analysis of the development of the currency crisis in 1994.

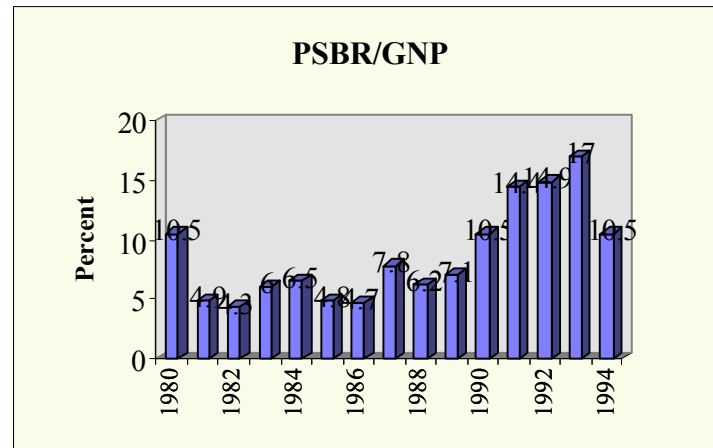
3.2-The Development of Turkey's Currency Crisis

The apparent and readily identifiable reason behind the 1994 crisis was the mounting current account balance due to the revaluation of the Turkish lira in real terms, and investors' decisions to stop financing the current account deficit at the current interest rates. However, the underlying conditions under which the Turkish crises evolved are far more complicated than this analysis warrants. The first notable characteristic was the continuous deterioration of fiscal balances since 1987. The second notable characteristic was the central bank's lost control over the monetary aggregates. The third notable factor was the reliance upon macroeconomic management that was not compatible with a liberal exchange rate structure and the capital account.

The trends in fiscal balances have been analyzed in the previous sections. The public sector's sizable deficit, the cash requirements of money-losing state owned enterprises, and poor tax collection forced the treasury to frequently resort to the domestic debt market. As the following chart indicates (Figure-6), the public sector borrowing requirement increased substantially after 1989 and reached 17% of GNP in 1993. The management of domestic debt became increasingly difficult, as the debt financing steadily shifted towards shorter maturities and interest payments reached to 6% of GNP in 1993 from 3.5% of GNP in 1990 (Table-14).

FIGURE-6

**Turkey's Public Sector Deficit (PSBR/GNP)
1980-1993**



Source: OECD Economic Surveys: Turkey, 1994

TABLE-14

**Turkey's Domestic Debt and Interest Payments
1990-1994**

	1990	1991	1992	1993	1994
Interest Paym./GNP¹	3.5	3.8	3.7	6.0	7.5
Principal Paym./GNP²	2.8	4.8	6.5	9.5	11.3
Debt Service/GNP³	5.2	7.5	9.3	14.3	17.1
Domestic Debt/GNP	14.4	14.8	16.5	18.5	11.7

¹ Interest Payments for domestic and external debt, ² Domestic principal Payments, ³ Domestic Debt Service

The central bank printed lira and Turkey maintained a high but controlled inflation rate ranging from 50-70%. There are two important parallel developments which impaired the central bank's monetary policies and its power to stabilize the exchange rates and the inflation rate at 60-70%: The first one was the deterioration of the central bank's balance sheet and its failure to reverse this deterioration. The monetary program initiated in 1989 aimed to control balance sheet growth and to change the asset and liability structure to facilitate more effective control over the monetary aggregates. The objective was to reduce the share of foreign exchange liabilities in favor of central bank money on the liability side and to increase foreign exchange denominated assets in favor of domestic assets to reduce the central bank's open position⁽⁴⁵⁾. Overall, the Gulf War undermined both efforts, even though the rehabilitation of the balance sheet was accomplished to some extent.

TABLE-15

**The Analytical Balance Sheet of the Turkish Central Bank
1989-1993**

	1989	1990	1991	1992	1993	Target
Total Assets	100	100	100	100	100	100
Foreign Assets	36.6	42.0	40.0	42.7	44.6	50
Domestic Assets	63.3	58.1	59.9	57.2	55.3	50
Credits	20.0	14.6	26.4	37.6	44.0	35
Valuation Acct.	43.3	43.3	33.5	19.5	11.2	15
Total Liabilities						
Forex Liabilities	62.1	60.9	54.4	50.4	56.1	25
External	42.1	42.8	39.6	34.5	39.0	25
Domestic	19.8	18.0	14.8	15.8	17.1	0
C. B. M.	37.8	39.0	45.3	49.5	43.8	75
Liquidity	16.9	22.9	21.9	20.7	21.7	45

Source: Gokce, 1995

The second parallel development was related to currency substitution. As foreign exchange became part of the investment portfolios of Turkish investors in 1985, the share of foreign exchange denominated deposits increased substantially (Table-16). The share of monetary aggregates, excluding foreign exchange denominated time deposits such as M1 and M2 in GDP, declined significantly. This was a clear indication of the concerns about the reliability of the Turkish lira as a medium of exchange. Additionally, the contraction of M1 reduced the monetizable monetary base which caused higher inflation for a given level of monetization of the budget deficit; as M1 and M2 shrink, money velocity increases and the increase in the money velocity augments the implications of the monetary policy and impairs the efforts of financial stabilization. This was precisely one of the factors behind the instability of the Turkish economy at the end of 1993.

TABLE-16

Turkey's Monetary Aggregates: 1986-1993

Year	M1/GDP	M2/GDP	M2Y/GDP
1986	16.5	38.3	46.0
1987	12.8	26.2	34.2
1988	8.9	21.3	28.7
1989	10.5	25.4	33.0
1990	9.7	22.1	28.9
1991	8.5	22.1	30.3
1992	5.9	14.3	22.1
1993	5.1	12.6	21.8

Source: Monthly Economic Indicators, June 1995, State Planning Organization

The deterioration of the fiscal balances and the development of the monetary conditions described above were not new to the Turkish

economy, and persisted throughout the 1990s. Similarly, deterioration of the export growth could be traced back to 1988. After a decade-long 15% annual growth in dollar terms, export growth lost the momentum. Although the devaluation of the Turkish lira continued in nominal terms, real devaluation of the Turkish lira had been reversed since 1989 and had had a significant impact on the export competitiveness of poorly differentiated Turkish export goods. On a purchasing power parity (PPP) calculation based on the GDP deflators, at the end of 1993, the Turkish lira was roughly 40% overvalued. This by itself does not explain the entire crisis, particularly since the Turkish lira's devaluation at the end of 1993 was only 3% short of a PPP implied adjustment and an index of real exchange rate based on weighted trade averages suggests a far lower overvaluation⁽⁴⁶⁾. It does, however, indicate the importance of a currency's appreciation when the export portfolio is dominated by commodities rather than differentiated items and when the appreciation in real terms is not accompanied by accommodating productivity increases.

TABLE-17

**Turkey's Current Account Balance (mil US\$)
1988-1993**

	1989	1990	1991	1992	1993
Exports	11,664	12,959	13,593	14,891	15,610
Imports	15,972	22,581	21,007	23,081	29,772
Other Inflows	5,309	6,997	7,672	7,248	7,782
Current Account	961	-2,625	258	-942	-6,380

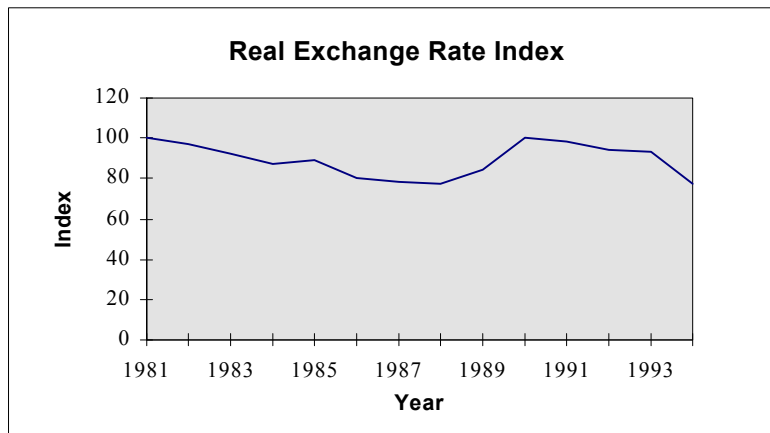
Source: International Financial Statistics, December 1995

The appreciation of the Turkish lira against the German mark and US dollar is certainly justifiable under a flexible exchange rate regime with

capital mobility. The basic balance suggests an appreciation of the Turkish Lira except in 1991. Although the central bank has been criticized for its neutral attitude during the appreciation of the Turkish lira, it is argued that the central bank did properly focus on the stabilization of the exchange rates⁽⁴⁷⁾. It is also appropriately suggested that the central bank almost avoided a further appreciation by sterilizing capital inflows and increasing the Turkish lira supply⁽⁴⁸⁾.

FIGURE-7

Real Exchange Rate Index 1981-1993



As the underlying instability of the Turkish economy grew, the central bank's control over the monetary aggregates weakened and the external balances rapidly deteriorated. The government's insistence on reducing interest rates was the foremost factor that triggered the Turkish currency crisis. The treatment of interest rates, in an open

TABLE-18**Turkey's Capital Flows (bn US\$)
1988-1993**

	1989	1990	1991	1992	1993
Direct Invest.	663	700	783	779	622
Portfolio Invst.	1,586	547	623	2,411	3,917
Other L.T. Inv.	-885	-210	-783	-938	1,370
S.T. Cap. Flows	-584	3,000	-3,020	1,396	3,054
Capital Acct.Bal.	780	4,037	-2,397	3,648	8,963

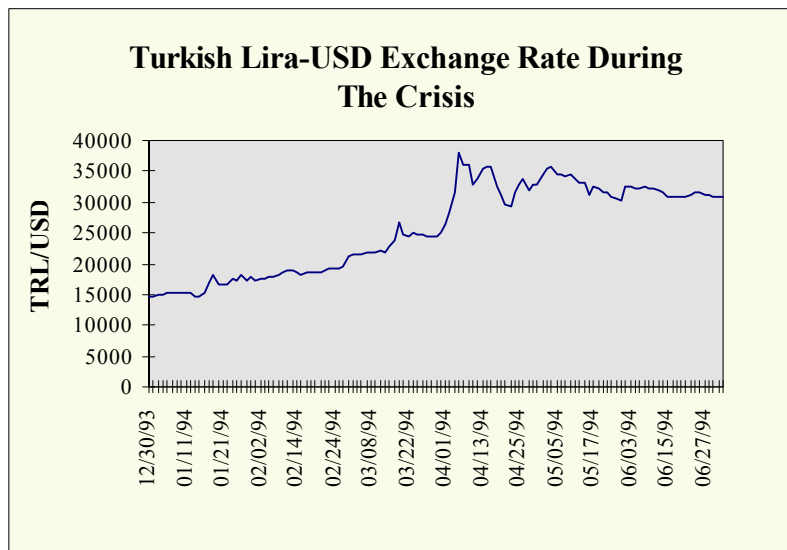
Source: International Financial Statistics, December 1995

economy, as a variable independent from the external balances of the economy was a critical policy mistake on the part of the government. The implementation of lower interest rates, with a higher risk premium, was practically rejected by the market, and the liquid funds which remained in the market were increasingly directed towards foreign currencies because of the anticipation of a possible devaluation. The disparity between the central bank's quoted rates and the quoted free market rates gradually exceeded 1.5%⁽⁴⁹⁾. On January 19, 1994, the TL/USD rate moved from 15,420 to 17,000 and a formal devaluation of 13% occurred when the spread between the central bank rate and the free market rate widened to 15-20%. Subsequently, interest rates became exceedingly high and the stock market crashed. The 13% devaluation was just the start; the reduced debt rating ignited a panic in the market and the TL/USD rate surged to 26,750 on March 18, 1994. Most Turkish banks were caught with substantial open positions incurred sizable losses⁽⁵⁰⁾. Finally, in the last round of volatility the exchange rate reached 38,000 TL/USD on April 6, 1994 and bounced back and forth between 32,000 and 36,000. Meanwhile, 12 Month T-bill yields climbed to 127% in April and then reached 225% on May 17, 1994⁽⁵¹⁾. The market only calmed down after this last auction which pushed the T-bill yield over the 200% mark. Up

until May 17th, overnight repo rates occasionally shot to 1000%; nobody wanted to touch the Turkish lira or anything associated with it. Finally, in this massive turmoil, the Turkish economy grounded to a halt. The result was major damage to the financial system and banking industry, which had showed impressive growth just a few months earlier. The Turkish economy shrunk by 11% in the aftermath of the crisis and by 6% in 1994 after a sterling 7.5% growth in 1993.

FIGURE-8

Turkish Lira/US Dollar Exchange Rate



Source: Metastock Data Base, Istanbul, Turkey

4. A COMPARATIVE ANALYSIS OF THE MEXICAN AND TURKISH CURRENCY CRISES

Although the immediate developments and resulting effects of both crises exhibit astonishing similarities, the macroeconomic background differs significantly. In Mexico's case, the fiscal balances were entirely in place, and the government sector produced occasional operational surpluses. There was no sign of fiscal corruption and despite the forthcoming election year prudent macroeconomic management continued in 1993. Although there was a slight deviation from this sound path during 1994, it never reached an alarming level. In contrast, the Turkish fiscal balances were in a long trend of continuous deterioration and exhibited all signs of macroeconomic mismanagement. As a result, while the Mexican economy maintained inflation around 8%, the Turkish economy registered 66% inflation during the 1993 expansion period. Accordingly, interest rates for public debt instruments were substantially different. While the 12 month peso-denominated bonds yielded 10.9% in January 1994, the corresponding yield for Turkish government bonds was 88% prior to the crisis. Although both economies were tuned to long-term growth, Mexican growth was sluggish in 1993 and real growth was slow throughout the 1990s. On the other hand, the Turkish economy grew 9% in 1992 followed by strong growth in 1993. The result was the previously described discrepancy in the fiscal balances.

The differences in the fiscal balances also underscore the fundamental drivers of the current account deficit. In Turkey's case, the deficit was driven by the public sector deficit, while in the Mexico's case it was mainly the result of a private sector savings deficit. However, a common macroeconomic development was the surge in domestic consumption in both cases. This suggests that substantial capital inflows were partially used to finance domestic consumption in both cases. The surge in the net domestic credit in both cases supports this argument. This was particularly visible in

the Turkish case where the consumer credits by the commercial banks peaked in 1993.

The most significant similarity between the two cases was the appreciation of the currencies in real terms and the quick deterioration of the external balances. Although the argument that both currencies were overvalued is somewhat controversial, in both cases it was evident that at the prevailing exchange rates export competitiveness was deteriorated. It should be noted that the real appreciation of the Turkish Lira and the Peso evolved under fundamentally distinct exchange rate regimes. The common factor leading to the appreciation of both currencies was identified as capital inflows which economically justified the new equilibriums reached by the currencies. However, a surge in the trade deficit brought the current account deficit to apparently unsustainable levels in both cases. This indicates the emergence of potential problems associated with a surge in economic activity when a currency is overvalued for long periods of time. The similarity in both cases, despite differences in the dynamics behind the revaluation, suggests that regardless of the underlying cause of real appreciation, developing economies are exposed to the risk of deterioration of the current balances in the short-run which could ignite a crisis.

Another significant similarity between the two cases is the persistence of the authorities to reduce interest rates or maintain the existing low rates when the first signs of turmoil in the market became apparent. In Turkey's case, there has been an almost foolish effort to reduce interest rates when there has been no signs of relief of inflation. In Mexico's case, there has been a resistance to maintain interest rates at the current levels as international interest rates surge and risk premiums on Mexican financial assets increase due to domestic turmoil. In both cases, there are signs of a lack of understanding of the fundamental dynamics of an open economy with capital mobility as well as lack of an accurate assesment of the nature and potential implications of the shocks.

Also in both cases the government authorities tried simultaneously to control two macroeconomic indicators, mainly exchange rates and interest rates, while it is most feasible to control only one of them at a time.

Finally, in both cases the levels of capital inflows in relation to the size of the economy and the magnitude of the other accounts for external transactions suggest destabilizing effects. Due to the relative size of the capital flows, it is simply impossible to resist the new equilibrium imposed by the capital flows, regardless of the dynamics of the other balance of payments magnitudes such as trade and unilateral transfers in an open economy. The catch is that there is inherent volatility in financial markets, and a possibility that this volatility is driven by factors other than fundamental or exogenous variables of the economy as in the case of Mexico. Turkey also experienced traces of the same symptoms; the major blow came just after the Standard and Poor's country debt rating reduction--even though it was long expected. An interesting distinction between these two cases is the characteristics of the active agents in the capital flow process. In the Mexican case, the anecdotal evidence and the data suggests that the foreign institutional investors were the dominant actors in the capital flow process. However, in the Turkish case the capital inflows were dominantly orchestrated by the local and foreign banks operating in Turkey. Interestingly, the speed and the type of reaction to the perceived signals of a potential currency depreciation was not significantly different. The local agents were as quick and as successful in portfolio adjustments as their foreign counterparts. This evidence found in the Turkish case suggests that the destabilizing factor is the mechanism at work which facilitates quick shift of funds across the borders without being channeled into productive economic activity rather than the identity of the agents in the process.

5-CONCLUSION

The study focused on two currency crises in two emerging market economies, Mexico and Turkiye respectively, that took place in an almost identical global conjecture. First, a careful and detailed analysis of macroeconomic backgrounds in both countries was conducted. The macroeconomic analysis aimed to set the links between the underlying economic dynamics and the development of the crises as well as to emphasize the macroeconomic disparity between two countries particularly during the period surrounding the crises. Having discerned the underlying macroeconomic dynamics, the development of the currency crises was investigated in order to identify possible triggers of the crises and policy responses during the crisis period. Also, chain of events preceding the crises and during the crises were chronicled to facilitate a clear understanding of the underlying dynamics.

The analysis of the two cases in a comparative spirit reveals that under capital mobility strong internal and external shocks may lead to explosive crises in emerging market economies even though overall macroeconomic balances are sound. The case of Mexico extends support for this argument. On the contrary, free capital flows may facilitate postponing the necessary adjustments in real sectors for a prolonged period of time when the macroeconomic balances deteriorating. The case of Turkiye clearly supports this argument. Our analysis does not provide any clear evidence regarding qualitative and quantitative differences of the relative impact of the adjustments between two cases.

The results of the analysis suggest that there are several background factors and triggers of the crises which were consistent in both cases: A prolonged real appreciation of the currency without synchronous and offsetting productivity increases; The level that the current account deficit reaches in proportion to the GDP; The composition of the capital inflows or current account

financing; The interest rate policy; The monetary expansion preceding or during the crises; The level of currency substitution and the role of the banking system in this process; The level of activity of the foreign investors in the local capital markets; The propensity of the local investors to benchmark or mimic the foreign investors in the local capital markets.

In both cases local currencies significantly appreciated against US dollar in real terms which in turn eroded the export competitiveness and stimulated import growth. This trend in the external sectors led to a surge in the current account deficit and structural limits were reached. In other words, the risk premium on the local securities demanded by the foreign creditors or investors expanded significantly, and foreign creditors were rapidly replaced by speculators. In both cases, the government authorities refused to pay the demanded premium by the foreign creditors or speculators by depressing the interest rates. On the other hand, as the expectations for a possible depreciation built up, almost simultaneous monetary expansion created the liquidity for the domestic investors to readjust their portfolios by exchanging local currency with the foreign currencies. The local demand for foreign currencies along with the sale of the securities held by dissatisfied foreign investors led to both a sharp drop in security prices and a devaluation. As it was indicated earlier, the role of the foreign investors were less significant in the case of Turkey as compared to their role in the Mexican case. While the local banks played the major role in the former, foreign investors dominated in the latter.

There are several significant policy implications of our findings. First, under capital mobility the emerging market economies are exposed to substantial risks due to volatile nature of global financial markets. Secondly, macroeconomic stability does not provide immunization against this exposure. Third, the appropriate policy response to the internal and external shocks are crucial to avoid a crisis and alleviate the impact of a potential adjustment. Therefore, capital account liberalization should be

accompanied by installation of well functioning surveillance and monitoring systems. Since the measurement and assessment of the shocks are crucial in development of quick and effective policy responses, a careful monitoring of capital flows is essential.

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10. The authors have the impression that in the literature covering the Mexican crisis the term "overvaluation" is often used arbitrarily referring adjustments below the consumer price

inflation differentials starting with an arbitrary reference exchange rate. Similarly arguments about real appreciation are often misleading and simply based on consumer price inflation differentials.

11. The current account balance is simply can be expressed as $(X+R-M)=(S-I)+(T-G)$, where X=exports, R=Net Factor Income, M=Imports, S=Private Savings, I=Private Investments, T=Government Revenues and G=Government Expenditures. Private investments exceeded private savings by large margins in Mexico and despite the public sector surpluses in the 1990-94 period, current account deficit grew.
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23. Although we are not aware of any effort to model this structural limit, the evidence is sufficient to be suspicious about the existence of such a structural limit. In the cases of Mexico and Turkiye this structural limit proved to be around 7-8% of GDP.
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25. In the absence of adequate domestic savings, foreign capital flows may facilitate higher economic growth. However, this is the case when the capital inflows are channeled into real assets. Short term portfolio investments in search of speculative returns do not contribute to the creation of productive capacities in the economy.
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41. ibid.

42. ibid.

43. As the central bank sterilized the capital inflows, reserves increased

substantially and the resulting Turkish Lira liquidity was primarily used to finance growing public sector deficit

44. Although there is no official account for the size of the underground economy, it is speculated that it is almost 50% of the official sector and the funds created in this sector of the economy is laundered in the substantially liberal financial markets. The mistakes committed by the treasury by canceling treasury auctions presumably left these funds loose, and helped to build the pressure on the exchange rates.
45. Gokce, "The Central Bank and the Monetary Policy in the Context of Economic Stabilization" p. 89.
46. As it was indicated earlier, the overvaluation claims are controversial since the estimation of the new equilibrium exchange rate depends on the choice of the reference equilibrium exchange rate and price indices used to calculate the respective price changes.
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¹ Factors other than Brady plan was effective in this surge. Particularly, renewed interest to the emerging markets by global portfolio managers contributed to this increase in capital inflows to Mexico.

² The current account balance is simply can be expressed as $(X+R-M)=(S-I)+(T-G)$, where X=exports, R=Net Factor Income, M=Imports, S=Private Savings, I=Private Investments, T=Government Revenues and G=Government Expenditures. Private investments exceeded private savings by large margins in Mexico and despite the public sector surpluses in the 1990-94 period, current account deficit grew.

³ The losses that the central bank incurred was mainly due to the treasury liabilities carried on the central bank balance sheet. Therefore, central bank experienced an expansion in its balance sheet without being able to control that particular asset item.

⁴ As the central bank sterilized the capital inflows, reserves increased substantially and the resulting Turkish Lira liquidity was primarily used to finance growing public sector deficit

⁵ Although there is no official account for the size of the underground economy, it is speculated that it is almost 50% of the official sector and the funds created in this sector of the economy is laundered in the substantially liberal financial markets. The mistakes committed by the treasury by cancelling treasury auctions presumably left these funds loose, and helped to build the pressure on the exchange rates.