

**CAPITAL FLOWS:
THE TURKISH CASE**

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CAPITAL FLOWS

Abstract

Recent financial crisis in Turkey as well as in Mexico revived the interest in the question of capital flows in developing countries. This paper examines the issue of capital flows with special reference to Turkey. Given that there is no one generally accepted definition of capital flight and hot money, the magnitude of capital flows will be tried to be measured, using the most suitable definitions for Turkey. Then the degree of openness of Turkish economy; i.e., the environment in which capital transactions take place, is estimated. The results show that the bank credits are the most dominant form of capital flow in Turkey and that the Turkish financial markets are quite well integrated with the world financial markets. Even though the magnitude as well as the direction of the flows depend on the measures used, capital flows are not of significant importance in Turkey, compared to that of the Latin American and Asian countries.

I. The Importance of Capital Flows

It has been generally agreed by most observers that capital movements are a major source of imbalance for developing countries.

The influx of foreign capital in rather large amounts in the 1990's into developing world, on the one hand, and the subsequent substantial outflows like in Mexico in 1994 on the other, made the issue of capital flows important once again. The volatile nature of capital inflows made the questions of macro stability and the policies to be implemented in cases of sudden reversal of the direction of the capital flows the central topic of discussion in many circles.

In analyzing capital inflows, the external and internal factors that cause the inflows and the nature of the inflows need to be examined first since, to see whether a policy response is desirable when faced with capital inflows depends on the causes and on the

characteristics of the inflows and of the recipient economy. In addition, the choice of instruments, hence, the effectiveness of the public policy and the forecast of the likely inflows depend on assessing the causes of the inflows. To be able to answer these questions in some sensible way, the first step in the analysis is to know the magnitude of capital flight which brings us to the issue of how to quantify capital inflows and outflows. The second issue is the nature of the environment in which capital flows take place i.e. the degree of financial openness of an economy. This paper will try to examine these issues with special reference to Turkey.

The paper is organized as follows. Section II will try to analyze the capital movements in LDC's and in Turkey and their possible causes. Section III will describe various capital flight measures and their relevance for Turkey. Section IV will estimate capital flight and hot money for Turkey. Section V will discuss the degree of openness in Turkey through the help of interest rate determination model of Edwards and Khan(1985). Finally, section VI will prescribe some policy issues.

II. CAPITAL MOVEMENTS IN LDC's and IN TURKEY

Foreign capital which was flowing among industrial countries in the 1980's, changed direction in the 1990's and started flowing mainly to developing countries in amounts such as 150 billion dollars yearly, nearly 4 times the flow in the 1983-90 period.

About one third of this flow was to Latin American countries. Capital inflows to Latin America had stagnated around 1% of GNP during most of the 1980's following debt crisis, but took a sharp change in direction in 1990's and rose sharply to more than 3% in the 1990's, doubled in 1991 and continued in the upward trend. Capital

flows reaching such amounts were comparable only to those of the Asian developing countries. There was also a structural change in the composition of the inflows, from mostly commercial bank lending in the 1980's, it shifted to portfolio investment and direct investment in the 1990's. While in Latin America the capital was attracted to high yield in financial assets and hence the emphasis was on portfolio investment, in Asian countries capital flows were mainly dominated by direct investment.

The shift in the composition of capital flows from predominantly commercial bank lending to portfolio and direct investment was driven by external and internal economic as well as social and political factors. External factors such as lower interest rates in dollar markets and recession in industrial countries by decreasing the price of exports affected the supply of funds and had a major impact on capital flows in Latin America in 1991 and 1992 with the dramatic drop in short term interest rates in the US. The declining foreign interest rates also had the effect of reducing the debt service on the floating-rate based debt and was also effective in stimulating the return of so called flight capital.

The domestic factors such as expectation of a greater stability combined with attractive interest rates and the perception of country's creditworthiness affected the demand side. Since portfolio investments are more sensitive to external conditions than direct investment, external factors were more influential in the flows to Latin America, while those to Asian countries were dominated mostly by internal factors.

Table I illustrates the magnitude of the capital inflows in 1990's into developing countries. It also illustrates the changing nature of capital flows between the 1980's and the 1990's.

TABLE 1
NET PRIVATE CAPITAL INFLOW to LDC's
(Billion dollars)

| | 1977-82 | 1983-90 | 1991-92 | 1993 | 1994 |
|--------------------------------|-------------|-------------|--------------|--------------|--------------|
| Direct Investment | 8.5 | 16.0 | 50.2 | 66.6 | 77.9 |
| Investment in securities | 0.0 | 1.3 | 22.9 | 46.9 | 39.5 |
| Investment in government paper | 2.6 | 2.6 | 22.5 | 42.1 | 50.5 |
| Bank credits | 40.3 | 15.1 | 12.7 | 3.6 | 5.0 |
| Total Private Capital | 51.4 | 35.0 | 108.3 | 159.2 | 172.9 |

Source: World Bank

TABLE 2
NET PRIVATE CAPITAL FLOWS IN TURKEY
(Million dollars)

| | 1980-82 | 1983-1990 | 1991-1992 | 1993 | 1994 |
|------------------------------|------------|-------------|-------------|-------------|--------------|
| Direct Investment | 168 | 2206 | 1562 | 622 | 559 |
| Portfolio Investment | 0 | -118 | -339 | 190 | 1059 |
| Bank Credits | 42 | 1669 | 1541 | 4375 | -7188 |
| Total Private Capital | 210 | 3757 | 2764 | 5187 | -5570 |

Source: Balance of Payments Statistics, the Central Bank of the Republic of Turkey.

Unlike the general trend in the developing world, in Turkey, the volume of bank credits did not decline in the post 1990 period and hence was not replaced by portfolio investment, except for 1994 when there was a financial crisis. This fact implies that the bank

credits are still the major type of capital inflow in Turkey which may be normal considering the bank dominant structure of Turkish financial system and the late beginning of portfolio investments in Turkey.

In Turkey, portfolio investments started out in 1986 and for the first three years consisted of liabilities in the form of "credits received from capital markets" which were mostly government securities. Starting from 1989, composition of the liability side of portfolio investments started being slightly more diversified than just the credits from capital markets; i.e., nonresidents started buying government paper and/or private securities from the stock market. Even though the data concerning the composition of this entry is not available, it is believed to be mostly in the form of securities from the stock market by the experts.

The demand in private securities started increasing only in 1992, more so in 1993 and 1994. It should be noted that the asset side; i.e., investing in foreign securities abroad, too started increasing in 1992 and in 1993, even though at a smaller magnitude than the liability side.

Net direct investments however, started increasing much earlier than the portfolio investments⁽¹⁾. The increase started in 1989, boomed in 1990-92 during the Özal decade and decreased thereafter with the uncertainty, the loss of confidence in the economic policies, appreciation of the currency and rising interest rates.

⁽¹⁾ The Law for Encouragement of Foreign Capital dates all the way back to 1954.

TABLE 2.A
NET PRIVATE CAPITAL FLOWS IN TURKEY

| | Net Direct & Portfolio Inv. | Bank Credits (long term) | Bank Credits (short term) | Total Capital Flows |
|------|--------------------------------|-----------------------------|------------------------------|------------------------|
| 1980 | 18 | -72 | 55 | 1 |
| 1981 | 95 | -69 | 0 | 26 |
| 1982 | 55 | 45 | 83 | 183 |
| 1983 | 46 | -69 | 203 | 180 |
| 1984 | 113 | 68 | 142 | 323 |
| 1985 | 99 | -166 | 287 | 220 |
| 1986 | 125 | -410 | 1005 | 720 |
| 1987 | 81 | -101 | 392 | 372 |
| 1988 | 348 | -636 | 180 | -108 |
| 1989 | 621 | -821 | 102 | -98 |
| 1990 | 655 | -523 | 2016 | 2148 |
| 1991 | 839 | -474 | 264 | 629 |
| 1992 | 384 | -649 | 2400 | 2135 |
| 1993 | 812 | 987 | 3388 | 5187 |
| 1994 | 1618 | -457 | -6731 | -5570 |

Source: Balance of Payments, the Central Bank of The Republic of Turkey

In Table 2.A private capital flows are calculated using balance of payments data. It includes net direct investment, net portfolio investment of the private sector where credits received from capital markets are deducted from liabilities, commercial banks' net drawings and private sectors drawings net of project credits and financial leasing plus short term net foreign exchange credits of commercial banks and of private sector.

The last column of the table indicates that there has been capital outflow in 1988, 1989 and in 1994 which basically stemmed from heavy debt repayment in those years. From the table, it can be

clearly seen that even though net direct investment and portfolio investments have increased starting from 1989, short term bank credits increased in uncomparable amounts from 1990 onwards, with the exception of 1991 and 1994, the former due to Gulf crisis and the latter due to financial crisis which restricted Turkey's access to financial markets.

Using the last column of Table 2.A, private capital flows (cap) which consist of net direct and portfolio investment together with short and long term bank credits, have been regressed on domestic interest rate (i_t) and the return on holding foreign assets ($i_t^* + e_t^{\wedge}$) where i_t^* is foreign interest rate and e_t^{\wedge} is expected rate of change in exchange rate. The results show that both variables are significant in explaining capital flows between 1980-1994 and that the increase in domestic interest rates will attract capital inflows whereas the increase in return on foreign assets will cause capital to move out, as expected.

$$\text{cap} = -44 (i_t^* + e_t^{\wedge}) + 64.5 (i_t)$$

(5.79) (6.21)

$R^2 = .72$ $DW = 1.90$

III. MEASURING CAPITAL FLIGHT

It has been claimed that capital flight has been the dominant feature of capital movements between developing and industrial countries recently. To assess the magnitude of capital flight and its likely outcomes, capital flight has to be defined and measured properly. Yet, capital flight by definition involves unrecorded transactions which makes it difficult to measure. In fact, there is no

consensus in the profession on the most appropriate measure for capital flight. For some, who emphasize the speculative and short term nature of the capital flows, it means short term capital outflows. For others, capital flight definitions should include trade misinvoicing so as to include the illegal part of the capital flow into account. For still others, long term movements should be included into the definition on the grounds that long term movements are also liquid. In general it can be said that, there are two approaches to measure capital flight: direct and indirect. In direct approach, the variables that constitute capital flight are identified, such as in hot money (Cuddington 1986) and trade misinvoicing methods and data is provided from either balance of payments or from trade data. Here the emphasis is on the unidentified nature of the capital flows. The indirect measures however view capital flight as a residual of four balance of payments components: increase in debt owed to foreign residents, net foreign direct investment, increase in foreign exchange reserves and the current account deficit. World Bank WDR85, Morgan Guaranty(1986) and Cline(1987) measures are variations on this theme. Dooley's measure (1986), which is a hybrid of direct and indirect measures, defines capital flight as the stock of claims on nonresidents that generate investment income unrecorded in balance of payments. To get capital flight, first, the total stock of external claims is calculated, then the stock of external claims implied by investment income receipts and market interest rate is computed. The difference between the estimate of total external claims by nonresidents and the estimate of assets on which interest earnings are reported is the estimate of capital flight.

IV. CAPITAL FLIGHT ESTIMATE FOR TURKEY

World Bank Residual Method

Claessens and Naude(1993) show in their study that the "Dooley" and "World Bank Residual" method are conceptually identical except for which the interest income is reported in the "Dooley" measure. However, since, balance of payments is not classified to give total stock of privately held external claims, it is not possible to use Dooley's method in Turkey.

The residual method views the sources of funds as increases in net external indebtedness of the public sector and net equity flows whereas, uses of funds include current account deficit and addition to reserves. Sources of funds bigger than uses of funds would imply capital flight and the reverse would imply capital inflow. According to IMF Balance of Payments Yearbook classification, net equity flows consist of net foreign direct investment and portfolio investment in terms of corporate equities. For Turkey even though data for the liability side of direct Investments; i.e., direct investment in Turkey exists much earlier, data for the asset side, i.e for direct investment abroad, exists only from 1990 onwards. Hence, net direct investment starts from 1990. Also, the increase in net external indebtedness shown by "other long-term capital of resident official sector" has to include assets as well as liabilities. However, this data is only in the form of liabilities for Turkey, because the official sector in Turkey does not give foreign exchange credits, hence has no assets. Yet, inspite of these reservations, the World Bank measure is the only measure of capital flight which can apply to Turkey, given the classifications in Turkey. Even though in the residual method for the official indebtedness the change in external debt stocks of the World

Bank data is recommended, here the balance of payments flow data is used, the reason being that flow data does not contain cross currency exchange rate changes since items are recorded in the balance of payments on transaction basis since 1991 hence no need to make correction regarding cross currency changes.

TABLE 3
Capital Flight
(Residual method)

| | Sources | Uses | Capital flight |
|-------|---------|-------|----------------|
| 1986 | 280 | -2010 | -1730 |
| 1987 | 559 | -1455 | -896 |
| 1988 | -360 | 1175 | 815 |
| 1989 | -412 | -1549 | -1961 |
| 1990 | -21 | -3880 | -3901 |
| 1991 | -9 | 1279 | 1270 |
| 1992 | 45 | -2458 | -2413 |
| 1993 | 445 | -6741 | -6296 |
| 1994 | 122 | 2085 | 2207 |
| 1995* | -24 | -6888 | -6912 |

*As of July

Source: Balance of Payments Statistics, the Central Bank of The Republic of Turkey

According to this method, in Turkey in 1988, 1991 and 1994 there is capital inflow and in all other years there is capital outflow. This is a rather unintuitive result when one considers that all three of those years were crisis years in Turkey, with a great uncertainty in the economy. However, maybe the crises themselves can explain the lack of sources in the economy. Also in all three of these years there was a real depreciation which may have resulted in

positive current account deficits, causing uses to be greater than sources and hence capital inflow.

Hot Money Measures

Hot Money measures are considered among direct approaches. There are three different Hot Money Measures available. These are:

$$\text{Hot Money 1} = -(G+C1)$$

$$\text{Hot Money 2} = -(G+C)$$

$$\text{Hot Money 3} = -(G+C+D1+D2)$$

Where

G= Net errors and omissions

C = Other short term capital of other sectors

of which:

C1 = Other Assets

D1 = Portfolio Investments : Other bonds

D2 = Portfolio Investment: Corporate Equities

In Turkey, because the data for "other assets of other short term capital of other sectors" and "other bonds" do not exist, the most relevant hot money definition is Hot Money 2. Formal results as presented in Table 4.

TABLE 4
Hot Money 2

| | |
|------|-------|
| 1986 | -329 |
| 1987 | -1048 |
| 1988 | -165 |
| 1989 | -965 |
| 1990 | -895 |
| 1991 | -982 |
| 1992 | -451 |
| 1993 | 372 |
| 1994 | -822 |
| 1995 | -3569 |

Source: Balance of Payment Statistics

Note that between 1986-1995 hot money is entering into the country every year with the exception of 1993, when there was an outflow. However, one should be careful in interpreting this result, because errors and omissions are not exactly identical to unrecorded capital flows as it is assumed here. It covers various measurement and recording errors, registration delays and unreported imports which are not related to capital flight and hence it may be misleading to think of all errors and omissions as capital flight.

In general it is difficult to sort out the reasons for the increase or decrease in net errors and omissions because it is a residual item in balance of payments. However, under certain assumptions it is possible to say something about its direction.

Errors and omissions positive may mean 1) assuming net errors and omissions are associated only with current account items and the items in current account that has a positive value are reported less than what they ought to be or items with negative

values are shown bigger than what they ought to be, 2) assuming net errors and omissions are associated only with liabilities in the capital account and the items with positive values in liabilities are reported as less than what they ought to be or items with negative values in liabilities are reported bigger than what they ought to be and 3) assuming net errors and omissions are associated only with assets in capital account and when increase in assets are reported bigger and/or decrease in assets are reported less than what they actually are.

The case for considering the net errors and omissions in defining hot money can be made only if one ignores the first two factors and assume that net errors are due to recording of assets, which is not always right. Besides the other component in the hot money 2 definition, "other short term capital of other sectors, net" is available only in the form of liabilities and not of assets in Turkey. Therefore this result should be taken with a caution.

It should be also noticed that the two measures "The World Bank" and the "Hot Money 2" measures are not always giving the same result which is natural since they are not measuring the same thing and there are certain problems with the definitions.

V. THE DEGREE OF OPENNESS OF TURKISH ECONOMY

One of the most important factors which affects capital movements is the degree of openness of the economy. In this section, degree of openness of Turkish economy is estimated using interest rate determination model developed by Edwards and Khan (1985). The model is built on the assumption that domestic interest rates can be expressed as a weighted average of uncovered interest

parity interest rate and the interest rate that would have been observed if capital account were completely closed.

Assuming Fisher relation holds, the model specifies that nominal interest rate in a closed economy is equal to

$$1) i_t = rr_t + \pi_t^e$$

where i_t = nominal interest rate

rr_t = the real (ex ante) rate of interest

π_t^e = expected rate of inflation

The real interest rate is defined as

$$2) rr_t = \rho_t - \lambda EMS_t$$

where EMS is excess supply of money defined as the difference between actual and desired equilibrium stock of money.

ρ_t = long run equilibrium real interest rate

Equilibrium demand for money (m_t^d) is

$$3) \log m_t^d = \alpha_0 + \alpha_1 \log y_t - \alpha_2 (\rho + \pi^e) - \alpha_3 \pi^e$$

where $\rho_t + \pi_t^e$ = equilibrium nominal interest rate (i_t) defined as equilibrium real interest rate (ρ) plus expected inflation (π^e)

y_t = real income

Assuming a partial adjustment process; i.e., the change in m_t will respond only partially to the difference between the desired stock of m_t and its past values and using all equations, the reduced form for the nominal interest rate is:

$$4) i_t = \gamma_0 + \gamma_1 \log y_t + \gamma_2 \log m_{t-1} + \gamma_3 \pi_t^e + w_t$$

For the open economy, interest rate is determined according to uncovered interest parity relation

$$5) i_t = i_t^* + e_t^{\wedge}$$

where i_t^* = world interest rate

e_t^{\wedge} = expected rate of change in exchange rate

Combining equation (1) and (5) and using ψ as a weight, will allow domestic interest rate to be expressed as a linear combination of open and closed economy factors:

$$6) i_t = \psi(i_t + e_t^{\wedge}) + (1 - \psi)(rr_t + \pi_t^e), \quad 0 \leq \psi \leq 1$$

Where equation 6 is the general equation for the nominal interest rate i_t , defined as a linear combination of open economy and closed economy expressions. Here $\psi = 1$ would imply totally open economy, whereas $\psi = 0$ would mean totally closed economy.

By substituting for the rr in terms of EMS, and later EMS in terms of money demand into equation 6, we arrive at the following general expression for the nominal interest rate:

$$7) i_t = \delta_0 + \delta_1(i_t^* + e_t^{\wedge}) + \delta_2 \log y_t + \delta_3 \log m_{t-1} + \delta_4 \pi_t^e + \delta_5 i_{t-1} + e_t$$

Estimating equation 7, for the period 1987:5-1995:8 according to Beach McKinnon method gives the following results.

$$8) i_t = 75.51 + 0.25(i_t^* + e_t^{\wedge}) + 29 \log y + 0.24 \pi_t^e - 11.19 \log m_{t-1} + 0.68 i_{t-1}$$

(-2.29) (3.70) (3.69) (2.11) (1.26) (12.28)

$$\rho = -0.28$$

$$(-2.75)$$

$$R^2 = .86$$

Here π_t^e is estimated using third degree polynomial with 3 lags of inflation rate and \hat{e}_t is estimated by regressing exchange rate change on its one lag, on actual inflation and its two lags, on 6 lag of current account deficit and a dummy variable $D=1$ for the period 1993:11-1994:6.

For i_t^* US 3 month treasury bill rate, and for i_t Turkish treasury bill rate, for m_t real money supply using M1, for real income (y_t), due to the unavailability of monthly data, industrial production index is used.

Equation 8 implies that the coefficient of openness (ψ) for the whole estimation period is equal to .93

The Chow test, for the coefficient stability show a structural change between 1987:5-1989:12 and 1990:1-1995:8, $F(3.89)=3.51$ i.e. the coefficients of the two subperiods are not the same.

Dividing the estimation period into 2 and estimating the two periods separately gives the following results:

Estimation period 1987:5-1989:12

$$9) i_t = 21.04 + 0.07(i_t^* + e_t^{\wedge}) + 4.74 \log y + 0.21(\pi_t^e) - 7.20 \log m_{t-1} + 0.64 i_{t-1}$$

(0.53) (0.66) (0.50) (2.15) (-1.82) (5.04)

$$R^2 = .70$$

No serial correlation

which means in that period interest rate determination was affected mostly by domestic factors such as expected inflation (π_t^e) and one lag of domestic interest rates (i_{t-1}), implying $\psi = .71$ for that period

For the remaining period 1990:1-1995:8 estimation results are:

$$10) i_t = -79.3 + 0.27(i_t^* + e_t^{\wedge}) + 35.4 \log y + 0.29 \pi_t^e - 16.9 \log m_{t-1} + 0.63 i_{t-1}$$

(0.19) (2.98) (2.91) (1.64) (-1.30) (8.61)

$$R^2 = .83$$

$$\rho = 0.34$$

(-2.69)

meaning that in the second period external factors such as $i_t^* + e_t^{\wedge}$ becomes important in addition to domestic factors such as $\log y$ and i_{t-1} and the implied openness coefficient for the period is $\psi = .89$

These results are consistent with the facts that even though liberalization of capital movements had started in 1984, by allowing residents to open foreign exchange accounts and removing restrictions on foreign exchange management of banks, capital account convertibility was finalized in the beginning of 1990, with the

full convertibility of Turkish Lira within the framework of Article 8 of the IMF Charter. Hence, the estimation results $\psi = .71$ for the 1987-1990 period and $\psi = .89$ for the post 1990 period are confirming the contentions that the Turkish financial system can be considered more or less fully open after 1990's.⁽²⁾

VI. CONCLUSION: SOME POLICY PRESCRIPTIONS

In the study, it is shown that Turkish liberalization was quite successful in opening up the capital account and that the domestic capital market is integrated quite well with the world financial markets. Even though there are problems in exactly defining and measuring capital flight there are no questions regarding its mechanism. The problem is liberalization of capital account without controlling public sector deficit. High interest rates resulting from large public sector deficits causes capital to move in, leading to an increase in monetary aggregates and to real appreciation which in turn leads to devaluatory and inflationary expectations.

Usually, capital movements increase with the increased confidence in the economic policies,. However, after a certain point things reverse themselves. It seems like a vicious circle, when growth picks up and confidence is restored, capital inflows accelerate, leading to a current account deficit, which with increased devaluation expectations starts increasing and eventually forces the capital to move out. The effects of capital outflows in depreciating the

⁽²⁾ For a detailed exposition of Turkish capital account liberalization see Altinkemer and Ekinçi (1992). Today, there are only few restrictions regarding the capital movements; such as the permission requirements for non-residents to invest in Turkey and issue securities in Turkey, reciprocity requirements in the banking and the real estate sectors and the requirement of bringing the foreign exchange earned through exports and invisibles back to Turkey, which explains why the coefficient is close to 1 but not equal to 1.

exchange rate can be offset by exchange market intervention but this has the danger of depleting the reserves. In such a situation using monetary tightening will increase interest rates further, leading to a recession. Devaluation, on the other hand, may improve current account position however, inflation may increase and as the country tries to move out of recession and growth picks up, the same cycle starts again.

In short, capital inflows have a destabilizing effect and complicates monetary management as was the case of both in Turkey and in Mexico recently. Strong capital inflows poses problems; if sterilized it will lead to higher interest rates, if not, it will put upward pressure on money growth rates, increasing inflation. To forestall potentially destabilizing effect of inflows monetary policy needs to support a credible inflation target with a conducive financial environment. The ability to implement sustainable and consistent macro policy is the key, since the effect of expansionary capital inflows such as the pressure on longer term interest rates can not be offset by monetary policy alone. It also needs a tighter fiscal policy to offset inflationary demand pressures which brings us to the issue of either decreasing the size of the public sector and/or some structural change in financing the public sector deficit such as privatization or tax reforms.

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