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Investment Opportunities for Foreign Capital and Economic Fragility in Turkey

Saziye Gazioglu
Middle East Technical University

Ulkem Basdas
Middle East Technical University

INVESTMENT OPPORTUNITIES FOR FOREIGN CAPITAL AND ECONOMIC FRAGILITY IN TURKEY

Saziye Gazioglu[1]
And
Ülkem Başdaş[2]

1. INTRODUCTION:

The debate over capital flows, especially in developing countries, has been one of the most popular topics in economics. The people in favor of unrestricted capital flows argue that the restrictions cause inefficiency and higher costs so they must be eliminated in order to secure markets. On the contrary, the people in favor of restrictions argue that the capital movement has to be regulated since studies such as Eichengreen (1996) and Cohen (1998) show that the capital mobility has not affected all countries in the same manner. Financial markets can include risk in case of reversal of capital inflow if there does not exist sufficient regulatory framework. Alfaro et al (2003) states that there can be significant gains from foreign direct investment in cases of well-developed financial markets, otherwise foreign direct investment alone has an ambiguous effect on development.

In Turkey, after the 1980's, the market has been liberalized almost completely.   Lukauskas and Minushkin (2000) suggest that this type of financial market opening in Turkey is a consequence of the need to finance persistent current account deficits, to service existing foreign debt, and finance huge budget deficits.   Furthermore, Turkey has to borrow from abroad to obtain capital in order to finance economic development due to low saving rates within the country. Lukauskas and Minushkin (2000) link the urgent liberalization of markets in Turkey to the little bargaining power vis-à-vis foreign investors because of its twin deficits, high inflation and political instability. Considering urgent and quick liberalization of markets in Turkey, the restrictions on capital flows were eliminated prior to a regulatory framework. This economic nature of Turkey forces the economy to be more volatile depending on external shocks and more open to crises.   Loewendahl and Ertugal-Loewendahl (2001)

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evaluate the performance of Turkey in the context of the EU enlargement and emphasizes the importance of FDI for Turkey and comparatively higher dependence to capital flow for technological and innovation activities. Çulha (2006) draws attention to the example of Turkey in 2001. During the sudden reversal of capital inflow, there has been a potential risk on the banking sector, inflation and exchange rate that caused macroeconomic instability.

Appendix 1 summarizes the upward trend in capital flows. According to capital flow by sector in appendix 2, nearly 40% of capital inflows is composed of financial intermediation. This figure shows us the great importance of the banking sector within the FDI. Kaminsky and Reinhart (1999) claim that the banking and currency crises deepen via feeding back each other. The analysis over many industrial and developing countries, including Turkey, shows that after a boom sourced by capital inflow and credit the crises occur when country plunges into a recession. Levine and Zervos (1998) underline the significant effect of financial factors on future rates of economic growth, capital accumulation and productivity growth. Therefore, capital inflow and the share of the banking sector within FDI play a vital role in not experiencing the twin crises.

The aim of this paper is to revisit the link between capital flows, the banking sector, stock market returns and crisis by examining the Turkish case. We will argue that the increase in foreign share in financial services can be taken as a proxy for the impact of the magnitude of capital flow. Therefore, can be an indicator of overall economic performance for the countries, which are heavily dependent on capital flows. Besides, our aim is to show that capital flows have a deeper effect on the exchange rate when it moves out the country, causing an asymmetric impact. This asymmetric effect causes a debt trap for the home country. Our basic innovation is to integrate a theoretical model in this analysis. Contrary to many studies which evaluate only the relation among the exchange rate, stock returns and capital flows by solely using empirical work this paper also benefits from a theoretical model. The Johansen co-integration method together with impulse response analysis is used to in empirical work.

The paper is organized as follows; Section 2 explains the FDI structure of Turkey and possible determinants of capital inflow. In section 3, the changes in the Turkish Banking System are summarized together with the role of foreign share. Section 4 introduces the model to test for relation between capital flow, stock returns and the exchange rate. Section 5 analyzes the empirical evidence for Turkey. In section 6, we conclude.

2. FOREIGN DIRECT INVESTMENT IN TURKEY AND DETERMINANTS OF CAPITAL FLOW:

The foreign direct investment into Turkey follows an upward trend starting from the 1980's and makes a peak in 2006 (Appendix 1). In appendix 2 the decomposition of foreign direct investment in the latest years indicates that there is a high concentration on financial intermediation and transport, storage and communications. Other sectors, including manufacturing, play only a minor role to affect the foreign direct investment. Though flows of investment to Turkey are a small percentage of the FDI in the world, its share in the Turkish industry is quite high. Foreign investors place pressures to buy the national industry.

Such a structure of the economy directs the focus of the economy on services rather than manufacturing or production.

There exists several papers investigating the determinants of capital flows from developed to developing countries considering the pull and push factors (Mody, Taylor and Kim; 2001, Kim; 2000, Dasgupta and Ratha; 2000, Ying and Kim; 2001, Hernandez, Mellado and Valdes; 2001, Taylor and Sarno; 1997, Fernandez-Arias; 1996, Chuhan, Claessens and Mamingi; 1993). Çulha (2006) revisits the effects of pull-push factors for Turkey from 1992:01 to 2005:12. Over the whole period the pull factors have a greater contribution than the push factors. Besides, the stock exchange index positively affects capital inflows. The issue is the growing importance of effect of foreign interest rates (as a push factor) proving the dependence on capital flow and desperate policies in front of sudden capital outflows.

Considering the specific determinants of capital flow to the banking sector, there are only a few studies investigating this question. Sabi (1988) investigates parameters affect the expansion of the U.S. multinational banking sector to developing and less-developing countries, including Turkey. He finds out that market size, presence of multinational corporations from the U.S., extent of economic development, and balance of payments are important selection criteria for MNBs. Besides, the variable for regulation seemed to be insignificant, which means that once a MNB is established regulations will not affect further growth. Nevertheless, it is important to emphasize that after the establishment of MNB regulations are investigated in this analysis. Moreover, the time span is 1975-82, which has to be handled with updated data.

3. TURKISH BANKING SYSTEM AND THE ROLE OF FOREIGN SHARE:

In Turkey, the main aim of internalization of the banking sector was to open the foreign competition to increase diversification, efficiency and quality of banking services (Pehlivan and Kirkpatrick, 1992). 1980-89 demonstrated an increase in the number of foreign-owned banks and a decrease of restrictions to the entry of foreign banks. Pehlivan and Kirkpatrick (1992) claims that entrance of foreign banks forced domestic banks to improve their cost-efficiency performance, but the benefits had not been realized immediately. Lukauskas and Minushkin (2000) suggest that in the 1990's "focus of banking activity shifted from deposit taking and lending in domestic currency to the buying and selling of foreign exchange and government debt".

Starting from the 1980's, the number of banks significantly rose. Until the 2001 crisis, the number of banks grew rapidly accompanied with the overexpansion of branches (appendix 3). After the crisis, restructuring in the banking sector has taken place causing a reduction both in number of banks and branches. On the other hand, foreign share in the banking sector shows an upward trend over the period between 1980 and 2007 with the exception of crises (figure 1). Especially, rising trend of foreign banks' share reaches the highest level with 45.7 per cent at the beginning of 2007.

Figure 1 - The Share of Foreign Banks in Turkey: 1980-2007:
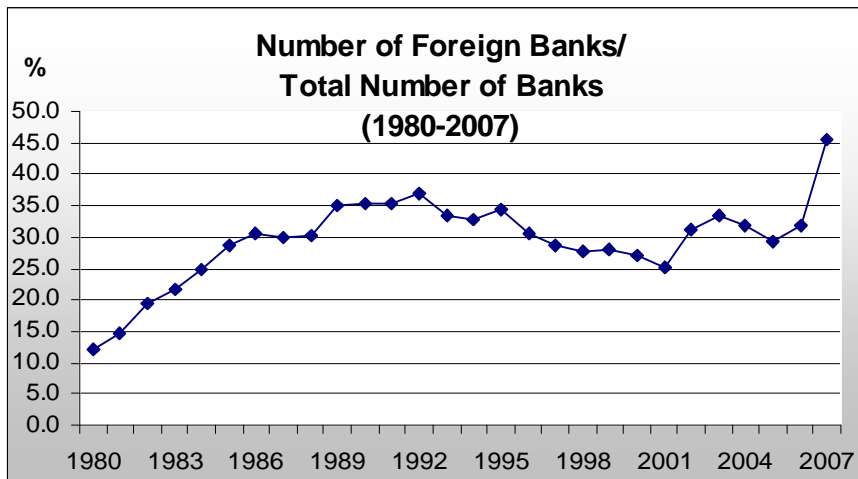
Source: Calculation from appendix 3 (Number of Foreign Banks/ Total Number of Banks)

Considering the performance of the banking sector, Steinherr et al (2004) analyze the financial intermediation, measured by ratio of assets and loans to gross national product, and show the upward trend of financial intermediation during the 1990's but a significant drop in the 2001 crisis. During the crisis, value added in financial services even drops below the level in 1990 (Steinherr et al. (2004). Alper (2001), Akyüz and Boratav (2001) and Özatay and Sak (2003) underline the characteristics of the banking sector as one of the main causes of the crisis. Indeed, the fragility of the banking sector accompanied with other triggering factors led to the crisis (Özatay and Sak, 2003). Özatay and Sak (2003) emphasize the currency, interest and foreign exchange risk accumulation on the banks' balance sheets, heavy reliance of private banks on foreign exchange deposits and thereby on the capital flows, and differences between state and private banks. At the end, the cost of 2001 banking crisis to the Treasury was $43.7 billion (29.5% of GDP) and the cost to the private sector was $9.5 billion (6.4% of GDP), totally about 35.9% of GDP in 2001 (Steinherr er al., 2004).

Following Steinherr et al (2004), selected efficiency parameters, reported by the Banks Association of Turkey, such as deposits-assets, deposits-branch, deposits-employee, assets-employee and assets-branch ratios draw attention to the productivity improvement in the banking sector. Moreover, operating cost-income ratio for the largest Turkish banks indicates a close average ratio to the EU level.

4. MODEL:

4.1 Theoretical Model:

Following Gazioğlu (2001, 2002, 2003, 2005), the same model is adopted in this paper. The model solves the profit maximization problem of firm and time separable utility function and the maximization problem of a representative domestic consumer. The stock market constraint is given as:

$$V^d \dot{X}^d \equiv X^d \dot{V}^d + X^d D^d \qquad (1)$$

$V^d \dot{X}^d$, $X^d \dot{V}^d$ and $X^d D^d$ denote the value of domestic firms owned by domestic individuals, domestic proportion of stock market valuation of these shares, and their proportion of dividends respectively.

Gazioğlu (2005) summarizes the equilibrium in economy as follows;

$$\dot{X} - E\dot{H} = Y - A - I + X^d(\dot{V}^d/V^d + D^d/V^d) + X^f(\dot{V}^f/V^f + D^f/V^f)$$
$$+ H(1 + \dot{E}/E)(1 + R^f) \tag{2}$$

Where the balance of payment equation can be given as;

$$\dot{H} = \Pi - T + H(1 + \dot{E}/E)(1 + R^f) \tag{3}$$

The definitions of the variables are summarized in appendix 4. Gazioğlu (2005) states that "net accumulation of assets can be accumulated by a trade surplus and capital gain from holding foreign money in terms of foreign goods", which is shown by equation (3). Then, equation (2) implies the equilibrium condition, where the right hand side is equal to net domestic income minus consumption and the left hand side is the net wealth accumulation. This equilibrium proves that a change in shares under foreign ownership in the domestic stock market is reflected to the domestic economy in terms of domestic debt. Therefore, a foreign shock can affect the domestic market via a change in shares under foreign ownership. The percent of shares under foreign ownership has a vital role in evaluating the sensitivity of the economy to foreign shocks. Greater percentage implies higher sensitivity and more volatile economy.

Gazioğlu (2005) states the dynamics of the whole system as follows;

$$\begin{bmatrix} \dot{E} \\ \dot{H} \\ \dot{V} \end{bmatrix} = \begin{bmatrix} \dot{E}_E & \dot{E}_H & \dot{E}_V \\ \dot{H}_E & \dot{H}_H & \dot{H}_V \\ \dot{V}_E & \dot{V}_H & \dot{V}_V \end{bmatrix} \begin{bmatrix} E \\ H \\ V \end{bmatrix} + \begin{bmatrix} \dot{E}_k \\ \dot{H}_k \\ \dot{V}_k \end{bmatrix} [k] \tag{4}$$

Where $\dot{E}_E > 0$, $\dot{E}_H < 0$, $\dot{E}_V > 0$, $\dot{E}_k < 0$; $\dot{H}_E < 0$, $\dot{H}_H < 0$, $\dot{H}_V < 0$, $\dot{H}_k > 0$; $\dot{V}_E < 0$, $\dot{V}_H > 0$, $\dot{V}_V < 0$ and $\dot{V}_k > 0$. The solution of this dynamic system is explained in Gazioğlu (2005). The model has two stable equilibria and one unstable equilibrium. Higher percentage of shares under foreign ownership causes an asymmetry between the capital inflows and outflows, which leads to "Ponzi Game" position; the country borrows further to be able to repay debts (Gazioğlu, 2001,2002,2003).

This model has superiority over the models trying to prove the link between exchange rates, capital flows and economic crises using only empirical methods. Firstly, the dynamics are tested via cointegration analysis, where the ordering of variables does not matter. Consequently, the causality test is not carried out. Ghosh (2000), Tan and Hook (2000) study only the real exchange rate and real stock market index within the framework of causality. Secondly, use of capital inflows and outflows separately enables the measurement of the asymmetry effect. Thirdly and most importantly, the researches questioning the capital

flows, exchange rate and financial crises are lacking in theoretical background. Though the theory clarifies the relation between these variables, most of the studies follow actual parameters to explain the economic situation rather than testing and analyzing the theoretical model. This paper enables us both to test the dynamics and to explain the actual situation. The main aim is to show the importance of percentage of shares under foreign ownership in domestic market to test vulnerability of a domestic economy.

4.2. Estimation of the Structural Model:

The "Structural VAR" approach is adopted to test the dynamics of the system. The structural VAR approach captures not only the joint dynamics of variables but also the underlying, "structural", economic relationships. Besides, two basic features of the Structural VAR makes it preferred; error terms are not correlated, so structural, economic shocks are independent and variables can have a contemporaneous impact on other variables.

The Structural VAR econometric model is based on the macro model introduced in 4.1. The model suggests long term and short term trends of the variables, so that estimation of the data will enable us to test whether actual data confirms the theoretical findings. Behaviors of the real exchange rate, capital inflows, capital outflows and stock returns are evaluated to draw policy implications. The simplifying assumptions on the model are;

(i)   The solution of (4) for 2 by 2 combinations together with stability conditions is done in Gazioğlu (2005).

(ii)   The ordering of the variables is not important so following restrictions are imposed on the simultaneous estimations of three variables; $\dot{H}_E = 0$, $\dot{H}_H = 0$, $\dot{H}_V = 0$, $\dot{H}_k = 0$; $\dot{V}_E = 0$, $\dot{V}_H = 0$, $\dot{V}_V = 0$ and $\dot{V}_k = 0$ to estimate only $\dot{E}_H < 0$ and $\dot{E}_V > 0$.

Based on the empirical results, it is tested whether the actual data confirms the stability conditions of our model.

5. EMPIRICIAL EVIDENCE FOR TURKEY:

The real effective exchange rate index, stock market price indices, foreign assets/ liabilities of the banking sector are used for E, V and H respectively. The real effective exchange rate, foreign assets/ liabilities of the banking sector are acquired from the Central Bank of the Republic of Turkey for the period from 1994:01 to 2006:12. The consumer price index and the stock market price indices are obtained from the Turkish Treasury and Istanbul Stock Exchange, respectively. The definitions of these variables are summarized in appendix 5 in detail.

Figure 2 and 3[3] plot real values of variables in logarithms. The gap between the foreign liabilities and assets disappears with the 2001 crisis. The real effective exchange rate is quite constant over time with an exception in 2001. After the crisis, real exchange rate has risen to its pre-crisis level. The real stock return shows deviations depending on the crises. During

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[3] In Figure 3, the rise in REXCH means appreciation and fall means depreciation. This definition would be reversed in cointegration analysis to simplify the interpretation.

the crisis period the stock return falls. Following, Gazioğlu (2005) we claim that invested real foreign assets in the stock market causes a rise in the stock market returns and appreciates the foreign currency (Model 1). A change in real foreign liabilities has a greater impact on real exchange rate than real foreign assets; asymmetric effect (Model 2).

Figure 4 is the graph of Foreign Investment in Real Estate Sector for 2003:1- 2006:10 with an upward trend over years indicating higher acquisition of assets by the foreigners and inflow to country. This also fosters our increasing trend in Real Foreign Assets.

Figure 2 – The Real Foreign Assets and Liabilities in Log for Turkey: 1994-2006:
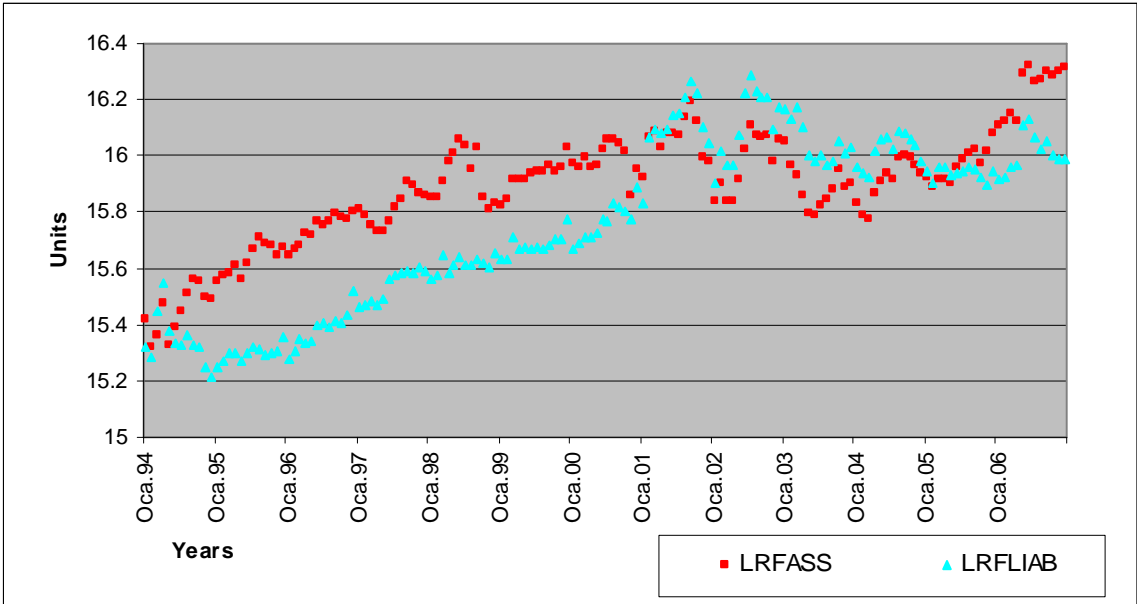
Source: Own calculations. Sources of data are summarized in appendix 5.

Figure 3 – The Real Effective Exchange Rate and Real Stock Returns in Log for Turkey: 1994-2006:
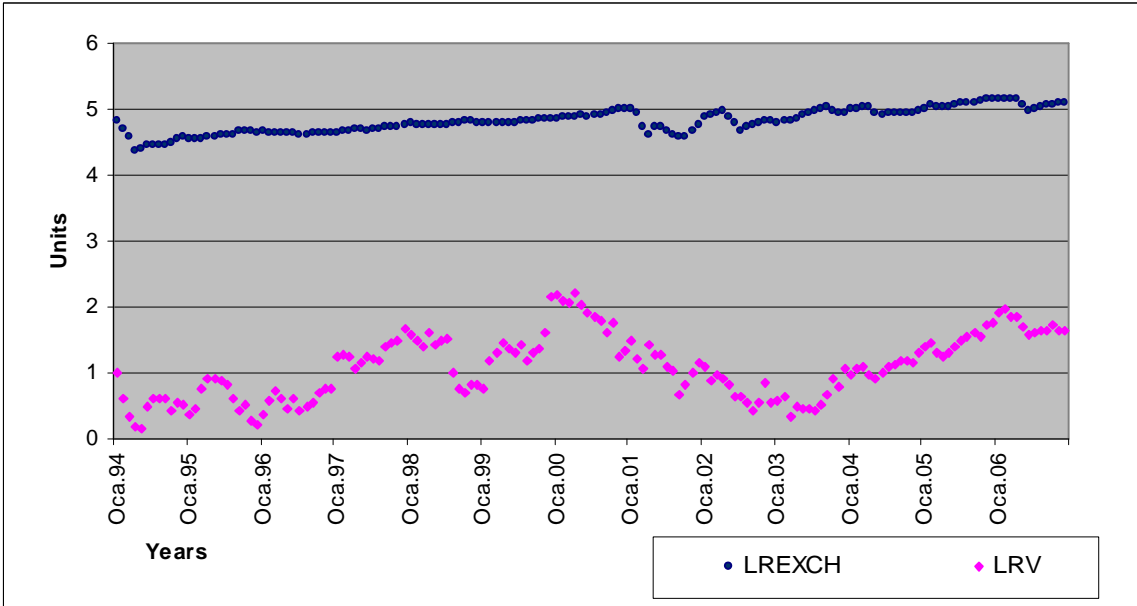
Source: Own calculations. Sources of data are summarized in appendix 5.

Figure 4: Foreign Investment in Real Estate Sector
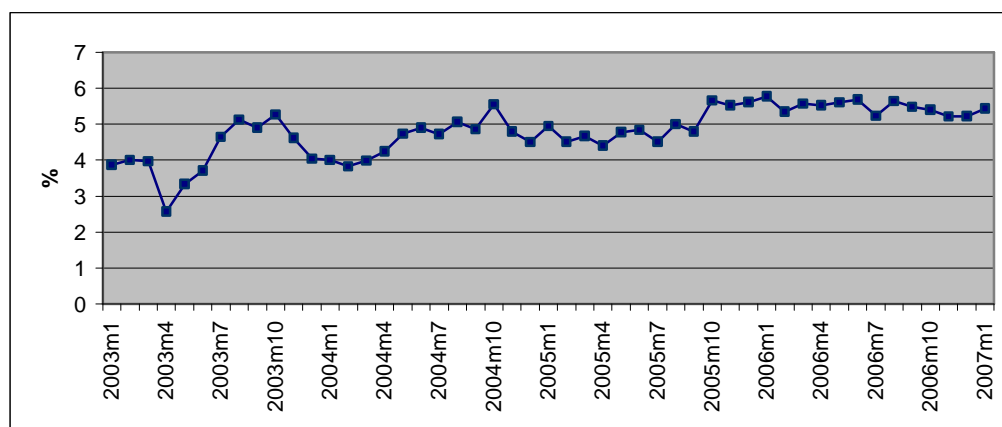
Source: The Central Bank of the Republic of Turkey

5.1. Stationarity and Cointegration Tests:

In order to apply the Structural VAR approach, the stationarity of the variables has to be tested. By applying the Augmented Dickey Fuller Test results, for the period 1994:01-2005:12 the real exchange rate, real stock returns, real foreign assets and liabilities of banking sector (in log form) are integrated of order one. All variables are integrated of order one, which enables us to apply cointegration analysis.

5.2.1 Cointegration Analysis:

In this section the long run relation between real exchange rate (LREXCH), real foreign assets (LRFASS), real foreign liabilities (LRFLIAB) and real stock returns (LV) over 1994:01-2006:12 for Turkey is investigated. Johansen multivariate technique is adopted (Johansen, 1998; Pesaran and Smith, 1998) following Gazioğlu (2005). In order to examine both pre-crisis and post-crisis period, a dummy (DUM01) introduced for the post-crisis period (2001:2)[4]. The lag order of one is selected using the Schwarz Bayesian Criterion (SBC) in unrestricted VAR for both models.

For model 1, applying the lag order of one, the test for the number co-integrating relations indicates that there is only one vector (Table 1)[5]. Estimation of these vectors via Johansen Estimation is calculated in model 2. The most remarkable point is the signs of real stock returns and real foreign assets, which are in reverse direction of our prediction. Before the 2001 crisis, high foreign inflows lead to a rise of stock returns as domestic currency appreciated. This relation is meaningful considering that higher capital inflow is invested in stocks causing value gain for the domestic currency. Crisis occurred when foreign hot-capital moved out of the stock market, as the stock market returns started to fall. Share of the foreign investment in the stock market was around 40%. Recently, this share is around 70-

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[4] Also a model dividing the whole period into pre-crisis (1994:1-2001:2) and post-crisis period (2001:3-2006:12) is regressed. Estimation results point out a significant difference between these two sub-samples; supporting Gazioğlu (2005) for pre-crisis and opposing after the crisis.

[5] In model 1, unrestricted constant term and restricted trend term constraints are applied to the cointegration space in order to include the effect of trend term.

80% (Figure 5). The danger of reversal of capital flows still exists in Turkey. However, reversal might be less likely than before. Though there would be an increase in the banking sector's assets, this does not have a considerable effect on the stock market. It is clear that further investigation is needed to analyze the post-crisis period and larger data set in next years will be useful to evaluate the performance of regressions.

Figure 5: Foreign Custody Value and Custody Ratio in Stock Market
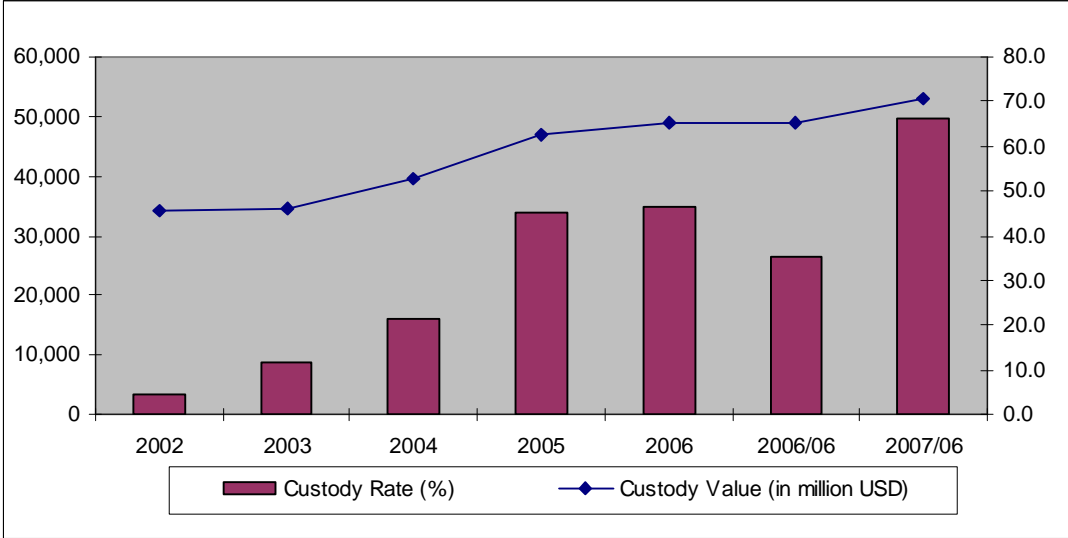
Source: The Capital Market Board of Turkey

For model 2, there is one co-integrating vector[6]. According to table 2, capital outflow causes a reduction of the real exchange rate, depreciation. Specifically, a 1 percent increase in capital outflow causes a 27.82 percent decrease in the value of the Turkish Liras. Higher stock returns also cause depreciation, but only 5%. In Model 1, the effect of capital inflow is 37.7% in comparison to model 2, where the effect of capital outflow is 27.82 %.

5.2.2 Impulse Responses Analysis:

Impulse Responses Analysis show the time plots of logarithms of real exchange rate, real stock market returns, and capital inflows (Model 1), capital outflows (Model 2). General Impulse Response Functions are necessary to examine dynamic effects of a shock on a given variable on all other variables in the system. Each figure denotes the effects on all other variables given a positive unit (one standard error) shock to a variable. For both models only shocks to capital inflows and outflows are considered since it is investigated to observe the effects of changes in inflows and outflows.

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[6] In model 2 unrestricted constant term and restricted trend term constraints are applied.

Figure 6 – Impulse Responses Analysis for Turkey (Model 1):
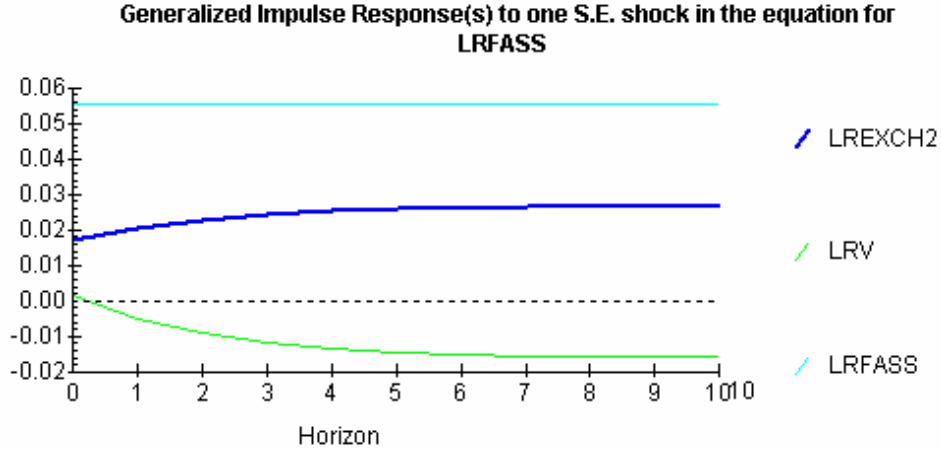
Source: Microfit Output

For model 1, a positive shock to real foreign assets is accompanied by depreciation of the domestic currency and lower real stock returns (Figure 6). This interaction shows the irrelevant movement between the selected variables opposing our predictions. For model 2, one standard error shock to LRFLIAB (lower capital outflow) ends up with lower stock returns and depreciation of Turkish liras (Figure 7). Though it is expected that with the increase of capital outflow the currency would lose value, and lower the stock returns, the relation is weak.

Figure 7 – Impulse Responses Analysis for Turkey (Model 2):
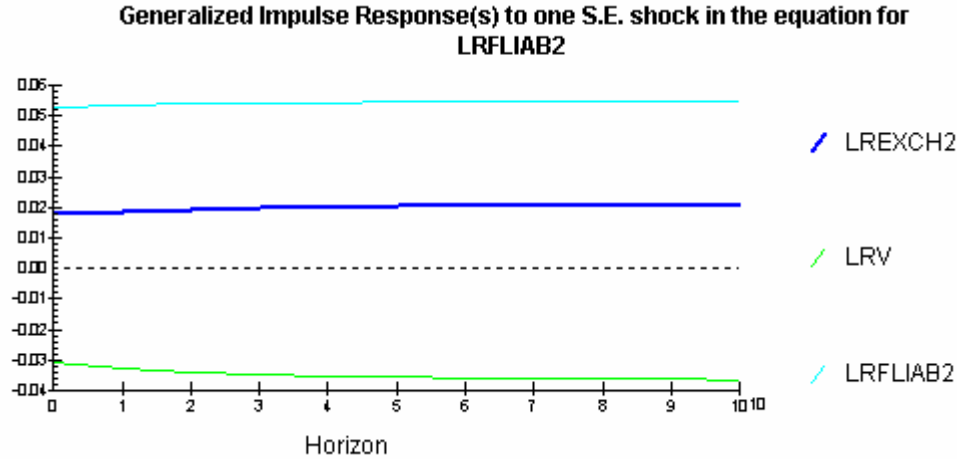
Source: Microfit Output

The Impulse Response analysis contradicts our predictions such that; for Turkey over the investigated period a positive shock to capital inflows causes a decrease in stock returns together with depreciation of the Turkish liras. For capital outflows in line with expectations, a rise in outflows causes depreciation and lower stock returns. Comparing the shocks to inflow to outflow, capital inflow has nearly same impact on the real exchange rate, not supporting the asymmetric effect argument.

TABLE 1 – COINTEGRATION TESTS FOR MODEL 1

MODEL 1

Cointegration LR Test Based on Maximal Eigenvalue of the Stochastic Matrix		
Null Hypothesis	Alternative Hypothesis	Statistic
r=0	r=1	**67,07
r<=1	r=2	17,84
r<=2	r=3	11,08
Cointegration LR Test Based on Trace of the Stochastic Matrix		
Null Hypothesis	Alternative Hypothesis	Statistic
r=0	r>=1	**99,37
r<=1	r>=2	32,29
r<=2	r>=3	14,44

Source: Microfit Output

Note:

1. (**) denotes rejection of null hypothesis at both 5 % and 10 % significance levels.

2. For period 1994:1-2006:12, cointegration with unrestricted intercepts and restricted trends in the VAR is adopted with 155 observations. Order of VAR = 1.

3. List of variables included in the cointegrating vector: LREXCH2, LRV, LRFASS, DUM01.

4. r is the number of cointegrating vectors.

Cointegration Analysis Model 1

Estimated Cointegrated Vectors in Johansen Estimation	
	VECTOR 1
LREXCH2	1,2470
	(1,0000)
LRV	0,0038
	(0,0031)
LRFASS	-0,4696
	(-0,3766)
DUM01	-0,4394
	(-0,3523)
Trend	0,0104
	(0,0083)

Source: Microfit Output

Note:

1. The normalized coefficients are given in brackets.

2. Cointegration with unrestricted intercepts and restricted trends in the VAR is adopted with 155 observations for whole period, respectively. Order of VAR = 1, chosen r=1.

3. List of variables included in the cointegrating vector: LREXCH2, LRV, LRFASS, DUM01 and a restricted trend term.

TABLE 2 – COINTEGRATION TESTS FOR MODEL 2

MODEL 2

Cointegration LR Test Based on Maximal Eigenvalue of the Stochastic Matrix		
Null Hypothesis	Alternative Hypothesis	Statistic
r=0	r=1	**62,99
r<=1	r=2	14,39
r<=2	r=3	11,69
Cointegration LR Test Based on Trace of the Stochastic Matrix		
Null Hypothesis	Alternative Hypothesis	Statistic
r=0	r>=1	**94,57
r<=1	r>=2	31,57
r<=2	r>=3	17,18

Source: Microfit Output

Note:

1. (**) denotes rejection of null hypothesis at both 5 % and 10 % significance levels.

2. For period 1994:1-2006:12, cointegration with unrestricted intercepts and restricted trends in the VAR is adopted with 155 observations. Order of VAR = 1.

3. List of variables included in the cointegrating vector: LREXCH2, LRV, LRFLIAB, DUM01.

4. r is the number of cointegrating vectors.

Cointegration Analysis Model 2

Estimated Cointegrated Vectors in Johansen Estimation	
	VECTOR 1
LREXCH2	1,1803
	(1,0000)
LRV	0,0515
	(0,0437)
-LRFLIAB	-0,3283
	(+0,2782)
DUM01	-0,3002
	(-0,2544)
Trend	-0,0094
	(0,0079)

Source: Microfit Output

Note:

1. The normalized coefficients are given in brackets.

2. Cointegration with unrestricted intercepts and restricted trends in the VAR is adopted with 155 observations for whole period, respectively. Order of VAR = 1, chosen r=1.

3. List of variables included in the cointegrating vector:
LREXCH2, LRV, LRFLIAB, DUM01 and a restricted trend term.

6. CONCLUSION:

Rising share of foreign ownership in the stock market was noticeable and was pointed out in Gazioglu (2000). As the foreign shares in the stock market increased via hot-capital inflows, the stock market return and prices increased. When the return of stock market was high, the 2001 crisis occurred with reversal of capital inflows. The exchange rate crisis was accompanied by the Banking crisis in Turkey. In the post-crisis period, the foreign share of stock market ownership increased from 40 to 80%. Since the exchange regime was not fixed, no financial crisis occurred when stock market return was the highest in Jan06. However, any political or other instability still may create a possibility of outflow of capital, but less likely because the nature of foreign investment changed since the crisis.

During the post crisis period, we observe pressures of foreign investment in the Banking and insurance sector, together with foreign investors taking over of the existing industry. Hence, the character of the FDI changes from its complimentary role to substituting for the national industry and the financial sector. This phenomenon also has an implication to utilization of domestic savings. Foreign Direct investors now have access to loans from domestic savings. Through the foreign banks the foreign investors can borrow and buy off the existing national industry, by mobilizing domestic savings. Political implications need to be considered when domestic banks and industry are handed to the multinational companies

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Appendix 1 - The Foreign Direct Investment into Turkey (Actual Entry) 1975-2007:

Foreign Direct Investment (Actual Entry)	
	(Million $)
1975	114
1976	10
1977	27
1978	34
1979	75
1980	18
1981	95
1982	55
1983	46
1984	113
1985	99
1986	125
1987	115
1988	354
1989	663
1990	684
1991	810
1992	844
1993	636
1994	608
1995	885
1996	722
1997	805
1998	940
1999	783
2000	982
2001	3.352
2002	1.137
2003	1.752
2004	2.883
2005	9.801
2006	20.165
2007/March	9.177
Total	**58.909**

Source: The Central Bank of the Republic of Turkey

Appendix 2: International Direct Investment Inflow by Sector in Turkey

						Jan.-March	(Million $)
Sectors	2002	2003	2004	2005	2006	2006	2007
Agriculture, hunting and forestry	--	1	4	5	5	--	--
Fishing	--	--	2	--	1	--	--
Mining and quarrying	2	14	75	40	125	19	6
Manufacturing	110	448	214	788	1.874	175	1.531
Manufacture of food products and beverages	14	249	78	68	605	43	190
Manufacture of textiles	10	8	14	183	24	5	13
Manufacture of chemicals and chemical products	9	9	39	174	600	10	98
Manufacture of machinery and equipment n.e.c.	13	17	8	13	56	38	--
Office machinery and computers	2	4	2	13	53	5	9
Manufacture of motor vehicles, trailers and semi-trailers	33	145	35	106	102	28	15
Manufacture of furniture; manufacturing n.e.c.	--	2	0	4	3	--	2
Other Manufacturing	19	14	38	227	431	46	1.204
Electricity, gas and water supply	68	86	69	4	112	55	--
Construction	3	8	23	80	321	9	181
Wholesale and retail trade	89	92	103	68	1.145	8	15
Hotels and restaurants	0	4	1	42	28	7	8
Transport, storage and communications	1	2	639	3.285	6.699	15	78
Financial intermediation	260	51	69	4.016	7.002	56	6.191
Real estate, renting and business activities	0	6	3	29	92	9	86
Education	0	0	0	17	--	--	--
Health and social work	5	23	53	74	264	18	4
Other community, social and personal service activities	84	10	36	86	106	3	2
Total	622	745	1.291	8.534	17.774	374	8.102

Provisional Data

Source: The Central Bank of the Republic of Turkey

Appendix 3 – Number of Banks in Turkey: 1980 – 2007:

						A	B	C	D		E	F	G
Years	Number of All Banks	Number of All Banks' Branches in Turkey	Number of All Banks' Branches Abroad	Number of Foreign Banks (D+G)	Number of Deposit Banks (A+B+C+D)	Number of State-owned Deposit Banks	Number of Privately-owned Deposit Banks	Number of Banks under the Dep.Ins. Fund	Number of Foreign Banks	Development and Investment Banks (E+F+G)	State-owned Development and Investment Banks	Privately-owned Development and Investment Banks	Foreign Development and Investment Banks
1980	33	4.157	9	4	28	6	18	0	4	5	3	2	0
1981	34	4.280	9	5	29	6	18	0	5	5	3	2	0
1982	36	4.484	9	7	31	6	18	0	7	5	3	2	0
1983	37	4.486	9	8	32	6	18	0	8	5	3	2	0
1984	40	4.555	12	10	35	6	19	0	10	5	3	2	0
1985	42	4.572	12	12	37	6	19	0	12	5	3	2	0
1986	46	4.651	12	14	41	6	21	0	14	5	3	2	0
1987	50	4.741	12	15	45	7	23	0	15	5	3	2	0
1988	56	4.825	13	17	49	7	26	0	16	7	4	2	1
1989	57	5.284	13	20	50	8	24	0	18	7	3	2	2
1990	62	5.379	13	22	53	8	25	0	20	9	3	4	2
1991	62	6.061	15	22	52	7	26	0	19	10	3	4	3
1992	62	6.226	15	23	52	6	26	0	20	10	3	4	3
1993	69	6.252	15	23	57	6	31	0	20	12	3	6	3
1994	70	6.408	16	23	58	6	32	0	20	12	3	6	3
1995	67	6.326	17	23	55	6	29	0	20	12	3	6	3
1996	69	6.468	20	21	55	5	32	0	18	14	3	8	3
1997	70	6.708	22	20	57	5	35	0	17	13	3	7	3
1998	72	7.156	24	20	59	4	35	3	17	13	3	7	3
1999	75	7.680	37	21	60	4	35	3	18	15	3	9	3
2000	81	8.009	59	22	62	4	31	8	19	19	3	13	3
2001	79	8.186	62	20	61	4	27	13	17	18	3	12	3
2002	61	7.287	43	19	46	3	22	5	16	15	3	9	3
2003	54	6.513	44	18	40	3	20	2	15	14	3	8	3
2004	50	6.381	48	16	36	3	18	2	13	14	3	8	3

Appendix 3 (cont'd)

						A	B	C	D		E	F	G
Years	Number of All Banks	Number of All Banks' Branches in Turkey	Number of All Banks' Branches Abroad	Number of Foreign Banks (D+G)	Number of Deposit Banks (A+B+C+D)	*Number of State-owned Deposit Banks*	*Number of Privately-owned Deposit Banks*	*Number of Banks under the Dep.Ins. Fund*	*Number of Foreign Banks*	Development and Investment Banks (E+F+G)	*State-owned Development and Investment Banks*	*Privately-owned Development and Investment Banks*	*Foreign Development and Investment Banks*
2005	48	6.388	50	14	35	3	19	1	12	13	3	8	2
2006	47	6.494	49	15	34	3	17	1	13	13	3	8	2
2007	46	6.808	47	21	33	3	12	1	17	13	3	6	4

Source: The Banks Association of Turkey (http://www.tbb.org.tr/)

Note: The data is summarized for the beginning of each year (exp. 01.01.Year)

Appendix 4 – Definitions of Symbols:

Symbol	Definition
A	Domestic consumption
D	Real dividends
E	Exchange rate
H	Domestic net international debt
I	Domestic physical capital investment expenditure
R	Real interest rate
T	Real domestic trade balance
V	Stock market value of physical capital
X	Domestic share of domestic shares
Y	Real domestic income
л	Foreign owned share of domestic dividends
d	Domestic (superscript)
f	Foreign (superscript)

Appendix 5 – Definitions and Sources of Data for Turkey:

Variable	Source of Data	Definition
Real Exchange Rate	The Central Bank of the Repulic of Turkey (http://www.tcmb.gov.tr)	CPI Effective Exchange Rate (Real) (1995=100) CBRT Monthly. CPI based real effective exchange rate index calculated using the IMF weights for 19 countries including Germany, USA, Italy, France, United Kingdom, Japan, Netherlands, Belgium, Switzerland, Austria, Spain, Canada, Korea, Sweden, Taiwan, Iran, Brazil, China and Greece. An increase in the index denotes an appreciation.
LREXCH		Real Exchange Rate in logarithm
LREXCH2		- LREXCH (defined for Cointegration analysis since an increase would mean depreciation and a fall would indicate appreciation by simplicity)
Stock Market Price Index	Istanbul Stock Exchange (http://www.ise.org/)	Closing values of Stock Market Price Index. National-Financials YTL based. (31.12.1990=33)
LRV		Stock Market Price Index-CPI ratio in logarithm
Foreign Assets	The Central Bank of the Repulic of Turkey (http://www.tcmb.gov.tr)	Foreign Assets of the Banking Sector. Data are inflation adjusted beginning from july 2002 to December 2004 for banking sector and beginning from August 2004 for Central Bank.
LRFASS		Foregin Assets-CPI ratio in logarithm
Foreign Liabilities	The Central Bank of the Repulic of Turkey (http://www.tcmb.gov.tr)	Foreign Liabilities of the Banking Sector. Data are inflation adjusted beginning from july 2002 to December 2004 for banking sector and beginning from August 2004 for Central Bank. Letters of Credit previously classified as 'Time Deposits' are classified as 'Foreign Liabilities'
LRFLIAB		Foregin Liabilities-CPI ratio in logarithm
CPI	Turkish Treasury (http://www.treasury.gov.tr)	1994 Based Consumer Price Index Numbers. The index numbers following January 2006 are derived using the monthly rate of change in 2003=100 consumer price index.