

T.C.
MARMARA ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
İŞLETME (İNGİLİZCE) ANA BİLİM DALI
MUHASEBE-FİNANSMAN (İNGİLİZCE) BİLİM DALI

**THE RELATIONSHIP BETWEEN NET FOREIGN PORTFOLIO
INVESTMENT AND REAL INTEREST RATES IN EMERGING ECONOMIES:
AN EMPRICAL RESEARCH IN ISTANBUL STOCK EXCHANGE**

Yüksel Lisans Tezi

CEREN AYÇA GÖÇEN

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Marmara Üniversitesi
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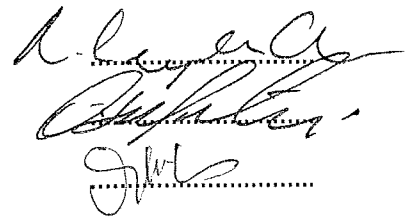
İŞLETME Anabilim Dalı MUHASEBE FİNANSMAN(İNG) Bilim Dalı Yüksek Lisans öğrencisi CEREN AYÇA GÖÇEN' nin THE RELATIONSHIP BETWEEN NET FOREIGN PORTFOLIO INVESTMENT AND REAL INTEREST RATES IN EMERGING ECONOMIES: AN EMPIRICAL RESEARCH IN ISTANBUL STOCK EXCHANGE adlı tez çalışması, Enstitümüz Yönetim Kurulunun 16.07.2009 tarih ve 2009-12/34 sayılı kararıyla oluşturulan jüri tarafından oybirliği/oyçokluğu ile Yüksek Lisans Tezi olarak kabul edilmiştir.

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ÖZET

GELİŞMEKTE OLAN PİYASALARDA NET YABANCI SERMAYE YATIRIMI VE REEL FAİZ ARASINDAKİ İLİŞKİ: İSTANBUL MENKUL KIYMETLER BORSASI ÜZERİNE BİR ARAŞTIRMA

Yabancı sermaye yatırımı, uluslararası piyasada özellikle de gelişmekte olan ülkeler için en önemli sermaye çeşidinden biridir. Deneyisel araştırmalara göre, Net Yabancı Sermaye Yatırımı üç mekanizmadan oluşmaktadır. İlk olarak, net yabancı sermaye yatırımı ile büyüme, reel faiz ve enflasyon gibi makroekonomik değişkenler arasında pozitif bir ilişki bulunmaktadır. İkinci olarak, uzun vadede stok piyasasının gelişimini sağlayarak ekonominin öngörülebilmesine sebep olmakta ve ekonomik gelişimi arttırmaktadır. Son olarak ise, yabancı sermaye yatırımının kısa vadede dolaylı etkileri bulunmaktadır. Gelişmekte olan ülkelerde stok piyasasının serbestleşmesi, özelleştirmeden önce net bugünkü değerın eksi olması sebebiyle, genellikle sermaye maliyetini düşürmektedir ve özelleştirme sonrasında ise stok fiyatları artış göstermektedir. Fakat, stok piyasasının gelişimi ve büyümesi zayıf efektif piyasa koşulları ve yatırımcıların spekülâtif hareketleri sebebiyle gelişmekte olan ülkelerden ziyade gelişmiş ülkelerde görülmektedir.

Bu tezin amacı net yabancı sermaye yatırımı ve makroekonomik değişkenlerden biri olan reel faiz arasındaki ilişkiyi analiz etmektir. Bu sebeple, İMKB’de reel faizin net yabancı sermaye yatırımı ile etkileşimi araştırılmaktadır. 1998 ve 2008 yılları arasında 3 aylık dataları kullanarak, reel faiz değişkeni ile İMKB stok ve bonolarının net alımı analiz edilmektedir. Ocak 1998 ve Haziran 2008 dönemlerinde 126 ayı kapsayacak şekilde 3 aylık datalar kullanılmıştır. 2007 yılında Amerika’da yaşanan mortgage krizi ve 2008 yılında yaşanan son finansal krizin istikrarsızlığı sebebiyle, diğer faktörlerin etkisiyle birlikte Türkiye’de sermaye çıkışları meydana gelmiştir. Bu sebeple, yapılan bir analiz çalışmasında, 2008 yılı elimine edilerek reel faizin net yabancı sermaye akımı üzerindeki etkisi analiz edilmiştir. Bu çalışmada, reel faizin net yabancı sermaye akımı üzerinde istatistiksel olarak anlamlı bir etkisi olduğu tespit edilmiştir.

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ABSTRACT

THE RELATIONSHIP BETWEEN NET FOREIGN PORTFOLIO INVESTMENT AND REAL INTEREST RATES IN EMERGING ECONOMIES: AN EMPIRICAL RESEARCH IN ISTANBUL STOCK EXCHANGE

Foreign portfolio investment (“FPI”) is one of the most crucial capital forms in the international markets, especially for the emerging countries. There are three empirical mechanism of Net Foreign Portfolio Investment (“NFPI”) according to empirical researches. First, there is a positive relation between NFPI and various macroeconomic indicators including growth, real interest rate and inflation. Secondly, stock market development in the long run leads to predictability in the economy and in turn creates economic growth. Finally, there are short term indirect dynamics of NFPI. Stock market liberalization generally lowers the cost of capital indicating negative net present value before privatization and in turn raises aggregate stock prices after privatization process in emerging countries. However, stock market development and growth are seen in developed markets rather than emerging markets due to the weak efficient market and speculative activities of investors.

The purpose of this master thesis is to analyze the relationship between NFPI and real interest rate which is one of the macroeconomic variables. Therefore, the thesis seeks how real interest rates correlate with net capital inflows in ISE. Using quarterly data between 1998 and 2008, the relation between the real interest rate variable and net purchases of ISE stocks and bonds were analyzed. Data used in this thesis covers 126 months in quarter periods between January 1998 and June 2008. Because of the impacts of 2007 mortgage crisis occurred in USA and volatility of the recent 2008 global financial crisis, there are foreign portfolio outflows in favor of other determinants. Therefore, 2008 data was eliminated in one of the analysis to determine the net effects of real interest rates on NFPI. The overall result of this thesis indicates that the relationship between NFPI and real interest rate is statistically significant for the overall period including 1998 financial crisis periods.

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ABBREVIATIONS

AIG	: American International Group
ADRs	: American Depositary Receipts
EMBI+	: Emerging markets bond index
BOT	: The Bank of Thailand
CIS	: Collective Investment Schemes
EU	: European Union
FPI	: Foreign Portfolio Investment
FDI	: Foreign Direct Investment
GDP	: Gross Domestic Product
GEM	: Global Emerging Markets
GSEs	: Government-Sponsored Enterprises
IPO	: Initial Public Offerings
ISE	: Istanbul Stock Exchange
NDFs	: Non-Deliverable Forwards
NFPI	: Net Foreign Portfolio Investment
NPV	: Net Present Value
SIP	: Share Issued Privatization
SOE	: State-Owned Enterprises
SWFs	: Sovereign Wealth Funds
UIRP	: Uncovered Interest Rate Parity

1. INTRODUCTION

Foreign portfolio investment is one of the most crucial capital forms in the international markets, especially for the emerging countries. While national savings are only source of capital accumulation in closed economies, national savings can be financed with FPI in open economies. Therefore, emerging countries try to benefit from international capital flows to provide economic growth. However, because FPI is also volatile and carries default risk, the impacts of cash flows from emerging market are more significant. Turkey exhibits most of the symptoms of an emerging country fighting with the problem of “hot many” shocks. In this sense, Turkey could not be able to borrow in its own currency leading to currency and maturity mismatch and this creates a volatile and unstable circumstance open to crises.

Based on literature (Fernandez-Arias study), interest rate differential between the host country and foreign country is a driving factor attracting FPI into emerging markets. In this thesis, I make analysis with domestic real interest rate rather than international interest rate in which there are impacts of domestic structural policy factors and international economic factors. Based on Calvo empirical study, real interest rates play a crucial role directing FPI, because high short term real interest rates provide a speculative arbitrage advantage seeking NFPI. However, in this thesis real interest rate only explains %14,5 of NFPI between 1998 and 2007 periods showing that there are political and other factors to ascertain NFPI.

This thesis is organized as follows. At the beginning of Section 2, foreign portfolio investment is introduced. Different approaches of FPI and determinants of FPI including pull and push factors were described and referred to previous literature.

Detailed literature review relating to NFPI in emerging economies including Asia, Latin America and Africa regions and developed economies covering 1975 and 2008 periods is described in Section 3. Distribution of private capital framework including FPI, FDI and bank loan through 1975 and 2008 period was determined and seen that FPI movement had increased when liberalization and privatization programmes had increased in global environment. Afterwards, financial and capital market developments in Turkey effecting FPI and relationship between the real interest rate and NFPI are depicted based on the literature.

In section 4, methodology and the data, following by empirical findings are described in the Istanbul Stock Exchange covering 1998 and 2008 time periods. Lag real interest rate influence on NFPI and actual real interest rate realized in the quarter results are compared and seen that investors take immediately put and call decisions related with the interest rate return. Therefore, this creates a risk in Turkey because of the “hot money” transactions. Foreign portfolio investment towards Istanbul Stock Exchange show speculative and short term-base specialties. Sudden withdrawals of the capital lead to unexpected changes in the availability of assets and changes in assets prices in consequence. Also, in one separate analysis, 2008 data were eliminated to see the effects of real interest rate over NFPI through 1998 and 2007 periods. As it is known, 2007 mortgage crisis which is occurred in USA and 2008 global credit crisis influenced ISE in 2008, namely with the contagion effect. Therefore, FPI reversed because of the global economic indicators rather than real interest rate effects in ISE, 2008.

Finally, a conclusion is made based on the empirical findings.

2. FOREIGN PORTFOLIO INVESTMENT

2.1. What is Foreign Portfolio Investment

Portfolio investment includes investments by a resident entity in one country in the equity and debt securities of an enterprise resident in another country which seeks primarily capital gains and do not necessarily reflect a significant and lasting interest in the enterprise. The category consists of investments in bonds, notes, money market instruments and financial derivatives other than those included under foreign direct investment.¹ In this type of investment, it was assumed that investors assess the countries, interest, dividend and risks.

International portfolio movements are based on modern portfolio theory rules. The most important is average equilibrium of different capital returns in the various countries. In an open economy, when financial instrument returns gotten from that country is equal to another country' return, real foreign exchange rate arrangement, expected inflation rate and risk factor, internal and external interest arbitrage may be possible.

$$i_d = i_r + r_f + A_p + R$$

i_d : Financial instrument return of the related country

i_r : Financial instruments return of other countries

r_f : Real foreign exchange rate arrangement

A_p : Expected inflation rate

R : Risk factor

When the equilibrium was differed, cash inflows and outflows can be provided via national interest rate and foreign exchange rate. To apply that policy, financial markets have to be liberalized.²

¹ UNCTAD, "Comprehensive Study of the Interrelationship between Foreign Direct Investment and Foreign Portfolio Investment", UNCTAD/GDS/DFSB/5 (June 1999), p.4.

² Ufuk Başoğlu, "Finansal Serbestleşme ve Uluslararası Portföy Yatırımları", **Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi**, Cilt 3, Sayı:4 (2000), p.90.

2.2. Different Approaches to Foreign Portfolio Investment

There are at least four definitions of perfect international capital mobility including³:

2.2.1. The Feldstein – Horioka Definition

Exogenous changes in national savings can be easily financed by borrowing from abroad using real interest rate and thus need not crowd out investment in the originating country. Therefore, in an effort to measure the “true” degree of capital mobility, Feldstein and Horioka (1980) analyzed the behavior of savings and investments in a number of countries which they argue that if there is perfect capital mobility, changes in savings and investments will be uncorrelated in a specific country.⁴ The Feldstein-Horioka defines that the country’s real interest rate is tied to the world real interest rate⁵.

2.2.2. Real Interest Parity

Based on “Real Interest Parity” definition related with the perfect international capital mobility, international capital flows equalize real interest rates across countries.

2.2.3. Uncovered Interest Parity

Capital flows equalize expected rates of return on countries’ bonds, despite exposure to exchange risk. Interest rate parity is a fundamental relationship in international finance. When the domestic interest rate is less than the foreign interest rate, the domestic currency is expected to appreciate by an amount approximately equal to the interest rate differential. “Uncovered interest rate parity” (UIRP) means that the return on an uncovered foreign currency deposit should be equal to the return on an equivalent domestic deposit regardless of the national market within which the foreign

³ Dilip K. Das and Jeffrey A. Frankel, **International Finance**, Contemporary Issues Book, Chapter 2: Quantifying International Capital Mobility in the 1980s, Routledge London and New York, 1993, p.28.

⁴ Sebastian Edwards, “Capital Mobility and Economic Performance: Are Emerging Economies Different?”, **National Bureau of Economic Research Issue**, NBER Working Paper No. W8076 (December 2000), p.6.

⁵ Jeffrey A. Frankel, “Quantifying International Capital Mobility in the 1980s”, **National Bureau of Economic Research Issue**, NBER Working Papers (1991), pp.228-229.

deposit is located.⁶ Because the uncovered interest rate parity condition exhibits uncovered arbitrage of nominal interest rates, interest rate differential equals to the expected change in the spot exchange rate.⁷

There can be deviation from interest rate parity caused by political and currency crises. The uncertainty about the future imposes a foreign government to restrict the capital flows. Therefore this creates capital outflows. The implication of liberalization was driven by elimination and stabilization of exchange controls, control of inflation, removal of restrictions on capital inflows and outflows, removal of interest rate restrictions and debt reduction with the use of equity and private debt. More specifically macroeconomic stabilization, trade liberalization, privatization and easing of exchange controls can be constructed under economic reform in emerging markets. Also the potential impact of other factors attracts the foreign investors towards emerging markets. All forms of privatization including both share issued privatization (SIP) and direct sales of state-owned enterprises (SOE) affects local capital market dynamics. The common component of privatization impacting capital markets is the transfer of productive resources from the public sector towards the private sector. This transfer allowing investors to success benefits through diversification affects the cost of capital in emerging markets.⁸ By the way, external developments such as waves in the world interest rates are likely to have a larger effect on these economies.⁹ Also, liberalization and privatization exhibits turbulence effects on the interest rate parity by currency channel.

⁶ Bill Francis and others, "Emerging Market Liberalization and the Impact on Uncovered Interest Rate Parity", **Federal Reserve Bank of Atlanta Issue**, Working Paper 16 (August 2002), p.3.

⁷ Li Lian Ong and others, "The World Real Interest Rate: Stochastic Index Number Perspectives", **Journal of International Money and Finance**, No.18 (1999), p.226.

⁸ Geert Bekaert & Campbell R. Harvey, "Emerging Markets Finance", **Journal of Empirical Finance**, No.10 (2003), p.44.

⁹ Philippe Bacchetta and Eric Van Wincoop, "Capital Flows to Emerging Markets, Liberalization, Overshooting and Volatility", **National Bureau of Economic Research**, NBER Working Paper Series 6530 (April 1998), p.4.

2.2.4. Closed Interest Parity

Capital flows equalize interest rates across countries when contracted in a common currency.

Real Interest Differential:

Real interest differential decompose into two components including due to a political or country factors and due to currency factors:

$$r-r^* = (i-i^*-fd) - (fd-DP+DP^*)$$

The first term $(i-i^*-fd)$ is the covered interest differential calling political and country premium. Covered interest differential captures all barriers to integration of financial markets across national boundaries including transaction costs, information costs, capital controls, tax laws, default risk and risk of future capital controls. The second term $(fd-DP+DP^*)$ could be described as the real forward discount calling currency premium. It captures differences in assets according to currency in which they are denominated. Therefore, currency premium can be divided into two factors, the exchange rate risk premium and expected real depreciation.¹⁰

Foreign portfolio investment (FPI) does not entail the advantages of foreign direct investment (FDI) with respect to dissemination of technology and capital flow stability. There are three distinct empirical mechanisms;

1. Positive direct linkage on long-run economic performance,
2. Positive long-run indirect effects of liberalization on economic growth through stock market development, and
3. Indirect channels focusing on the short-run effects of liberalization on private investment through increases in equity prices upon liberalization.

¹⁰ Dilip K. Das and Jeffrey A. Frankel, **International Finance**, Contemporary Issues Book, Chapter 2: Quantifying International Capital Mobility in the 1980s, Routledge London and New York (1993), p.36.

With respect to direct FPI effects, private equity flows have a positive direct impact on macroeconomic performance in emerging markets. There is a positive relation between NFPI and various macroeconomic indicators, including growth, real interest rate and inflation.

Secondly, with respect to indirect FPI effect, long-term stock market development is crucial. Liberalization tends to raise various measures of the stock market development, including market size and liquidity. Equity market development is in turn a robust determinant of macroeconomic growth. Therefore, in summarize, portfolio flows increase stock market development and in turn create economic growth. However, positive relations between stock market development and growth are seen in developed countries rather than emerging countries because of the weak efficient stock market specialty.

Third final framework focuses on short-term indirect dynamics. Stock market liberalization generally lowers the cost of capital and therefore increases aggregate stock prices in emerging markets. Because of the decline in cost of capital and constant in expected cash flow, some investment projects showing negative net present values before privatization exhibits positive net present value after privatization process. This encourages private investment. Argentina, Brazil, Chile, Colombia, India, Korea, Malaysia, Mexico, the Philippines, Thailand and Venezuela had represented temporary increases in private investment.¹¹

¹¹ J. Benson Durham, "A Survey of the Econometric Literature on the Real Effects of International Capital Flows in Lower Income Countries", **Queen Elizabeth House Issue**, QEH Working Paper No.50 (October 2000), pp.13-15.

2.3. Determinants of Foreign Portfolio Investment

There are several factors that play crucial roles in determining net foreign portfolio investment flows to emerging market economies. The increase in NFPI in emerging market economies was a reflection of the rapid expansion and integration of international capital markets that had been driven by economic policy and structural changes, and technological factors. From the standpoint of developing economies, economic policy and structural changes can be categorized into two broad groups: those that are country-specific, or “pull” factors; and those that are external to the country and beyond its control, or “push” factors.¹²

Table 2.1
FPI Host Country Determinants

Determinant Group	Host Country Determinants
Macro-Economic Determinants	-Macroeconomic factors -GDP Growth -Exchange rate stability -Interest rate development -Capital market liquidity
Policy/Regulatory Determinants	-Ease of repatriating dividends and capital -Domestic capital gains tax -Stock and bond market regulations -Quality of domestic accounting and disclosure standards -Speed and reliability of settlement system -Availability of domestic custodians and brokers -Degree of investor rights protection

Source: KPMG (www.kpmg.com) and UNCTAD, World Investment Report 1999.

¹² Joseph T. Yap, “Managing Capital Flows to Developing Economies: Issues and Policies”, Philippine **Institute for Development Studies**, Discussion Paper Series No.41 (2000) pp.3-4.

2.3.1. Push Factors

Push factors are “external factors” that operate by reducing the attractiveness of lending to industrial-country borrowers. Changes in international interest rates, recessions in industrialized countries, trade shocks, increases in international risk premium and realignments among major currencies are examples of “push” factors.¹³ Trade developments, international business cycle and its impact on profit opportunities, any regulatory changes affecting the international diversification of investment portfolios at the main financial centers are the other external factors.¹⁴ When the real interest rates in the world economy had changed, the attractiveness of domestic assets increased or declined. For example changes in interest rate in the United States are the most crucial external factors leading investors into emerging countries for searching higher returns.

2.3.2. Pull Factors

Pull factors are “internal factors” operating through developments in the risk return characteristics of assets issued by emerging country debtors, such as resulting from productivity-improving economic reforms.¹⁵ Successful stabilization programs and capital account liberalization are the more prominent “pull” factors and boost capital inflows. A similar outcome results from the introduction of institutional reforms, including liberalization of the domestic capital market and opening of trade transactions and government policies caused from incredible rise in the rate of return on investment because of the tax advantage.¹⁶ Attempts to sterilize foreign exchange transactions through either open market operations or increases in reserve requirements often drove

¹³ Roumen Islam, “Should Capital Flows Be Regulated? A Look at the Issues and Policies”, **World Bank Policy Research**, Working Paper 2293 (March 2000), p.3.

¹⁴ Guillermo A. Calvo and others, “Inflows of Capital to Developing Countries in the 1990s: Causes and Effects”, **Inter-American Development Bank Issue**, Working Paper 302 (1996), p.1.

¹⁵ Peter Montiel and Carmen M. Reinhart, “Do Capital Controls and Macroeconomic Policies Influence the Volume and Composition of Capital Flows? Evidence from the 1990s”, **Journal of International Money and Finance**, No.18 (1999), p.621.

¹⁶ Roumen Islam, p.3.

nominal and real interest rates higher, affecting foreign portfolio flows and raising debt-servicing costs for the government and central bank.¹⁷

Portfolio investment, in the form of venture capital, corporate bonds, government bonds and derivatives, has a direct influence on economic output through the injection of capital. The higher portfolio flows have the added benefit in order to make host countries' financial market structures more efficient because of the tighter competition. On the other hand, portfolio flows have pitfalls because of the volatility of the capital flows. Portfolio investment is highly sensitive to changes in the determinants mentioned above table and may be withdrawn from the markets at a short notice.

Table 2.2 shows some of the studies with the empirical results related with the effects of those determinants on FPI based on Bank for International Settlement Working Paper.

¹⁷ Carmen Reinhart and Patrick Asea, "Real Interest Rate Differentials and the Real Exchange Rate: Evidence from Four African Countries", **Munich Personal Repec Archive**, Paper No.13357 (August 1995), pp.2-3.

Table 2.2
Determinants of FPI

Authors	Methodology	Sample Period	Findings
<i>I. Economic Fundamentals – Push and Pull Frameworks</i>			
Calvo, Leiderman and Reinhart (1993)	Principal components analysis and structural VAR	1973-1991	Foreign exchange reserves and real exchange rate variables is due to global factors, particularly US interest rates and industrial production.
Fernandez-Arias (1994)	Panel data analysis	1989-1993	With a decline in global interest rates, the author finds nearly %86 increase in NFPI for the average emerging countries.
Hernandez and Rudolph (1995)	Fixed effects panel data analysis	1986-1993	FPI has coincided with a period of both low international interest rates and domestic policy reform. The authors suggest that the uneven distribution of private flows among regions and among countries within those regions points to the role played by domestic factors. They also argue that earlier studies showing a strong role for external variables may have failed to properly identify the relevant domestic variables. Proxies for domestic factors such as stock price earnings ratios and secondary market prices of external debt were not controlled by policymakers, nor were they independent of international interest rates.
Taylor and Sarno (1997)	Cointegration and error-correction models	1988-1992	Shifts in capital flows may be determined by both push and pull factors and by both permanent and transitory elements, but given the difficulty of determining theoretically which of these factors is relatively more important, the issue must be resolved empirically. Cointegration techniques reveal that both domestic and global factors explain FPI to developing countries and represent significant long-run determinants of portfolio flows.

Chen and Khan (1997)	Theoretical model	1977-1995	The authors show that the pattern of NFPI is influenced by the combined effect of financial market development and growth potential in the recipient countries. An implication is that if one country has a more developed capital market than another one with an identical growth potential, it will be able to attract capital flows from that country.
World Bank (1997)	Principal components analysis and panel data analysis	1973-1995	-Based on World Bank study, domestic and structural factors might have played a more crucial role during 1994-95 than previously. WB study shows that co-movements between US asset returns and US portfolio investment to Asia and Latin America became much weaker between 1994 and 1995. -It explains the lower correlation between total flows to emerging market economies and mature country interest rates partly by the fact that FDI has increased sharply as a proportion of total capital flows to emerging market countries. -The WB also attempted to show the relative importance of cyclical and structural factors driving NFPI. Its results show that despite a high degree of cyclicity, there is a clear upward structural trend in portfolio flows to Asia and Latin America.
Chuhan, Claessens and Mamingi (1998)	Panel data analysis	1988-1992	Global factors (the slowdown in US industrial production and the drop in US interest rates) are important in explaining portfolio investment, but country-specific developments (country credit ratings, secondary bond prices and the black market premium) are at least as important, especially for Asia.

Montiel and Reinhart (1999)	Fixed-effects panel data analysis	1990-1996	The authors focus on both pull and push factors. The two factors could be complementary, with push factors determining the timing and magnitude of portfolio investment and pull factors determining the geographical distribution of the flows. The authors also show evidence that capital controls influence the composition of flows, not their volume, while sterilized intervention influences volume and composition, skewing flows to short maturities. Authors suggest that idiosyncratic features may have played a larger role in attracting foreign investors in recent years.
Fornari and Levy (1999)	Panel data analysis	1985-1998	Financial variables (such as the ratio of stock market capitalization to GDP) have a higher explanatory power than more traditional macro variables (such as output, international trade and interest rate differentials).
Kamin and Babson (1999)	“Early warning system” approach, probit models	1981-1998	Devaluation crises in Latin America have primarily been a function of domestic policy and economic imbalances, with external factors playing only a secondary role for FPI.
Goldberg (2001)	Fixed-effects panel data analysis	1984-1989	Author finds that bank claims on emerging markets are not highly sensitive to local country GDP and interest rates. US bank claims on Latin American countries expand when the United States grows faster and when US interest rates rise, but for the other regions claims are not tightly related to macroeconomic fundamentals. US banks have not been volatile lenders internationally since no statistically significant retrenchment of their international claims took place even in periods of global financial crises. Since emerging market banks are highly sensitive to local credit conditions, such stable external lending may reduce economic fluctuations in emerging market countries.

World (2001)	Bank	Panel regressions, Vector Auto Regressive (VAR) model	1970-1998	-Global factors include US industrial production, US interest rates, US swap and high yield spreads (as proxies for risk aversion) and the EMBI. -Local factors include the level of domestic credit, movements in output and prices, movements in short-term interest rates and stock prices, the country's credit rating and foreign exchange reserves as a percentage of both imports and short term debt. -The model uses VAR techniques, which allows for lagged interaction between FPI and the domestic factors that influence them. A discussion of forecasting results highlights that access to international capital markets depends critically on low inflation, adequate reserves and an appropriate economic framework. At the same time, real and financial developments in the global economy have a powerful impact.
<i>II. Gravity and Information Cost Models</i>				
Ghosh and Wolf (2000)		Probit models and panel data analysis	1990-1995	-The authors contrast two explanations for the continuing lack of access of many developing countries to international capital markets. The first attributes to a lack of economic development. NFPI requires fairly sophisticated economies and well functioning financial markets. Countries that are excluded will only gain access once their economies become more mature. -The second view ascertains that financial flows, just as trade flows, depend crucially on location, and specifically on proximity to mature markets. Looking across recipient countries, they find that economies located in Africa and the western hemisphere enjoyed less access to world capital markets. However, this direct dependence on location vanishes, once controls for other potential determinants of access are provided such as GDP per capita. -The second piece of evidence was gathered from gravity regressions of different transaction types (exports, FDI, loans, debt and equity) for the G7 economies. They find a strong uniform pattern across transaction types, with negative estimated distance elasticity (though with low significance levels).

Savastano (2000)	Comments on Ghosh and Wolf (2000) and additional tests	1990-1995	Author argues that distance is probably not among the factors that will help understand capital flows because, in contrast to trade flows, the cost of FPI is not closely related to distance.
Portes and Rey (1999)	Panel data	1989-1996	-FPI flows depend on market size in both source and destination countries, as well as on trading costs, in which both information costs and transaction technology play a role. -The resulting estimating equation, with equity market capitalization (representing market size), distance (for informational asymmetries), telephone calls and multinational bank branches (information transmission), the degree of insider trading in stock markets (information asymmetry) and an index of financial market sophistication (efficiency of transactions) accounts for almost 70% of the variance of portfolio flows. -The authors interpret this as strong evidence that there is an important geographical component in international asset flows, with little support for diversification and return-chasing motives.
Focarelli and Pozzolo (2000)	Panel data	1994-1997	The authors' results show that banks with cross-border shareholdings are larger and have headquarters in countries with a more developed and efficient banking market. Such banks prefer to invest in countries where expected profits are large, owing to higher expected economic growth and the prospect of reducing local banks' inefficiency. These factors are more important for NFPI than those related to the degree of openness of the origin country and its economic integration with the destination country.

Buch (2000)	Panel data and cointegration analysis	1983-1999	-Using time series regressions, the author finds clear evidence that the EU's Single Market Programme and the Basel Capital Accord have had a positive impact on cross-border banking activity. However, the evidence is less convincing for capital account □ liberalization. -Using cross-sectional data to obtain more information about country-specific factors, the author finds that information costs (as proxied through distance), and the presence of a common language and legal system also have an impact on banks' investment decisions. When weighing the relative importance of regulation and information costs, the results differ between countries.
Portes, Rey and Oh (2001)	Panel data analysis	1988-1998	The authors argue that, the gravity model for FPI seems as robust as the gravity model for FDI. They interpret their result as supporting the hypothesis that informational asymmetries account for the strong negative relationship between FPI and distance, where the distance variable acts as a proxy for informational frictions.
<i>III. Liberalization, International Interest Rate Spreads and Financial Contagion</i>			
Dooley, Fernandez-Arias and Kletzer (1996)	Panel regressions	1986-1993	-International interest rates have been a more important factor than debt reduction and policy reforms in debtor countries. -The authors show that the empirical relationship between the secondary market price of developing countries' debt and international interest rates is robust to changes in model specification and the period considered (pre and post-1989). -They conclude that secondary market prices may be more informative as a barometer of the financial strength of a debtor country as compared to the volume of observed private capital flows.

Bartolini and Drazen (1997)	Theoretical model	1970-1995	-The authors argue that NFPI in emerging market countries, subsequent selective outflows and accompanying policy reversals may be indicative of neither investor irrationality nor bad luck in recipient countries but may simply reflect investors' optimal response to available information. -When a common external shock, such as lower world interest rates, facilitates the widespread adoption of liberal policies, it also reduces the information content of the policies themselves. Lacking information to discriminate between countries, investors invest in all markets where policies favorable to investment have been adopted, only to discover the weak commitment of some countries in the face of a subsequent adverse shock. -The authors also develop an index of capital controls in emerging markets which shows that the decline in capital account restrictions facilitated the boom in portfolio flows to emerging market countries.
Bacchetta and van Wincoop (1998)	Theoretical model and numerical simulation	1980-1995	-The wave of financial liberalization and structural reforms undertaken in recent years by developing and industrialized countries is the fundamental factor behind the increase in FPI to some developing countries. -They consider a simple dynamic model of optimal portfolio decisions which leads to portfolio adjustments, and gives rise to a non-linear relationship between capital flows and liberalization. -They argue that incomplete information and the subsequent learning process may have a substantial impact on the dynamics of capital flows. They contend that their model can explain several features of capital flows, such as overshooting, volatility and contagion.

Eichengreen and Moody (1998)	Panel data analysis	1991-1996	-The volume and composition of international lending, and not just the price of new issues, are affected by US interest rates. -Authors find that a rise in US Treasury yields consistently reduces the quantity of bonds brought to the market.
Sarno and Taylo (1999)	Kalman filter, panel data analysis	1988-1997	-The authors find evidence of stock market bubbles in the 1990s in all the East Asian economies except for Australia. -Using an unobserved components model, they also find that there is a statistically significant permanent component in equity and bond flows to East Asia but this is very small compared to the temporary component.
Van Rijckeghem and Weder (2000)	Panel data analysis	1997-1998	The authors' tests are based on a two-type classification of financial contagion: a) The "common lender effect" (which exists if countries sharing the same bank creditor become vulnerable to spillover effects resulting from losses incurred in a particular borrowing country) and b) The "wakeup call effect" (which refers to a sudden shift in perceptions for an entire asset class following an initial crisis due to reinterpretation of information and revisions of expected returns). The common lender effect can be tested by looking at whether bank flows are explained by exposures in a first crisis country. This is done by examining the link between disaggregated bank flows (by creditors and borrowers) and exposure to a "ground zero country", while controlling for other determinants of flows (such as macroeconomic variables). They calculate exposures on the eve of the Mexican, Thai and Russian crises, and semiannual flows in the subsequent six to 12-month period. OLS regressions based on data for 11 creditor countries and 30 emerging market economies point to a large and statistically significant common lender effect during the Thai crisis. The effect is not statistically significant in the Russian crisis.

Source: Jeanneau Serge, BIS Working Paper, 2002

3. NET FOREIGN PORTFOLIO INVESTMENTS IN EMERGING MARKETS vs. DEVELOPED ECONOMIES

In closed economies, national savings are only source of capital accumulation. However, in open economies, national savings will be financed with foreign investments. Therefore, emerging countries try to benefit from international capital movements via international liberalization program.¹⁸

During most of the last 50 years, emerging countries had severely controlled international capital movements through a variety of channels including taxes, administrative restrictions and outright prohibitions. In the last decade, the capital account has been opened in emerging countries. Free capital mobility had been conducted with the “Washington Consensus” which the reform policies favored by the multilaterals included encouraging FDI and the liberalization of domestic capital markets. During the most of the post World War II era, the vast majority of the emerging nations had a closed capital account.¹⁹

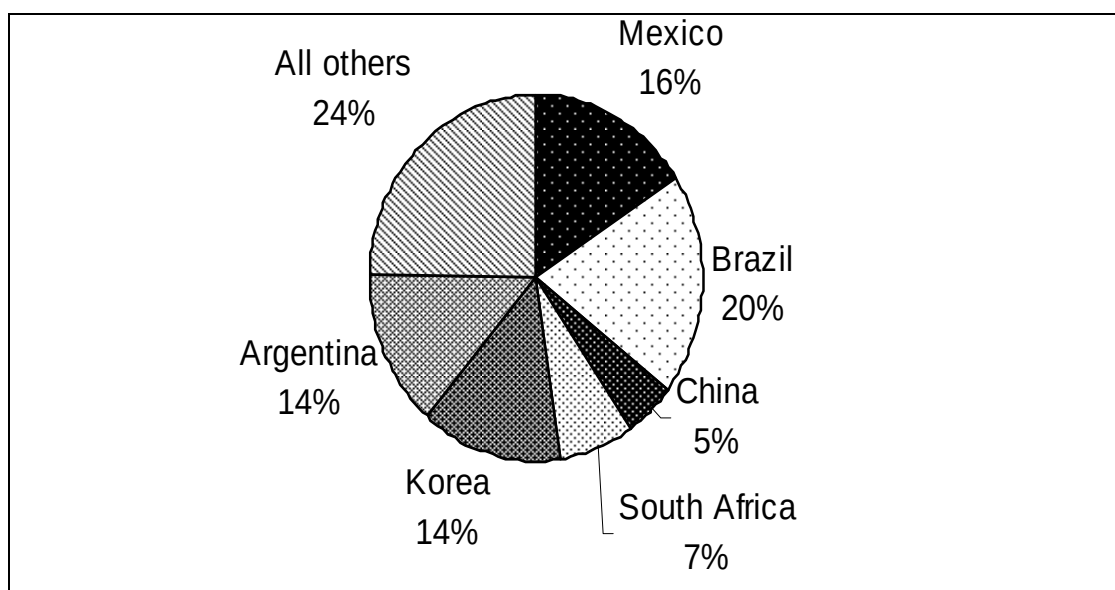
Some countries have played a more important role than others in global capital markets over the last three decades. Among the industrial countries, since 1970 the United States and the United Kingdom were both dominant suppliers and users of capital. France, Germany, Japan, United Kingdom, and United States countries were also the largest suppliers and users of capital, accounting for about two-thirds of all private capital inflows and outflows. For emerging countries, the bulk of capital flows have been directed toward Asia and Latin America.²⁰

¹⁸ Ferit Kula, “Uluslararası Sermaye Hareketlerinin Etkinliği: Türkiye Üzerine Gözlemler”, **İktisadi ve İdari Bilimler Dergisi**, Cilt 4, Sayı 2, 2003, s.142.

¹⁹ Sebastian Edwards, “Capital Mobility and Economic Performance: Are Emerging Economies Different?”, **National Bureau of Economic Research**, NBER Working Paper No.W8076 (December 2000), p.5.

²⁰ International Monetary Fund, **World Economic Outlook, World Economic and Financial Survey**, 2001, p.151.

Graph 3.1
Largest Users of Portfolio Investment



Source: Numeric data is taken from IMF Statistics, 2001

Countries with relatively liberalized capital accounts receive higher capital flows whereas countries that are more closed receive moderate amounts of capital flows mainly in the form of FDI rather than FPI. Transition economies and emerging economies (Latin America, Africa and Asia) will require large-scale investment to modernize plants, introduce new technologies and expand infrastructure. Most of this money comes from private sector, with a large portion from foreign investors.²¹

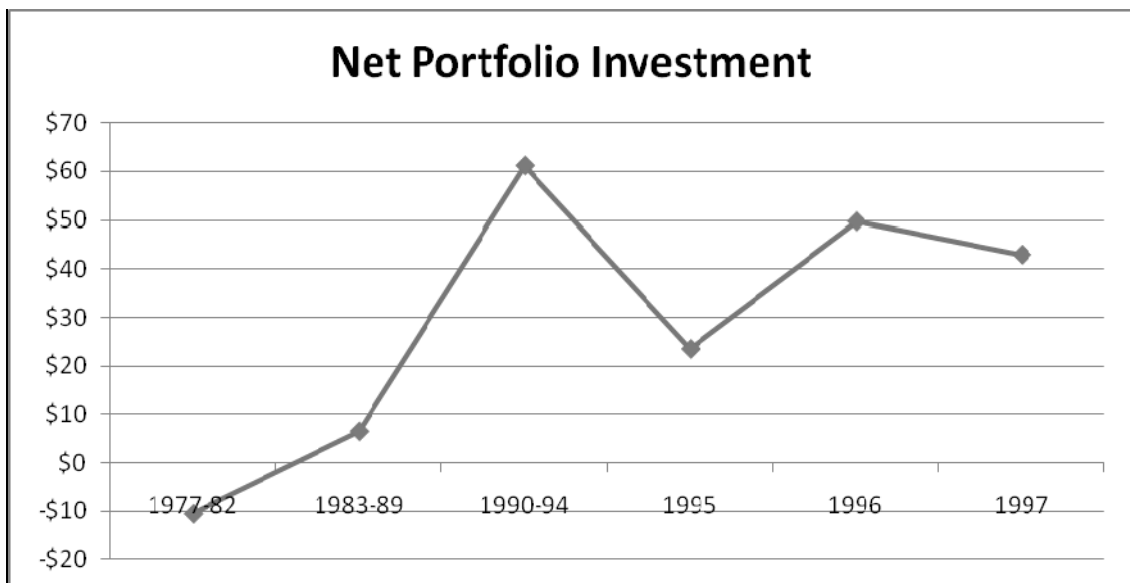
3.1. Net Foreign Portfolio Investment (NFPI) in Emerging Economies

Portfolio investment consists of two sources: domestic investors of the recipient country and foreign investors' investment. The components of the second source of investment, NFPI, are volatile and include "default risk". Therefore, in emerging countries with substantial default risk and low country creditworthiness, the effects of cash outflow shocks on return are more significant. International real interest rate is a driving factor attracting foreign portfolio investment into emerging markets, with the exception of Argentina, Korea and Mexico (country creditworthiness

²¹ International Monetary Fund, **World Economic Outlook, World Economic and Financial Survey**, 2001, p.151.

influence).²² Real interest rates play a significant role on the direction of the capital flows, because high short term real interest rates provide an attractive circumstance for speculative arbitrage seeking portfolio flows in short term. Capital inflows to emerging countries aim to create an arbitrage margin by increasing domestic interest rates and then appreciating real exchange rates.²³

Graph 3.2
Capital Flows to Emerging Markets Annual Averages (US\$ billion)



Source: Numeric data is taken from Global Finance and Macroeconomy, 2000

When countries are net borrowers of funds from the rest of the world that they experience current account deficits, net capital inflow from external sources are measured.²⁴ While since 1970s, there is an increase in capital inflows into emerging countries, there was a pro-cyclical process in which seen slowdown in economy and recession during the periods. Foreign portfolio inflows conducted into emerging countries in 1970s, but seen steep inversion in 1980s. Actually more refreshment and inversion was seen in 1990s (Graph 3.2).

²² Eduardo Fernandez-Arias, "The New Wave of Private Capital Inflows: Push or Pull?", **World Bank Policy Research**, Working Paper No.1312 (June 1994), p.5.

²³ Sara Calvo and Carmen Reinhart, "Capital Flows to Latin America: Is There Evidence of Contagion Effects?", **World Bank Policy Research**, Working Paper No.1619 (June 1996), p.14.

²⁴ A. J. Makin, **Global Finance and the Macroeconomy**, New York USA Palgrave Publishers, (2000), p.4.

Planned new structure of the world economy and designed international capital movements in Bretton Woods conference was broke down in 1970s. Afterwards, both world economy and international capital movements changed radically. The most crucial specialty of the new global era is increased mobility of international foreign portfolio movement. Investors in developed countries conducted to portfolio investments rather than direct investments after 1970s crises.²⁵

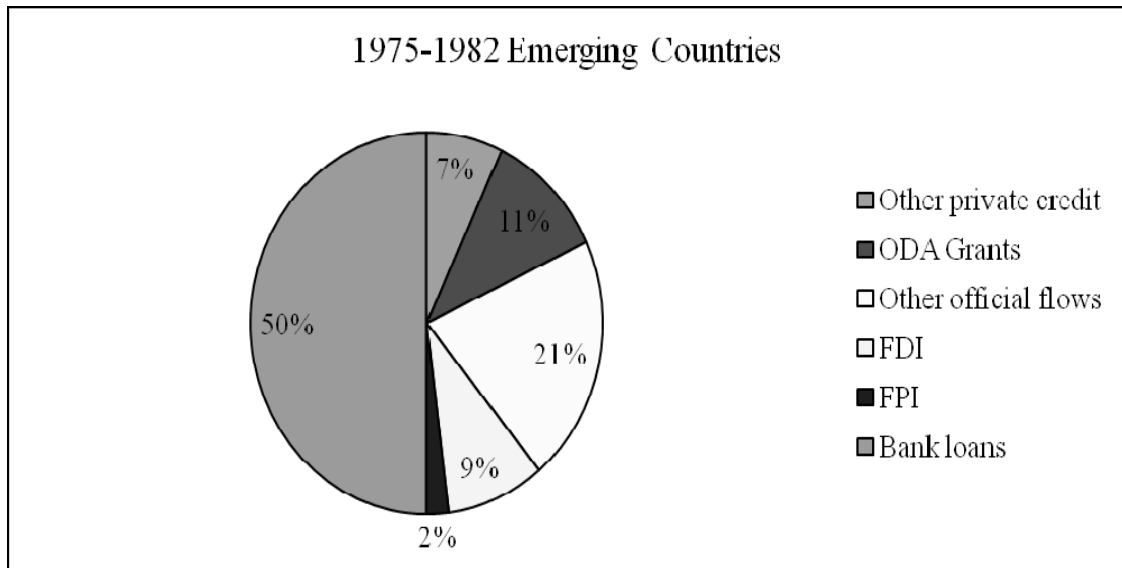
Until early 1970s, the most crucial external financing for emerging countries was official loans rather than FPI. This was based on the recognition that the capability of emerging countries to fill their resource gaps through commercial borrowing. Official financing continued to expand rapidly in the 1970s, but there was also a rapid expansion of private financial flows, primarily in the form of bank loans in industrial countries. This type of financial flow had served to recycle the surpluses of major oil exporters which emerged after the sharp increases in oil prices during 1973–1974. This expansion lasted in 1982 with a rapid withdrawal of bank lending, resulting in a generalized debt crisis in the third world and a lost decade for growth and development (Graph 3.3, 3.4., 3.5).²⁶ Private capital flows moved significantly away from credits and towards foreign direct investment since the international debt crisis of the 1980s. Foreign portfolio investment experienced a steep increase in the 1990s with the financial liberalization policies applied by the countries.²⁷

²⁵ Şeyda İnandım, “Kısa Vadeli Sermaye Hareketleri ile Reel Döviz Kuru Etkileşimi: Türkiye Örneği”, **Türkiye Cumhuriyeti Merkez Bankası** (Kasım 2005), p.9.

²⁶ Yılmaz Akyüz and Andrew Cornford, “Capital Flows to Developing Countries and the Reform of The International Financial System”, **UNCTAD**, No.143 (November 1999), p.8.

²⁷ Josef T. Yap, “Managing Capital Flows to Developing Economies: Issues and Policies”, **Philippine Institute for Development Studies**, Discussion Paper Series No. 41 (November 2000), p.4.

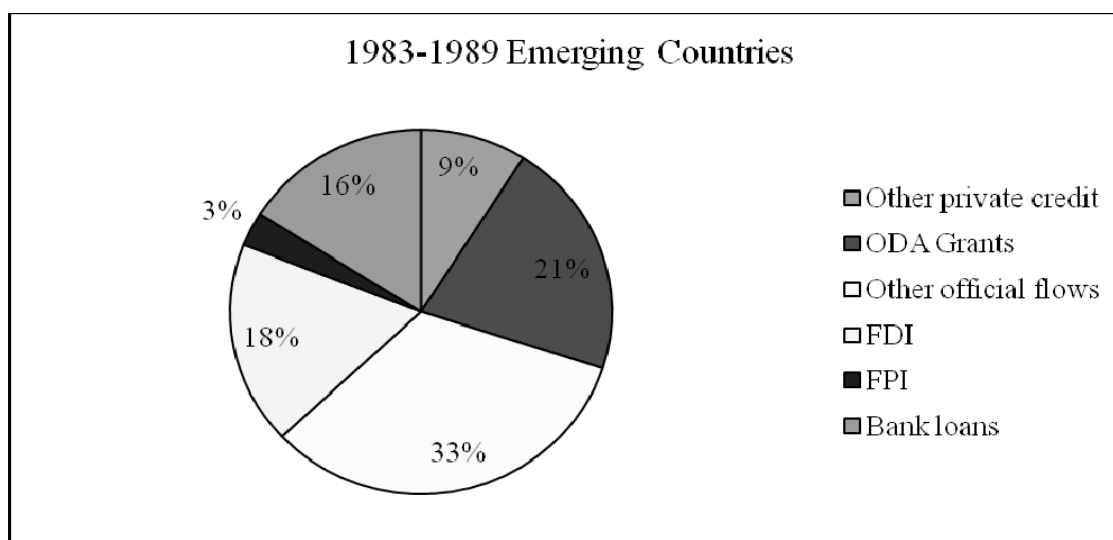
Graph 3.3
Percentage of Net Capital Inflows by Type of Flows, 1975-1982



Source: Numeric data is taken from World Bank, 1999

During 1975-1982 periods, private capital flows include 2 percent foreign portfolio investment, 9 percent foreign direct investment and 89 percent private credits, bank loans, ODA grants and other official flows (Graph 3.3).

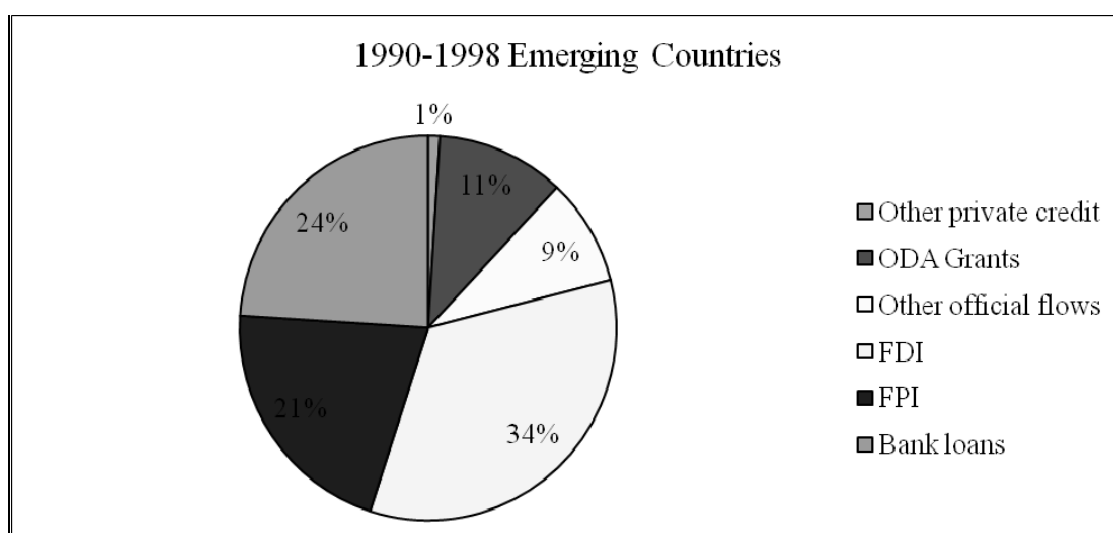
Graph 3.4
Percentage of Net Capital Inflows by Type of Flows, 1983-1989



Source: Numeric data is taken from World Bank, 1999

During 1983-1989 periods, private capital flows include 21 percent foreign portfolio investment, 18 percent foreign direct investment and 61 percent private credits, bank loans, ODA grants and other official flows.

Graph 3.5
Percentage of Net Capital Inflows by Type of Flows, 1990-1998



Source: Numeric data is taken from World Bank, 1999

During 1990-1998 periods, private capital flows include 21 percent foreign portfolio investment, 34 percent foreign direct investment and 45 percent private credits, bank loans, ODA grants and other official flows. During this period, most of capital inflows (70 percent) have gone to East Asia and Latin America, 21 percent of private capital inflows to Europe and Central Asia. Only 1 percent private capital inflows has gone to Sub-Saharan region, because of not implemented structural domestic reforms.²⁸

For the emerging countries as a whole, after a period of liberalization in the 1970s, the trend toward openness reversed in the 1980s. Developing countries began to suffer some problems in foreign debt payments. While public deficits were growing in those countries, this situation caused to damage macroeconomic stability. On the other hand, while there is economic slowdown throughout the world, international interest rates had increased sharply.²⁹

Since mid-1980s, as a result of rise in real interest rate and financial liberalization policy applications, savings were transferred from not productive-assets into banking sector, providing quick growth while using those funds. In summarize, developing countries applied monetary and fiscal policies to encourage “FPI” and “FDI” rather than short term borrowing to minimize external shock effects.³⁰

Portfolio liberalization appears to have been lower in the early 1990s because of the financial crises that influenced many emerging countries with access and average is only at the same level as it was in the late 1970s.³¹ In summarize, the emerging countries experienced two full medium term cycles having a strong impact on economic stability and growth in many countries. The first one is the international bank lending to emerging countries in the 1970s lasted with debt crises including the most of the emerging world in the 1980s. Another boom in the 1990s was caused mostly from FPI.

²⁸ Leonardo Hernandez and Heinz Rudolph, “Sustainability of Private Capital Flows to Developing Countries: Is a Generalized Reversal Likely?”, **World Bank Policy Research**, Working Paper 1518 (October 1995), p.10.

²⁹ Şeyda İnandım, “Kısa Vadeli Sermaye Hareketleri ile Reel Döviz Kuru Etkileşimi: Türkiye Örneği”, **Türkiye Cumhuriyeti Merkez Bankası** (Kasım 2005), p.9.

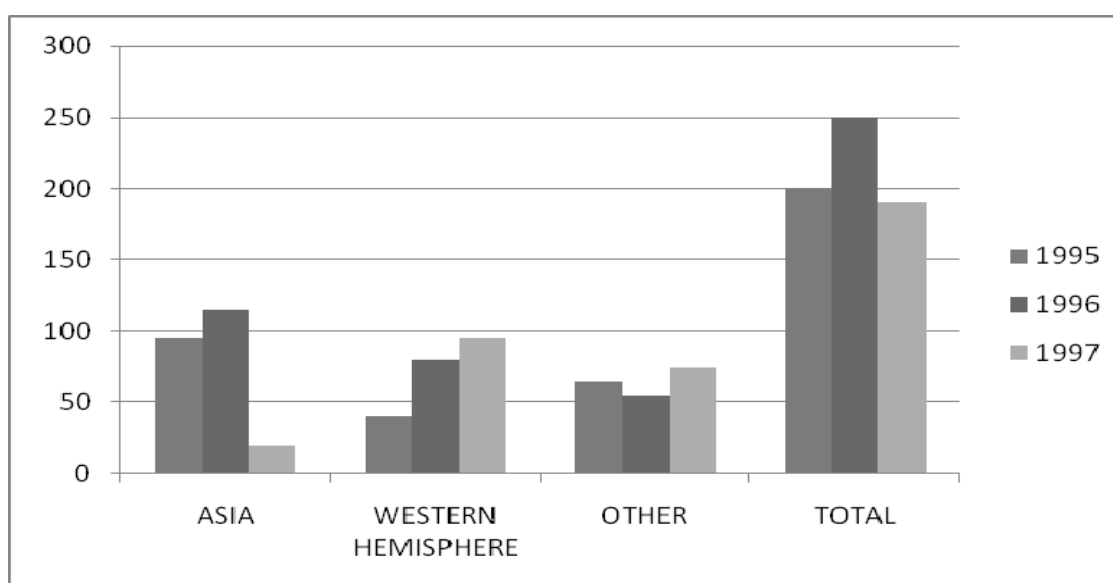
³⁰ Ufuk Başoğlu, “Finansal Serbestleşme ve Uluslararası Portföy Yatırımları”, **Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi**, Cilt 3, Sayı:4 (2000), p.4.

³¹ International Monetary Fund, **World Economic Outlook: World Economic and Financial Survey** (October 2001), pp.150-163.

There is a steep reduction in net flows since the Asian crisis. The withdrawal of funds since the Asian crisis had initially reflected investors' perception of rising risk of investing in emerging countries, as a result of financial turmoil and crises.³²

Portfolio flows are associated with equity and debt security trade. Net portfolio flows rose from zero in the mid 1980s to almost 4% of GDP in 1993. Capital flows are very volatile, decreasing to 1% of GDP in 1995 as a result of Mexican crises and increasing to 3% of GDP in 1996.³³ Capital flows to developing countries had increased dramatically over the decade prior to the 1997 Asian financial crisis. Private capital flows moving significantly away from loans and towards FDI since the international debt crisis of the 1980s dominated official flow beginning in 1992. Portfolio capital including equities and bonds also experienced a sharp increase in the 1990s.³⁴

Graph 3.6
Capital Inflows by Region (US\$ billions)



Source: Numeric data is taken from Global Finance and Macroeconomy, 2000

In the early 1990s, equity markets in many emerging markets were not wide enough. In emerging economies were dominated by state-owned entities and family

³² United Nations, **World Economic Social Survey: International Private Capital Flows**, 2005, p.75.

³³ Philippe Bacchetta and Eric Van Wincoop, "Capital Flows to Emerging Markets, Liberalization, Overshooting and Volatility", **National Bureau of Economic Research**, NBER Working Paper Series 6530 (April 1998), p.2.

³⁴ Joseph T. Yap, "Managing Capital Flows to Developing Economies: Issues and Policies", **Philippine Institute for Development Studies**, Discussion Paper Series No. 41 (2000), p.3.

owned companies. Therefore, governments crowded out equity markets by floating international bonds at high real interest rates to cover large fiscal deficits. In order to provide liquidity and diversification, level of daily stock market trading must be achieved.³⁵ Emerging economies received 30 percent of global portfolio equity flows in 1990.

The world seems to enter third cycle recently. Recovery from the global slowdown in 2001, development of international economic circumstances and strengthened economic conditions in emerging countries have provided a new recovery of private capital flows since 2003.³⁶

Although foreign portfolio flows to emerging countries have increased steeply in recent years, they are sensitive to a country's openness. Rates of return, which is the most important determinant of capital flows, are often very high in the financial market of emerging countries compared with industrialized countries, because of the high risk generated by high volatility.³⁷ In most cases, the crises are associated with large portfolio inflows that are not efficiently channeled to the most productive investment opportunities.

Emerging countries provided access to foreign capital after the debt crisis of the mid-1980. In the early 1990s, several factors interacted to make the emerging countries fertile territory for FPI.

³⁵ W. Lieberman and Christopher D. Kirkness, "Privatization and Emerging Equity Markets", **The World Bank** (March 1998), p.9.

³⁶ United Nations, **World Economic Social Survey: Dealing with Macroeconomic Insecurity**, 2008, p.29.

³⁷ Mark P. Taylor and Lucio Sarno, "Capital Flows to Developing Countries: Long and Short Term Determinants", **The World Bank Economic Review**, Oxford University Press, Vol. 11, No: 3 (September 1997), p.454.

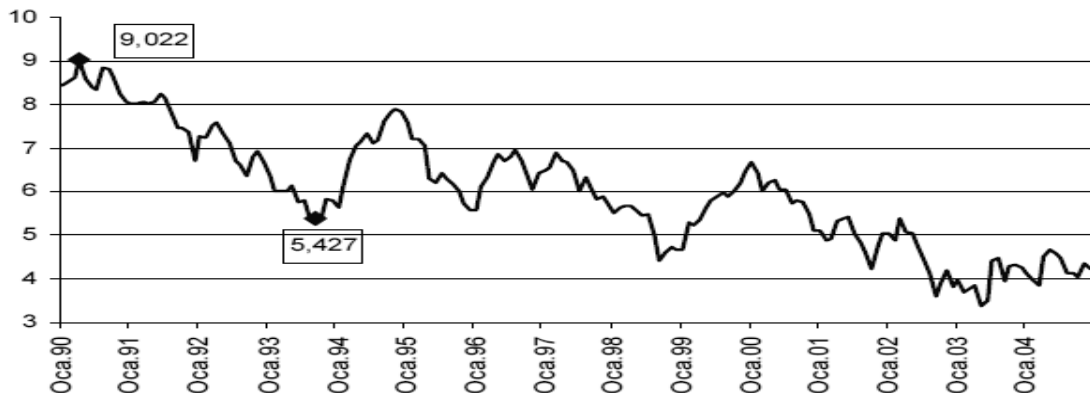
Global Interest Rate:

First, there has been a steep rise in portfolio investment flows to emerging countries, due to a fall in real interest rates in international financial markets. For example, in the mid 1990s, there were cash inflows to Mexico, Argentina, and Chile that were successful countries in the structural adjustment policies, and into Brazil that public deficits had increased and economic indicators were becoming worse. The low level of U.S. interest rates (as an indicator of international interest rate) has been as one of the major external factors for increased portfolio flows to emerging markets in 1993. The fall in interest rates induced investors in developed countries to search for higher returns.³⁸ U.S. interest rates play a more dominant and systematic role in describing foreign portfolio flows to emerging markets than U.S. economic growth. Increasing U.S. interest rates are related with decreasing capital flows to emerging markets. FPI are consistently vulnerable to interest rate. U.S. real interest rates are significant in explaining portfolio flows in all regions. However, the impacts of real interest rates through 1990 and 2004 are greatest in the Western Hemisphere and lowest in Africa because of the other regional conditional differences (Graph 3.7).³⁹ By the way, emerging countries face major crises because of the external factors including a rise in international interest rates. Such a crisis is not likely to occur in the short or medium terms. Therefore, appropriate policy actions must be taken to develop economic conditions.

³⁸ Geert Bekaert and Campbell R. Harvey, "Emerging Markets Finance", **Journal of Empirical Finance**, No.10 (2003), 3-55, p.17.

³⁹ Guillermo Calvo and others, "The Growth Interest Rate Cycle in the United States and Its Consequences for Emerging Markets", **Inter American Development Bank**, Working Paper 458 (March 2001), p.17.

Graph 3.7
US 10-Year Treasury bond Interest Rates (January 1990-December 2004)



Source: Calvo, G., Inter-American Development Bank, p.17.

Domestic Factors:

Second, domestic factors play a significant role to attract FPI. Therefore, countries may expect to continue to receive capital flows as long as domestic policy reforms remain on the right condition. As long as domestic savings were rose, FPI is sustained to improve the long-term prospects by increasing investment rates and growth rate of exports increase. In other words, economic fundamentals must be developed to attract foreign investors.⁴⁰

Portfolio Diversification via Technological Developments:

Third, international capital movement had risen with unforeseen conditions in 1990 to spread their country risks through portfolio diversification with the effects of the technologic developments.⁴¹ Derivative explosion in the global derivative markets as a way of portfolio diversification is also crucial impact causing crises. “Emerging market” issue providing portfolio diversification opportunities to the investors was begun to use. Banks used financial derivatives to manage their currency and interest rate risks. For example, in Mexico when pressure on the exchange rate began to build, those circumstances caused to Mexican crises. Bank lending and portfolio flows, especially to Asian countries, were increasingly intermediated through structured derivative

⁴⁰ Leonardo Hernandez and Heinz Rudolph, “Sustainability of Private Capital Flows to Developing Countries: Is a Generalized Reversal Likely?”, **World Bank Policy Research**, Working Paper 1518 (October 1995), p.8.

⁴¹ Merih Celasun, “2001 Krizi, Öncesi ve Sonrası: Makro Ekonomik ve Mali Bir Değerlendirme”, <http://www.econ.utah.edu/~ehrbare/erc2002/pdf/i053.pdf>, (22 Mayıs 2008), p.6.

instruments. Derivative product usage increased because of the ability of isolate the risk. Also, floating exchange rate is a crucial factor for this development to hedge the value against changes in exchange rates. Derivatives can also provide a tool for pricing different risks, so rising market efficiency. However, derivatives increase leverage in markets, provide short term speculation and increase macroeconomic volatility. Derivatives can be used for tax avoidance, manipulation and fraud. Therefore, derivatives cause systematic risk for developing countries. Open currency and interest rate positions in Asia in the mid-1990s increased relative to the domestic GDP and were a major factor in the Asian crises. This situation also was called for Indonesia in which companies had been speculating on the exchange rate through foreign exchange forwards and swaps. Those companies were forced into bankruptcy when the currency was devalued. When pressure on the currency was built, foreigners sold their local currency positions and domestic speculators were forced to buy dollars to cover their dollar shorts, causing the currency decrease. As a response to the Asian crises, Asian central banks tended to use capital controls to prevent currency speculation through the forward market. On the other hand, non deliverable forward markets grew due to the domestic restrictions.⁴² After the Asian crises in 1997, non-deliverable forwards (NDFs) became more popular instrument for currency risk management in Asian countries, such as India, Indonesia, Korea, Philippines, and Taiwan. NDFs are also used in South American countries including Argentina, Brazil, Chile, Colombia and Peru.⁴³ In the early 2000s, speculators used forwards as the main instrument to bet on an appreciation of the Chinese renminbi (RMB). Forward contracts also offer implicit access to the interest rates of the currency being bought, funded by the currency being sold. Investors use currency forwards to invest in high short term local interest rates in emerging countries, funded by lower United States dollar, yen or euro rates. Forwards also give speculators the ability to short the local currency. Also because NDF markets are offshore, it is difficult to control them. For example when Malaysia applied capital controls during the Asian crises, this made deposits abroad illegal and determined that those deposits abroad had to be returned by nationals. However, derivatives in

⁴² United Nations, "International Private Capital Flows", **World Economic and Social Survey** (2005), pp.90-92.

⁴³ Hung-Gay, Wai K. Leung, and Jiang Zhu, "Nondeliverable Forward Market for Chinese RMB: A First Look", **China Economic Review**, No.15 (March 2004), p.349.

developing countries continue to develop. There is a recovery of cross-border bank lending. Inflows into China have increased substantially with the effects of Chinese currency appreciation. Derivatives Business of Financial Institutions provided more liberal rules in March 2004 allowing foreign banks to expand their derivatives activities with Chinese companies. The new rules permit over the counter derivatives trades for any commercially reasonable purpose, not just for hedging purposes, as previously required.⁴⁴

There is a difference between onshore and offshore forward contracts. One of the main risks is local counterparty risk. During the Russian crisis, many foreign investors bought local treasury bills, and then hedged the currency risk with Russian local banks through currency forwards. During the crisis, local banks went bankrupt, and refused to pay their contracts. The non-deliverable forwards markets dominated by foreign banks traded outside the developing country such as into New York or London. Therefore, the risk of counterparty default is significantly lower than with onshore forwards. Onshore contracts expose countries to domestic settlement risk and the risk that the central bank will impose currency controls. NDF markets are not subject to those risks. However, offshore forwards let portfolio outflows causing liquidity crises. Therefore, capital interventions may be price, or quantity based, or both. During the 1990s, Chile established a minimum period (one year) for foreign capital and Colombia provided direct regulations on the inflows and composition of the portfolios of FPI. China, India, Taiwan and Vietnam are successful examples in preventing crises via quantity based restrictions throughout the 1990s. Other domestic regulations consist of limits on short term foreign borrowing of the banks, applications that restrict lending in foreign currencies to firms that do not have equivalent revenues in those currencies, or impose higher capital adequacy requirements, and applications that force banks to match their foreign currency liabilities and assets.⁴⁵

⁴⁴ United Nations, pp.91-93.

⁴⁵ United Nations, pp.92-99.

Monetary and Fiscal Policies:

Fourth, several countries began to apply appropriate monetary and fiscal policies as well as market oriented reforms including trade and capital market liberalization. While FPI to emerging countries was falling, those countries began to set political regimes that make easy the capital movements by decreasing the controls over the capital or lifting all of the controls. For example, Bolivia, Chile and Mexico implemented major disinflation programs in the late 1980s, while Argentina, Brazil, Ecuador and Peru have applied those programs during the early 1990s. An effective inflation stabilization program can decline macroeconomic risks and stimulate capital inflows.⁴⁶

Contagion Effect:

Fifth, a large shift in capital flows to one or two large countries in a region may generate externalities for the smaller neighboring countries called “contagion effect”. For example, cash inflows into Mexico in 1990 made investors more familiar and more willing to invest in other emerging markets such as Latin America.⁴⁷ As a negative effect of contagion, in the mid to late 1990s, a number of emerging markets experienced spectacular currency crises, first Mexico in 1994 called “Tequila Crisis”, then Southeast Asia in 1997 and Russia in 1998. “Contagion” word also refers to the abnormally high correlation between markets during a crises period.⁴⁸ Another issue is while there has been an overall decrease in net portfolio debt flows to emerging countries since Asian financial crisis; the issue differs between crises and non-crises countries. Since 1998, there were large net portfolio debt outflows from Asian countries. In 2000-2002 periods, countries in financial crises such as Argentina, Brazil and Turkey had experienced sharp decrease in net portfolio debt flows. On the other hand, flows to other countries had increased.⁴⁹

⁴⁶ Carmen Reinhart, Calvo Guillermo and Leonardo Leiderman, “Inflows of Capital to Developing Countries in the 1990s”, **Journal of Economic Perspectives**, Vol.10, No:2 (Spring 1996), p.138.

⁴⁷ Carmen Reinhart, Calvo Guillermo and Leonardo Leiderman, “Inflows of Capital to Developing Countries in the 1990s”, **Journal of Economic Perspectives**, Vol.10, No:2 (Spring 1996), pp.138-139.

⁴⁸ Geert Bekaert and Campbell R. Harvey, “Research in Emerging Markets Finance: Looking to the Future”, **Emerging Markets Review**, No.3 (2002), p.437.

⁴⁹ UNCTAD, “International Private Capital Flows”, **World Economic and Social Survey** (2005), p.88.

After 1994-1995 Mexico crises, capital movements towards emerging markets had burst in 1996-1997 period. Capital movements had gotten narrowed suddenly after East Asia Crises formed at the end of 1997 period and especially after Russian crises in 1998, and created problems in emerging markets. The volatility of the level of interest rates is greater, but none of these economies are subject to fluctuations in capital flows as those observed in Mexico.⁵⁰

Stock and Real Estate Price Change:

Sixth, the increase in portfolio flows to the Asian and Latin American countries was related with the sharp increases in stock and real estate prices. Share prices for many emerging markets were steeply higher in U.S. dollar terms at the end of 1993 than at the outset of the inflows episode. For example, Argentina marked 400 percent annual dollar return, while Chile and Mexico offered yields of about 100 percent during 1991.⁵¹

⁵⁰ Guillermo Ortiz, "How Should Monetary Policy Makers React to the New Challenges of Global Economic Integration: the Case of Mexico", **Federal Reserve Bank Symposium Paper**, <http://www.kc.frb.org/PUBLICAT/SYMPOS/2000/or.pdf>, (20.10.1982), p.6.

⁵¹ Carmen Reinhart, Calvo Guillermo and Leonardo Leiderman, "Inflows of Capital to Developing Countries in the 1990s", **Journal of Economic Perspectives**, Vol.10, No:2, (Spring 1996), p.136.

Table 3.1
The Five Largest Log Returns (Bolded Dates Show Crises Periods)

	Largest	2nd Largest	3th Largest	4th Largest	5th Largest
Argentina	July-89 / -104.8%	Jan-90 / -77.6%	Apr-81 / -59.8%	Apr-84 / -52.7	Jan-82 / -46.2%
Brazil	Mar-90 / -84.2%	Jun-89 / -56.3%	Aug-98 / -46.7%	Jun-92 / -36.7%	Jan-99 / -34.5%
Chile	Jan-83 / -32.9%	Aug-98 / -30.9%	Sep-81 / -21.2%	Oct-87 / -21.2%	Sep-84 / -18.6%
Colombia	Aug-98 / 22.2%	Jan-99 / -20.5%	Feb-92 / -19.2%	Jun-99 / -19.0%	May-00 / -15.2%
Greece	Jan-88 / -36.8%	Aug-98 / -27.6%	Jan-83 / -20.5%	Oct-92 / -18.9%	Oct-85 / -18.5%
India	May-92 / -27.9%	Mar-93 / -19.6%	Mar-01 / -19.0%	Nov-86 / -17.6%	Sep-01 / -16.6%
Indonesia	Aug-97 / -51.2%	May-98 / -49.0%	Dec-97 / -44.8%	Jan-98 / -43.0%	Sep-98 / -27.6%
Korea	Dec-97 / -40.9%	Oct-97 / -35.3%	Nov-97 / -32.7%	May-98 / -26.4%	Oct-00 / -23.3%
Malaysia	Aug-97 / -37.4%	Oct-87 / -36.5%	Aug-98 / -30.9%	Nov-97 / -27.2%	Jun-98 / -24.4%
Mexico	Nov-87 / -89.9%	Dec-82 / -62.8%	Oct-87 / -55.3%	Dec-94 / -43.1%	Aug-98 / -41.0%
Pakistan	May-98 / -43.3%	Oct-98 / -30.8%	Jun-98 / -29.1%	May-00 / -24.3%	Jul-96 / -17.5%
Philippines	Sep-90 / 34.7%	Aug-98 / -31.9%	Aug-97 / -28.2%	Sep-87 / -27.5%	Oct-00 / -22.1%
Portugal	Nov-87 / -34.7%	Dec-87 / -27.8%	Oct-87 / -23.2%	Feb-88 / -16.0%	Oct-92 / -15.3%
Taiwan	Oct-87 / -43.9%	Aug-90 / -41.8%	Jun-90 / -30.7%	Oct-88 / -28.8%	Dec-88 / -28.7%
Thailand	Oct-87 / -41.3%	Aug-97 / -39.3%	Oct-97 / -38.1%	May-98 / -33.1%	Dec-97 / -29.1%
Turkey	Aug-98 / -52.2%	Feb-01 / -52.0%	Nov-00 / -43.2%	Sep-01 / -40.6%	Nov-90 / -37.8%
Venezuela	Dec-85 / -68.9%	Nov-95 / -62.0%	Aug-98 / -50.5%	Mar-92 / -30.3%	Jun-94 / -29.2%
Composite	Aug-98 / -29.3%	Oct-87 / -28.9%	Aug-90 / -19.0%	Sep-01 / -16.8%	Oct-97 / -16.5%

Source: G. Bekaert & C. R. Harvey, Emerging market finance, p.33

Table 3.1 exhibits the five most severe negative returns in 17 emerging markets. In 9 of 17 markets, August 1998 called also Russian default was among the one of the five poorest performing months. Indonesia, Korea, Malaysia and Thailand have four representatives in the five worst returns during the Asia Crises of July 1997 to May 1998.⁵² Korea and Thailand had spent a considerable time in a bear phase before

⁵² Geert Bekaert & Campbell R. Harvey, "Emerging Markets Finance", *Journal of Empirical Finance*, No.10 (2003), pp.33-35.

the Asian crisis exploded.⁵³ Movements of foreign capital with low domestic interest rate resulted in over lending and speculation in non productive sectors like real estate. Large current account deficits and decreasing export growth had pressure on pegged currency. Therefore, this caused to speculative attacks on the Thai baht beginning in 1995. The Bank of Thailand (BOT) aimed to make pressure for selling on the Thai baht and abandoned basket peg of currency in July 1997 causing the Asian financial crisis. As a large participant in a small market, foreign investors' trading in Thailand has an influence on market volatility and liquidity. Foreign investors are net buyers and liquidity providers during the Thai crisis. Increased volatility and related sharp decline in liquidity during the crisis are attributable to domestic selling. Domestic investors feel themselves more in panic selling than foreign investors. During the crisis period, foreign equity flows into Thailand did not dry up immediately. Net foreign equity flows increased to 17 percent of the total market capitalization in 1997. Net inflows in Korea were realized as the amount of 6% of its market capitalization and net outflows from Indonesia as the amount of 15% of its market capitalization in the same year. Thailand, Korea and Indonesia were among the recipients of high volume of foreign portfolio investments in Asia. In 1998, Thailand still saw a net inflow of foreign equity capital, albeit in a decreased amount of less than 2% of its market capitalization. The markets in Korea and Thailand took almost an additional year to start the recovery (Table 3.1).⁵⁴

Those financial crises had caused to a sharp decrease in NFPI in emerging countries for the long term. NFPIs were 291 billion \$ in 1999, declined 28 billion \$ from the year before, 53 billion \$ down when we compared with 1997 period. Also, private debt and equity flows from international capital markets had declined in both 1998 and 1999. Net debt flows decreased from 103 billion \$ in 1997 to 19 billion \$ in 1999. Therefore, international banks retrenched lending (Table 3.2). The reason of decline in private flows to emerging countries was driven from by a collapse in gross flows from international capital markets including bond, bank lending and portfolio equity issues in 1999. Unlike bank and bond flows, the volume of gross international

⁵³ Sebastian Edwards, Javier Gomez Biscarri and Fernando Perez de Gracia, "Stock Market Cycles, Financial Liberalization and Volatility", **National Bureau of Economic Research**, Working Paper, No: W9817 (May 2003), p.13.

⁵⁴ Pantisa Pavabutr and Hong Yan, "The Impact of Foreign Portfolio Flows on Emerging Market Volatility: Evidence from Thailand", **Australian Journal of Management**, Vol.32, No.2 (December 2007), pp. 347-349.

equity flows from emerging markets recovered strongly in 1999, to more than double the 1998 level, but remained at only 70 percent of the 1997 level. This surge in equity flows reflected the sharp recovery of equity markets in emerging market economies in 1999 from the low levels of late 1998 (Table 3.2).⁵⁵

⁵⁵ World Bank, “Private Capital Flows to Developing Countries”, **Global Development Finance**, <http://siteresources.worldbank.org/INTGDF2000/Resources/CH2--34-55.pdf> (Date: 08.04.2009), p.36.

Table 3.2
Net long term-flows to emerging countries: 1990-1999

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	98.5	124.0	153.7	219.2	220.4	257.2	313.1	343.7	318.3	290.7
Official Flows	55.9	62.3	54.0	53.4	45.9	53.9	31.0	39.9	50.6	52.0
Private Flows	42.6	61.6	99.7	165.8	174.5	203.3	282.1	303.9	267.7	238.7
International Capital Markets	18.5	26.4	52.2	99.8	85.7	98.3	151.3	133.6	96.8	46.7
Debt Flows	15.7	18.8	38.1	48.8	50.5	62.2	102.1	103.4	81.2	19.1
Bank Lending	3.2	5.0	16.4	3.5	8.8	30.4	37.5	51.6	44.6	-11.4
Bond Financing	1.2	10.9	11.1	36.6	38.2	30.8	62.4	48.9	39.7	25.0
Other	11.3	2.8	10.7	8.7	3.5	1.0	2.2	3.0	-3.1	5.5
Equity Flows	2.8	7.6	14.1	51.0	35.2	36.1	49.2	30.2	15.6	27.6

Source: World Bank Report, 1999

Table 3.3: Emerging Economies Net Capital Flows (1997-2009) (IMF World Economic Outlook 2009, p.264)

EMERGING ECONOMIES NET CAPITAL FLOWS (1997-2009)

Billions of US dollars	1997-99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Emerging and Developing Economies											
Net Private capital flows ²	116,8	74,8	79,4	91,3	169,9	243,4	253,8	233,8	607,1	332,7	443,4
Net Private direct investment	162,4	171,1	186,3	157,3	166,2	188,7	259,8	250,2	309,7	307	322,5
Net Foreign Portfolio Investment	51,8	15,9	-78,8	-92	-13,3	16,3	-19,4	-103,9	48,6	-72,2	31,1
Net Other Private Capital Flows	-97,4	-112,2	-28,1	26	17	38,4	13,4	87,5	248,8	97,9	89,8
Net Official Flows ³	20,7	-33,9	0,9	-0,6	-50	-70,6	-110	-160,1	-149	-162,4	-149,8
Change in reserves ⁴	-72,8	-135,7	-124,1	-194,8	-363,3	-509,3	-595	-752,8	-1236,3	-1004	-1071,4
Africa											
Net Private capital flows ²	8,6	1,7	6,5	7	8,4	17,6	32,4	41,5	49,3	59,5	66,1
Net Private direct investment	7,3	7,6	23,2	14,4	17,8	16,6	23,6	21,5	32	38,3	37,1
Net Foreign Portfolio Investment	6,8	-2,1	-7,9	-1,6	-0,4	5,8	3,7	18,5	11,5	9,4	10,4
Net Other Private Capital Flows	-5,5	-3,8	-8,8	-5,8	-9	-4,8	5,1	1,5	5,8	11,8	18,6
Net Official Flows ³	3,9	1,5	1,4	4,3	1,4	-1,2	-5,3	-18,2	-1,6	4,4	6,1
Change in reserves ⁴	-2,5	-13,4	-10,6	-5,7	-11,5	-31,8	-43,3	-54,2	-61,4	-87,6	-87
Central and Eastern Europe											
Net Private capital flows ²	32,4	38,6	11,1	53,8	53,3	74,3	118,1	120,4	170,5	162,5	158,2
Net Private direct investment	18,1	23,4	24	24,5	17,1	36	51,5	64,7	73,1	74,8	75,8
Net Foreign Portfolio Investment	4,3	3,8	0,9	2,1	8	28,3	21,5	9,9	-6,8	12,1	12,3
Net Other Private Capital Flows	10	11,4	-13,8	27,2	28,2	10	45,1	45,8	104,2	75,6	70,1
Net Official Flows ³	-1,5	1,6	6	-7,5	-4,8	-6	-8,1	-4,6	-2,6	-0,9	-2,5
Change in reserves ⁴	-10,1	-6,2	-2,7	-18,1	-12,8	-14,7	-45,9	-22,7	-42,9	-25,1	-21,7
Commonwealth of Independent States											
Net Private capital flows ²	-7	-27,4	6,9	15,6	18,4	6,7	32,5	57,9	115,1	59,1	89,1
Net Private direct investment	5,4	2,3	4,9	5,2	5,4	13	11,3	23,5	16,7	29,5	35,4
Net Foreign Portfolio Investment	1	-10	-1,2	0,4	-0,5	8,1	-4,7	12,5	7,7	12,4	14,9
Net Other Private Capital Flows	-13,4	-19,7	3,2	10	13,5	-14,4	25,9	21,9	90,7	17,2	38,8
Net Official Flows ³	-0,5	-5,8	-5	-10,5	-9,3	-7,4	-20,3	-29,7	-4,2	-4,6	-3,7
Change in reserves ⁴	1,6	-20,4	-14,4	-15,1	-32,7	-55	-77,2	-128,8	-170,9	-154,5	-143

EMERGING ECONOMIES NET CAPITAL FLOWS (1997-2009)

Billions of US dollars	1997-99	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Emerging Asia⁶											
Net Private capital flows ²	-0,9	5,3	23	23,6	64,5	146,6	90,8	47,9	193,5	40,7	116,2
Net Private direct investment	62,1	60,8	53,2	53,4	70,3	64,1	103,9	97,4	90,5	93,4	94,3
Net Foreign Portfolio Investment	23,4	19,7	-50,1	-60	7,5	13,4	-9,3	-110,7	18,4	-129,3	-15,5
Net Other Private Capital Flows	-86,4	-75,2	19,9	30,2	-13,3	69,1	-3,8	61,2	84,6	76,6	37,4
Net Official Flows ³	11,6	-1,9	-13,1	2,8	-18	-13,4	-21	-22,6	-38	-18,7	-25,9
Change in reserves ⁴	-57,5	-57,7	-87	-154,4	-236	-339,2	-288,3	-372,4	-669,3	-470,2	-580,8
Middle East⁷											
Net Private capital flows ²	9,3	-5,3	-7,4	-22,3	2,3	-17	-56,7	-43,4	-21	-62,1	-63
Net Private direct investment	7,2	6	12,3	9,2	17,5	10,1	18,2	15,3	20,4	13,2	19,7
Net Foreign Portfolio Investment	-5	3	-12,6	-17,6	-17,3	-20,7	-36	-20,1	-14	-16,7	-31,8
Net Other Private Capital Flows	7,1	-14,3	-7,1	-13,9	2,1	-6,4	-38,9	-38,6	-27,4	-58,6	-50,9
Net Official Flows ³	1,3	-23,5	-13,9	-8,1	-24,2	-33,7	-24,4	-66,4	-103,6	-145,5	-124,4
Change in reserves ⁴	-3,4	-31,3	-11,1	-2,9	-36,7	-46,2	-107,1	-125,2	-159,2	-192,3	-183,2
Western Hemisphere											
Net Private capital flows ²	74,4	61,9	39,3	13,6	23	15,2	36,7	9,5	99,7	73	76,8
Net Private direct investment	62,3	71	68,7	50,6	38,1	48,9	51,3	27,8	77	57,8	60,2
Net Foreign Portfolio Investment	21,3	1,5	-7,9	-15,3	-10,6	-18,6	5,4	-14	31,8	39,9	40,8
Net Other Private Capital Flows	-9,2	-10,6	-21,5	-21,7	-4,5	-15,1	-20	-4,3	-9,1	-24,7	-24,2
Net Official Flows ³	5,9	-5,8	25,5	18,4	4,9	-8,9	-30,9	-18,6	1	2,9	0,6
Change in reserves ⁴	-0,9	-6,7	1,7	1,4	-33,6	-22,4	-33,2	-49,5	-132,6	-74,3	-55,7

1 Net capital flows comprise net direct investment, net portfolio investment, and other long- and short-term net investment flows, including official and private borrowing. In this table, Hong Kong SAR, Israel, Korea, Singapore, and Taiwan Province of China are included.

2 Because of data limitations, flows listed under private capital flows, net, may include some official flows.

3 Exclude grants and include overseas investments of official investment agencies.

4 A minus sign indicates an increase.

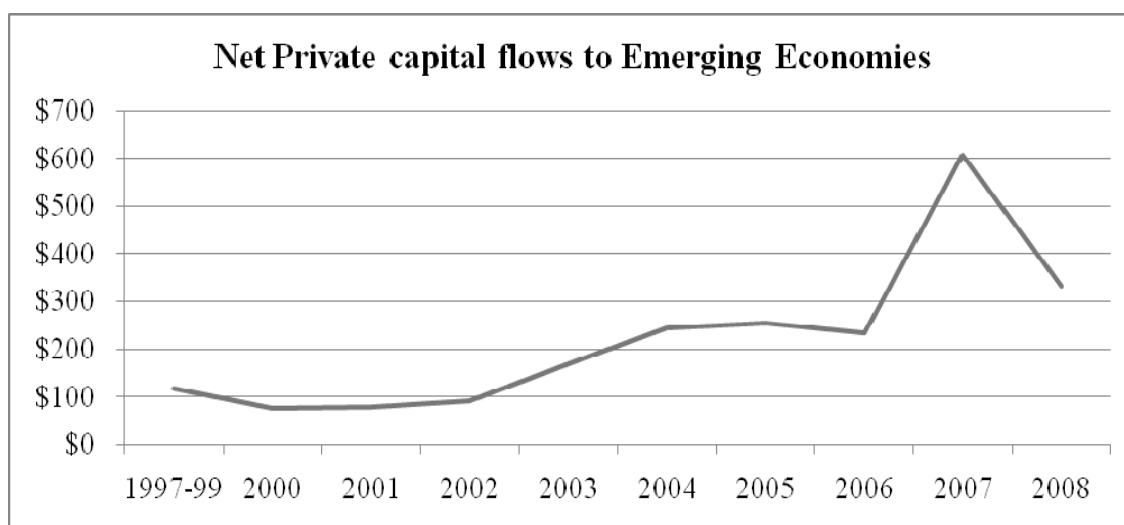
5 The sum of the current account balance, net private capital flows, net official flows, and the change in reserves equals, with the opposite sign, the sum of the capital account and errors and omissions.

6 Consists of developing Asia and the newly industrialized Asian economies.

7 Includes Israel.

In summary, two waves of large capital inflows through the emerging markets became during 1990 - 2008 periods. The first wave occurred in 1990s and ended with Asian crises in 1997 - 1998 periods. The second wave was building in 2003, rose in 2007 with inflows exceeding 2006. The second wave has started to decrease in 2008 with the effect of global financial crises.⁵⁶

Graph 3.8
Net Private Capital Flows in Emerging Markets (1997-2008)



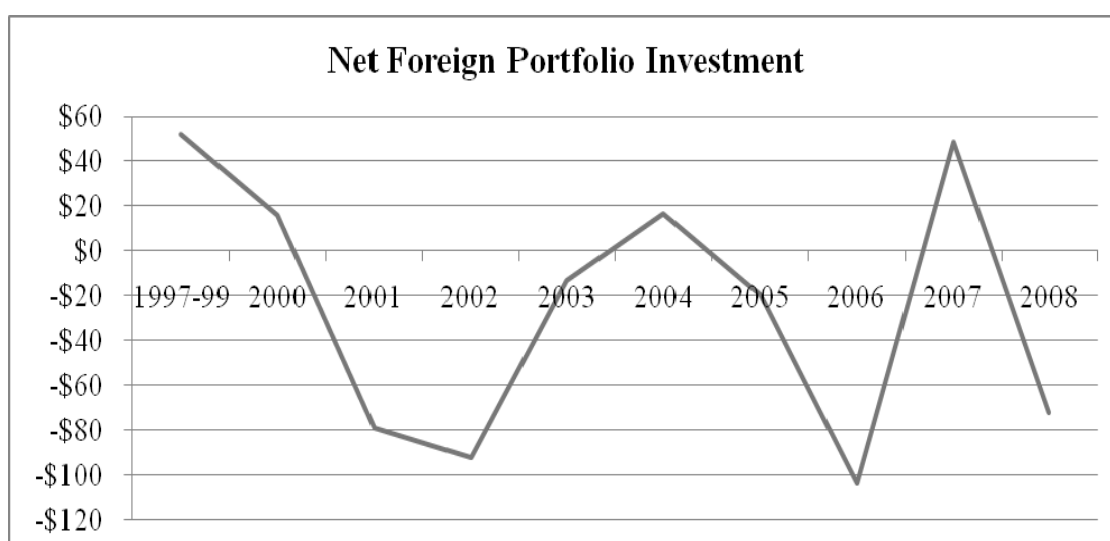
Source: Numeric data was taken from IMF Statistics, 2009

Private capital inflows to emerging market economies were crucial in the first half of 2008 after increasing in 2007, but have declined steeply since the third quarter of 2008 in turn decrease in bank lending, FPI and FDI. FPI had declined with the wave of sell-offs in emerging equity markets. By the way, portfolio outflows from emerging countries to developed countries continued to be larger than portfolio inflows. Emerging countries continue to be net lenders to the rest of the world, financing external deficits of United States and other developed countries. Sovereign wealth funds (SWFs) of emerging countries increased %18 to reach \$4 trillion at the end of 2008. Sovereign wealth funds refer to state-owned investment fund composed of financial assets such as stock, bonds, property, precious metals, or other financial instruments. The losses SWFs incurred on some investments during the past year were more than offset by inflows of

⁵⁶ Roberto Cardarelli, Selim Elekdag and M.Ayhan Kose, "Capital Inflows: Macroeconomic Implications and Policy Responses", **IMF Working Paper** (March 2009), p.10.

new funds. There was an additional \$5.5 trillion held in other sovereign investment vehicles, such as pension reserve funds, development funds and state-owned corporations' funds and also \$6.1 trillion in other official foreign exchange reserves. During the early stage of the global financial crisis, many SWFs injected sizeable amounts of money into the financial institutions of developed countries, but became more prudent after registering large losses (Graph 3.8, 3.9).⁵⁷ The common thread appears to be the SWF's desire to buy and hold long term investments to provide an income substitute. In the collapse of Bretton Woods in 1971, central bankers, pension providers and national investing entities struggled to find sufficiently large and liquid asset classes capable of delivering long term returns like in 2008 credit crisis.⁵⁸

Graph 3.9
Net Foreign Portfolio Investment in Emerging Markets (1997-2008)



Source: Numeric data was taken from IMF Statistics, 2009

Developed economic conditions in emerging markets, as well as the higher global growth and low interest rates, was caused portfolio capital flows recovery into emerging countries in 2003 and 2004. However, increased volatility in yield spreads on emerging market bonds in 2004 and 2005, in response to uncertainty about interest rate rise in emerging countries (particularly the United States of America), underscored the

⁵⁷ United Nations, **World Economic Situation and Prospects 2009: Global Outlook**, December 2008, p.13.

⁵⁸ <http://www.dailyreckoning.co.uk/economic-forecasts/sovereign-wealth-funds-the-new-wealth-of-nations.html>, (05 May 2009)

vulnerability of financial flows to acceleration in increases in interest rates.⁵⁹ In the mid-2007s, because of the mortgage tragedy occurred in the United States, global financial crises has evolved towards emerging countries. In 2008, financial crises escalated further with a steep decline on stock markets in emerging markets in which many countries had experienced worst sell off in equity markets (Graph 3.9).

The 2008 credit crisis quickly spread to Europe from United States. The contagion effects of the crisis also spread rapidly to emerging economies. Hungary was among the first of the emerging market countries to suffer. Ukraine also ran into acute liquidity problems, as its access to international capital markets was curtailed steeply, its currency was sold off and the credit-rating agencies downgraded the country's debt. Ukraine also had to recur to the IMF for a \$16.4 billion loan. Belarus and Serbia also filed requests for substantial emergency support from the IMF. Pakistan also entered into acute balance-of-payments' problems and demanded IMF support, as its foreign reserve level dropped to less than a few weeks worth of imports.⁶⁰

Generally FPI in emerging markets is summarized as below:

3.1.1. Asia

Indonesia, Korea, Malaysia and Thailand are the Asian countries. For Asia, during the first half of the 1970s, the volume of capital inflows to Asia was small. After the mid-1970s, capital inflows begun to rise due to the openness measure since the late 1970s, while the restriction measure has changed very little.⁶¹ While a substantial proportion of inflows take the form of FDI, there was a very large increase in FPI and bank flows in the early 1990s, which ultimately proved unsustainable.⁶² Capital flows into Asia region before 1997 Asian crises can be categorized as "other investments" including short and long term credits (IMF credit) and currency transactions rather than portfolio investment. As seen in table 3.4, other investments are about 74 percent of the private capital flows in Thailand. Also, it was the largest component of capital flows in

⁵⁹ United Nations, **World Economic Social Survey: International Private Capital Flows**, 2005, p.89.

⁶⁰ United Nations, **World Economic Situation and Prospects 2009: Global Outlook**, December 2008, p.11.

⁶¹ Dipack R. Basu and Victoria Miroshnik, **Japanese Foreign Investments, 1970-1998: Perspectives and Analyses**, London, England: M.E Sharpe Publish, 2000, p.18.

⁶² International Monetary Fund, **International Financial Integration and Developing Countries, World Economic Outlook: World Economic and Financial Survey**, October 2001, p.150.

Indonesia and Philippines. The large scale of capital inflows had no visible effect on domestic interest rate. Therefore, it led to interest rate differential, which in turn accelerated capital inflows.⁶³ The external reason of increasing international capital flows is to decrease of US short term real interest rate in the early 1990s, and they were at their lowest level in 1992 since 1960. Lower interest rate improved economic growth in Asia by attracting foreign investors. Developed creditworthiness and reduced default risk caused to raise secondary market prices of bank claims on most of the indebted countries through 1994. The tightening of monetary policy in the United States and the resulting increase in real interest rates in early 1994 made investment in Asia relatively less attractive. Higher interest rates quickly and markedly influenced Asia debt prices. Changes in relative yield will immediately affect the changes in cross-border capital flows with highly integrated and technologically sophisticated financial markets. Also, a growing proportion of investment in Asia is “portfolio equity”, referring to financial investments in companies that can easily be altered or withdrawn with little more than the flick of a computer key.⁶⁴

Table 3.4
Capital Flows as a Percentage of GDP (Negative signs show increase in reserves)

	Indonesia	Malaysia	Philippines	Thailand
FDI Flows	1.7	7.2	1.8	1.6
Portfolio Flows	0.5	0.0	0.2	1.4
Other	3.0	2.9	2.1	8.5
Total	5.1	10.2	4.1	11.5
Δ Reserves*	-1.7	-5.1	-1.8	-4.3

Source: Tony Cavali and Ramkishen S. Rajan, August 2005

FPI have both benefits and costs. As benefits, portfolio inflows encourage investment and economic growth in the recipient countries, increase consumption, and in turn raise welfare across the countries. At the same time, as costs, they may lead to a rapid monetary expansion, an excessive increase in domestic demand and inflationary pressures, an appreciation of the real exchange rate, and widening current account

⁶³ Tony Cavali and Ramkishen S. Rajan, “The Capital Inflows Problem in Selected Asian Economies in the 1990s Revisited”, *Asian Economic Journal*, Volume 20, Issue 4 (December 2006), p.450.

⁶⁴ Carmen Reinhart, Calvo Guillermo and Leonardo Leiderman, “Inflows of Capital to Developing Countries in the 1990s”, *Journal of Economic Perspectives*, Vol.10, No.2 (Spring 1996), pp.127-128.

deficits. They may even raise the vulnerability of recipients to a sudden reversal in FPI.⁶⁵

Net private capital flows have moved backward from their steep reversal during 1997-1998 crises. Gross capital inflows to Asia had turned back to high levels of the pre-crisis period. However, private capital outflows have accelerated since the early 2000. Therefore, large capital account surpluses showed bigger source of foreign currency inflows and accumulated foreign reserves (Table 3.3).⁶⁶

Crises countries (Indonesia, Korea, Singapore and China) were relatively unaffected by the effect of Mexican crises occurred in December 1994 - March 1995 period. Initially other Asian emerging markets were not affected with the Mexican crises. However, during January 1995 exchange rates in most of those countries including Hong Kong, India, Malaysia, and the Philippines came under increased speculative pressure. Therefore, large losses were realized in equity market. In many cases, central banks responded to those events by driving real interest rates higher to defend the currency.⁶⁷

Syndicated bank lending to emerging markets had been dominated by East Asian borrowers until 1997. Almost 65 percent decline in bank lending in 1998 hugely reflected creditors' decision to cut back on new lending. The gross flows to the East Asian crises countries (Indonesia, Korea, Malaysia and Thailand) rose only to 29 billion \$ in 1999, compared with 71 billion \$ in 1997. The decline in gross flows to those countries between 1997 and 1999 is about one quarter of the total fall in flows to developing countries (Graph 3.10).⁶⁸

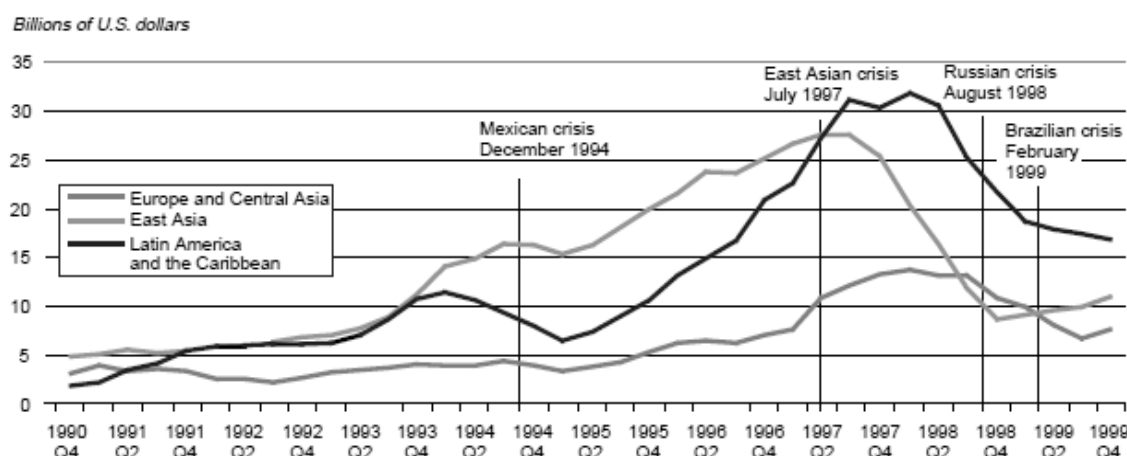
⁶⁵ Shinji Takagi and Taro Esaka, "Sterilization and the Capital Inflow Problem in East Asia, 1987-97", **Economic Research Institute**, Discussion Paper No. 86 (August 1999), p.2.

⁶⁶ International Monetary Fund, "Two Waves of Large Capital Inflows to Emerging Markets", **World Economic Outlook Survey**, 2007, p.4.

⁶⁷ Sara Calvo and Carmen Reinhart, Capital Flows to Latin America: Is There Evidence of Contagion Effects?, **World Bank Policy Research**, No.1619 (June 1996), p.2.

⁶⁸ World Bank, "Private Capital Flows to Developing Countries, Global Development Finance", (<http://siteresources.worldbank.org/INTGDF2000/Resources/CH2--34-55.pdf>) (08 April 2009), 1999, p.38.

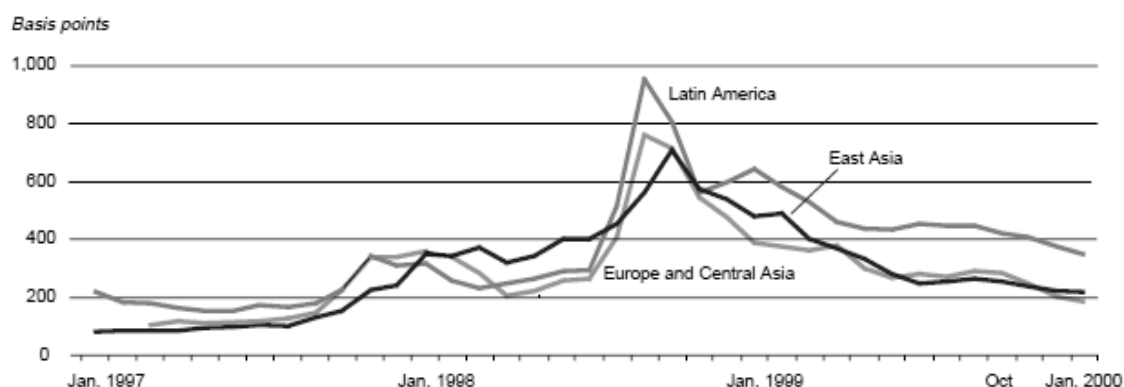
Graph 3.10
Quarterly Gross Capital Flows by Region, 1990-1999



Source: World Bank, 1999

The differences in access of major emerging country borrowers to the capital markets can be analyzed from secondary market spreads. Spreads dropped steeply in all major East Asian borrowers through January 2000, so reduced demand had driven the low level of capital flows to the region (Graph 3.11).⁶⁹

Graph 3.11
Regional Secondary Market Spreads on International Bond Issues



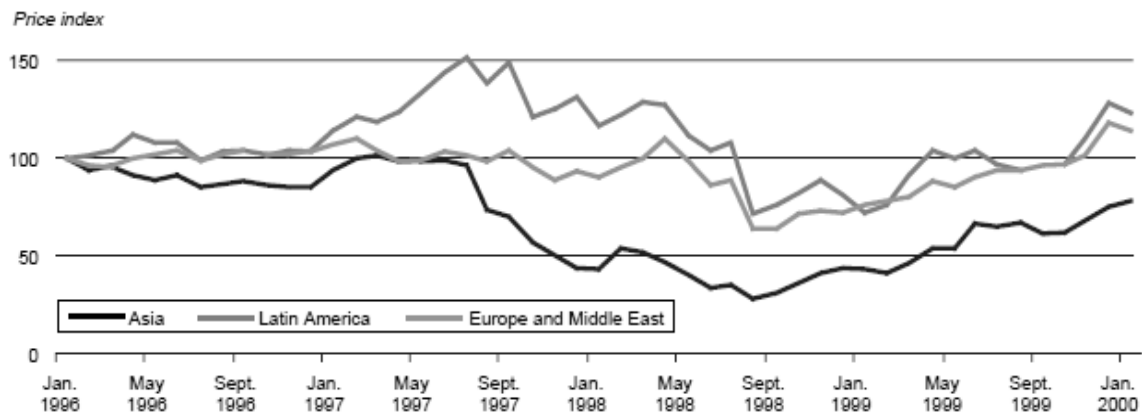
Source: World Bank, 2000

Stock market prices in East Asia rose by 71 percent on average from December 1998 to December 1999 (Graph 3.12). Equity flows were primarily supported by large privatization transactions in East Asia, which accounted for 65 percent of total

⁶⁹ World Bank, "Private Capital Flows to Developing Countries, Global Development Finance", <http://siteresources.worldbank.org/INTGDF2000/Resources/CH2--34-55.pdf>, (08 April 2009), p.39.

placements in 1999. Apart from privatization, investments for new capitalization showed little increase over 1998.

Graph 3.12
Performance of Emerging Market Stock Markets, by Region

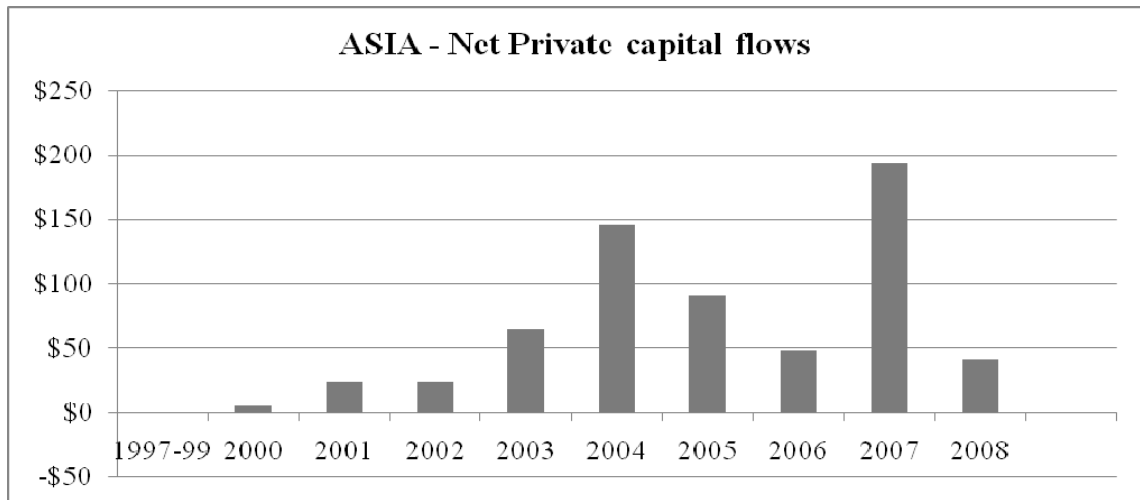


Source: World Bank, 2000

According to Chuhan, domestic factors (policy applications) are three to four times more important than external factors to attract FPI to East Asian countries. Chuhan used explanatory variables for domestic factors such as stock price earnings ratios and secondary market price of a country's external debt to analyze the impacts on NFPI.⁷⁰

⁷⁰ Leonardo Hernandez and Heinz Rudolph, "Sustainability of Private Capital Flows to Developing Countries: Is a Generalized Reversal Likely?", **World Bank Policy Research**, Working Paper 1518 (October 1995), p.14.

Graph 3.13
Net Private Capital Flows of Asia (1997-2008)

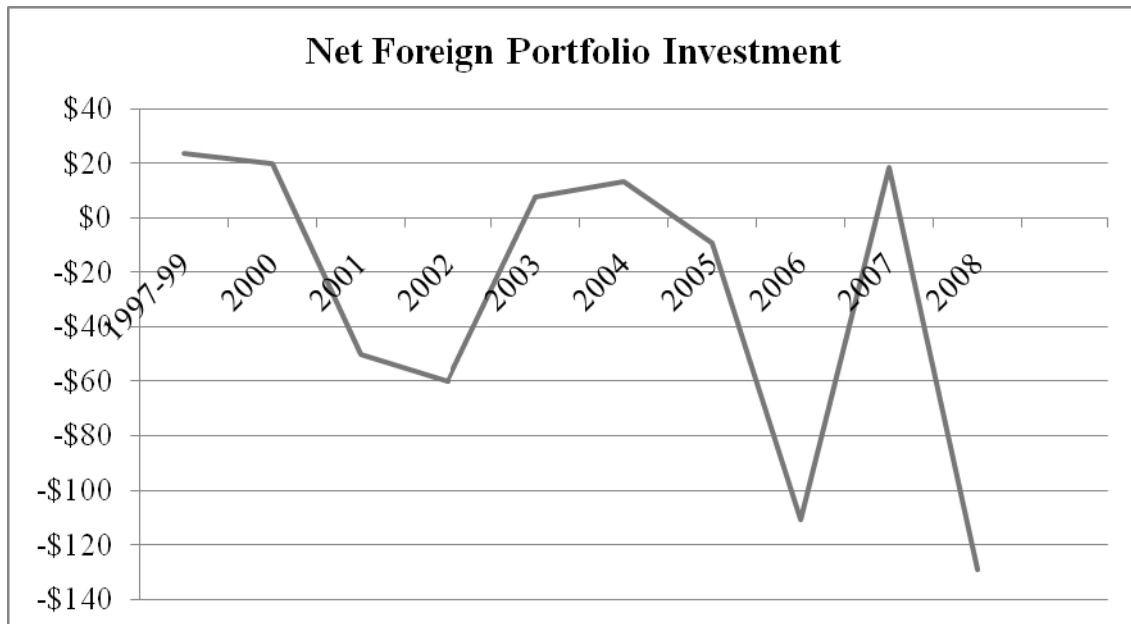


Source: Numeric data was taken from IMF World Economic Outlook 2008

Sterilized intervention increases the volume of total capital flows, through short term capital. FPI and FDI do not appear responsive against the intensity of sterilization after 1997 Asian crisis through 1997-2003 periods (please refer to table 3.3 for detail \$ US billion amounts). By widening and preserving domestic-foreign real interest rate differentials, sterilized intervention significantly explains the composition of capital flows, raising the portion of short term and foreign portfolio investments based on Calvo research. This issue also was taken as a criticism against “soft peg” as the capacity for sterilized intervention is limited or non-existent in a currency board arrangement.⁷¹

⁷¹ Guillermo Calvo and Carmen M. Reinhart, “When Capital Inflows Come to a Sudden Stop: Consequences and Policy Options”, <http://www.puaf.umd.edu/papers/reinhart.htm>, (05 June 1999), p.18.

Graph 3.14
Net Foreign Portfolio Investment of Asia (1997-2008)



Source: Numeric data was taken from IMF World Economic Outlook 2008

Prices of financial companies' stocks were under pressure before September 2008, because of the mortgage problem occurred in United States. Asian countries experienced the worst sell off recorded in a single week of October 2008.⁷²

Financial market crisis constrained international financial flows to emerging countries which are considered vulnerable. In this sense, in 2008 NFPI in Asia reversed because of the global financial crisis.⁷³

3.1.2. Latin America

Argentina, Chile, Mexico, Brazil are Latin America countries. Latin America region, with Argentina, Chile, and Mexico having liberalized, was relatively open in the 1970s. The openness of the region led to large bank based inflows of oil surpluses in the mid-to late 1970s. Latin America has had serious balance of payment problem since 1980, when debt crises had begun and large debtor countries were unable to perform

⁷² United Nations, **World Economic Situation and Prospects 2009: Global Outlook**, December 2008, p.10.

⁷³ International Monetary Fund, **World Economic Outlook, World Economic and Financial Survey**, April 2008, p.34.

their obligations leading to the crises in the Western banking system. The oil exporting countries gained since 1973 and got large surplus. Many countries imposed controls in response to outflows during the 1980s debt crisis, due to the Mexican crisis in 1982. By the way, those capital controls were relatively ineffective, and capital flight continued until the long term institutional reforms allowed the region to reenter international capital markets at the end of the 1980s. After 1980 period, Latin American liberalization has continued through the late 1980s and early 1990s. When the price of crude petroleum had fallen down since 1982, their fortune had changed.⁷⁴

In the 1990s, Latin America and also other emerging economies has three main frameworks of FPI including expansion, diversification and leading to severe financial crises. Net private capital flows including FDI, FPI and bank lending to Latin America increased 4.2 times from 1980 to 1990s (12.7 billion US\$ to 54.4 billion US\$) within the expansion feature of capital flows. The second feature of capital flows in 1990s was diversification type. In 1980-1989, 63 percent of net private capital flows is foreign direct investment, only 4.4 percent is foreign portfolio investment. In 1990-1999 period foreign portfolio investment portion increased to 48.1 percent of net private capital flows to Latin America. Third feature of the capital flows in 1990s was related with severe currency and banking crises in emerging countries.⁷⁵

Table 3.5
Composition of Net Private Capital Flows in Latin America and Caribbean
(Percentage of Net Private Capital Flows)

	1980-1989	1990-1999
Foreign Direct Investment	63.2	56.1
Portfolio Investment	4.4	48.1
Other Investment	32.4	-4.2

Source: Martine Guerguil, 2003

There are external, internal and intermediate reasons influencing the cash flows. External factors were a decrease in expected rates of return that were available in

⁷⁴ International Monetary Fund, **World Economic Outlook, World Economic and Financial Survey**, October 2001, pp.150-152.

⁷⁵ Albert Berry and others, **Critical Issues in International Financial Reform**, United States: Transaction Publishers, 2003, pp.75-81.

the major developed countries during the recessionary period 1990-1993, particularly the decrease in US real interest rate. Lower interest rates in the developed countries attracted investors to the high investment returns and developed economic prospects of economies in Latin America, like occurred in Asia. The tightening of monetary policy in the United States and the resulting increase in real interest rates in early 1994 made investment in Latin America relatively less attractive. Higher interest rates quickly and markedly influenced Latin America debt prices.⁷⁶

US interest rates are a very major influence in the developing countries effecting portfolio capital flows. Changes in US real interest rates affect local real interest rate. Low world real interest rates were a crucial factor in the large capital inflows of 1990-1993 periods. Markets are vulnerable to raise of US interest rate. Therefore, there is a direct relationship between interest rate and cash flow. Low world real interest rates influenced the attractiveness of investments in Latin America, by increasing the creditworthiness of many emerging markets.⁷⁷ Therefore, foreign real interest rates appear to have a significant influence on the allocation of the flows, as increasing foreign real interest rates would tend to distort the distribution of flows from portfolio and short term flows towards FDI flows. In this sense, the flow of capital to Latin America is very volatile.⁷⁸ Net foreign portfolio flows to Latin America dropped to nearly zero in 1983 from 6 percent of GDP in 1981 and stayed similar level until 1990. In 1991, portfolio flows raised almost 4 percent of GDP and 6 percent of GDP in 1993 and 1994 (graph 3.15). Based on the analysis, net foreign portfolio flows into Latin America is correlated with the world real interest rate.⁷⁹

Internal factors were domestic economic reforms, consisting of deregulation, privatization and monetary stabilization programs, as well as political evolution toward

⁷⁶ Carmen Reinhart, Calvo Guillermo and Leonardo Leiderman, "Inflows of Capital to Developing Countries in the 1990s", **Journal of Economic Perspectives**, Vol.10, No:2 (Spring 1996), p.127.

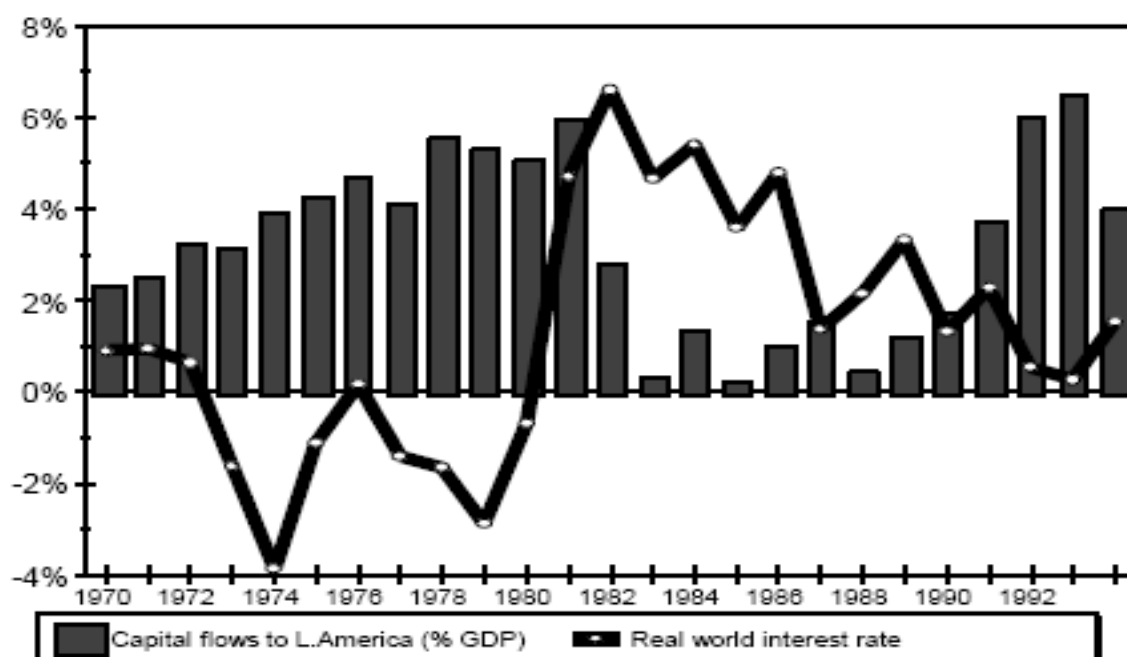
⁷⁷ Jeffrey A. Frankel and Chudozie Okongwu, "Liberalized Portfolio Capital Inflows in Emerging Markets: Sterilization, Expectations, and the Incompleteness of Interest Rate Convergence", **International Journal of Finance and Economics**, Vol.1, No.1 (January 1996), p.2.

⁷⁸ Peter Montiel and Carmen M. Reinhart, "Do Capital Controls and Macroeconomic Policies Influence the Volume and Composition of Capital Flows? Evidence from the 1990s", **Journal of International Money and Finance**, No.18 (1999) p.632.

⁷⁹ Michael Gavin, Ricardo Hausmann and Leonardo Leiderman, "The Macroeconomics of Capital Flows to Latin America: Experience and Policy Issues", **Inter-American Development Bank**, Working Paper 310 (October 1997), p.3.

democracy. Intermediate factors triggering the flow from saver country to borrower country include the removal of controls on capital inflow in many countries and institutional innovations in the investor community making diversification into emerging markets more convenient.⁸⁰

Graph 3.15
Capital Flows to Latin America (1970-1992)



Source: Inter-American Development Bank, 1997

In Latin America, Brady-type debt reduction operations and domestic policy reforms are made, country creditworthiness had developed, so international interest rates increased. By the time, some researchers interpret wave of capital inflows as being mostly “pulled” by attractive domestic circumstances, which open new investment opportunities in the domestic country and improve country creditworthiness. However, if successful domestic policies are provided, capital inflows would be sustained. Some researchers also interpret those inflows as being “pushed” by circumstances in industrial

⁸⁰ Jeffrey A. Frankel and Chudozie Okongwu, p. 7.

countries. Capital inflows would decrease and turn to outflows, if international real interest rates returned to the higher levels.⁸¹

Based on Fernandez-Arias research, fall in US real interest rate, in addition to reducing the rates of return in developed countries, was the dominant cause of driving the capital flows into Latin America and other emerging markets in the 1990s. Therefore, since 1986, international real interest rates are the key crucial factors. The most important criticism is that real interest rate in Latin America and other emerging countries failed to converge to world real interest rate level.⁸² This does not mean that capital flows are not affected by the domestic policy applications. In Latin America during the 1990s, countries were liberalized aggressively, stabilized inflation, brought fiscal deficits under control and maintained an open trading. Therefore, financial system received larger capital flows than previous years that had not.⁸³

According to Mark Taylor, real interest rates are a more important factor affecting FPI into emerging countries, especially into Latin America rather than Asian countries. Latin American inflows are as sensitive as Asian inflows to interest rates, but they are less sensitive to all other influence.⁸⁴

Based on table 3.6, none of the Latin American countries have any of the five worst return months during the Asian Crisis. The Mexican crisis of December 1994 shows up in a large negative return for Mexico. Interestingly, this month does not appear in any of the other Latin American or Asian worst return months. October 1987, which is the date of a sharp drop in the U.S. stock market, shows up in the list for Mexico, Portugal, Taiwan and Thailand.⁸⁵

In Brazil, the January 1999 crisis matches with the trough of an 18 month bear market as seen in table 3.6. By the way, Argentina reached a peak in February 2000 and spent almost two years in a bear phase. Peaks and troughs do not match until the US

⁸¹ Eduardo Fernandez-Arias, "The New Wave of Private Capital Inflows: Push or Pull?", **World Bank Policy Research**, Working Paper 1312 (June 1994), pp.38-39.

⁸² Jeffrey A. Frankel and Chudozie Okongwu, p.7.

⁸³ Michael Gavin, Ricardo Hausmann and Leonardo Leiderman, p.3.

⁸⁴ Mark P Taylor and Lucio Sarno, "Capital Flows to Developing Countries: Long and Short Term Determinants", **The World Bank Economic Review**, Oxford University Press, Vol.11, No.3 (September 1997), p.466.

⁸⁵ Geert Bekaert and Campbell R. Harvey, "Emerging Markets Finance", **Journal of Empirical Finance**, No.10 (2003), pp.33-35.

stock market crises of 1987 when Argentina, Mexico and Brazil show a trough representing the US movement. Argentina, Brazil, Mexico, Chile and Thailand present very similar patterns, with peaks around the second quarter of 1992, one during 1994, one in late 1997 (Asian crises period), and a final peak in early 2000. Troughs come in late 1992, early 1995 after the peso crises in Mexico and a final one in late 1998 following the Russian crises.⁸⁶

⁸⁶ Sebastian Edwards, Javier Gomez Biscarri and Fernando Perez de Gracia, pp.13-19.

Table 3.6
Dates of the Peaks and Through for Latin America and United States

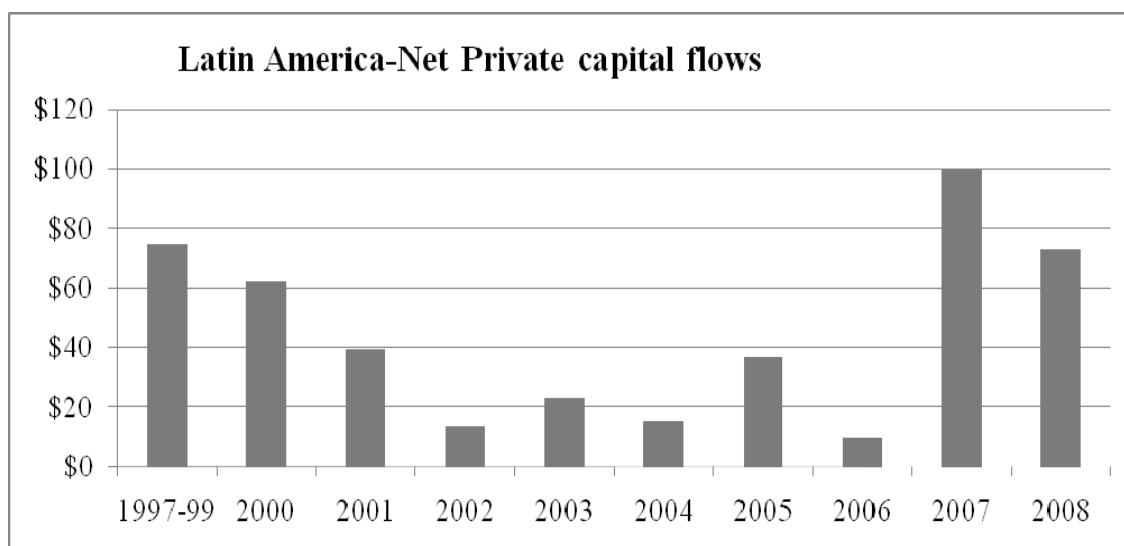
	Argentina	Brazil	Chile	Korea	Mexico	Thailand	USA
Trough					1976:10		
Peak	1976:08						1976:12
Trough	1977:10						1978:02
Peak				1978:08	1979:04	1978:10	
Trough							
Peak	1980:02		1980:06				1980:11
Trough		1981:03		1980:12			
Peak		1982:05		1981:06			
Trough	1982:10			1982:05	1982:12	1982:03	1982:07
Peak				1983:04		1983:08	1983:06
Trough		1983:08	1983:06	1983:11			
Peak	1984:03		1984:05		1984:02		
Trough							1984:05
Peak				1984:12			
Trough	1985:05		1985:02	1985:05	1985:07	1986:05	
Peak	1985:09	1986:04			1987:09		1987:08
Trough	1987:10	1987:12			1987:12		1987:11
Peak						1988:07	
Trough						1988:12	
Peak	1988:09	1989:04		1989:03			
Trough	1989:02						
Peak			1990:03			1990:07	1990:05
Trough		1990:12	1990:10	1990:08		1990:11	1990:10
Peak				1991:07			
Trough				1992:07			
Peak	1992:05	1992:04	1992:06		1992:03		
Trough	1992:11	1992:11	1993:04		1992:09		
Peak	1994:01	1994:09		1994:10	1994:01	1993:12	1994:01
Trough	1995:02	1995:03			1995:02	1995:01	1994:06
Peak			1995:06			1996:01	
Trough			1996:12				
Peak	1997:09	1997:07	1997:07		1997:09		
Trough	1998:08	1999:01	1998:08	1998:09	1998:08	1998:08	
Peak	2000:02	2000:03	2000:01	1999:12	2000:03	1999:06	2000:08

Source: World Bank, 1999

Different financial crises of the 1990s had dissimilar effects across the emerging markets. Mexican crisis impacted Argentina and Brazil, but not affected Chile, Korea or Thailand. In contrast, Argentina, Brazil, Mexico, Chile, Thailand and Korea were significantly affected by the collapse of the Asian markets in 1997. The

crisis in Brazil did not spillover to other markets. Flows to Latin America remained high through mid-1998, but afterwards declined sharply with the response to the Russian debt moratorium.⁸⁷

Graph 3.16
Net Private Capital Flows of Latin America (1997-2008)



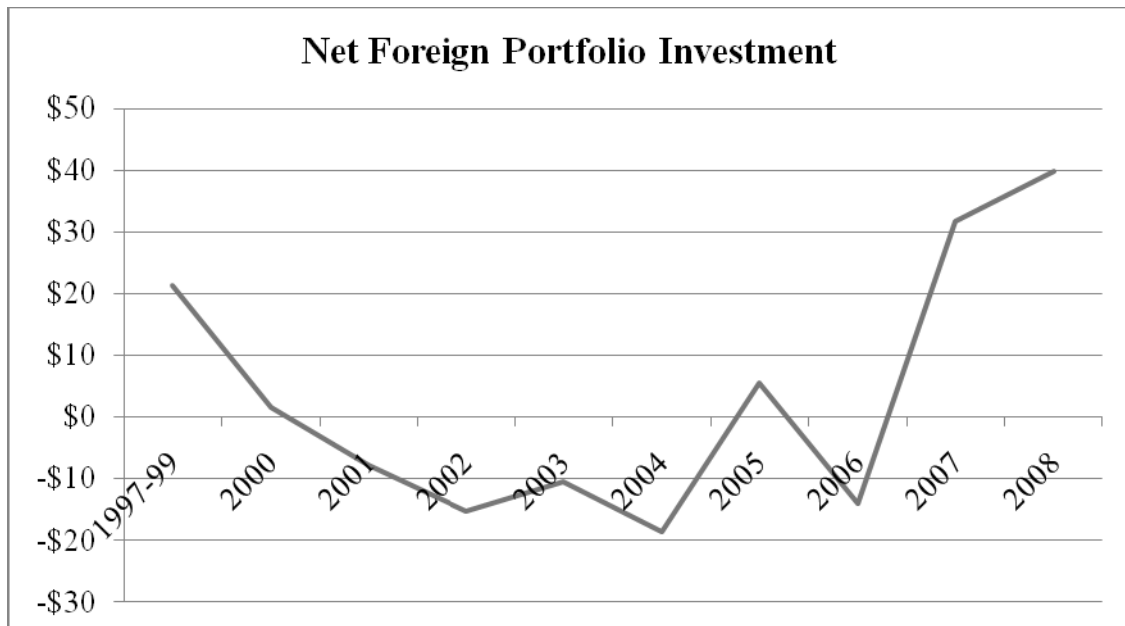
Source: Numeric data was taken from IMF World Economic Outlook, 2008

Net private capital inflows have risen since 2004. The increase of net private capital inflows was net off with the continued increase in net private capital outflows. The increase in net private capital inflows had recorded high surplus in 2007 (Graph 3.16).⁸⁸

⁸⁷ World Bank, "Private Capital Flows to Developing Countries", **Global Development Finance**, <http://siteresources.worldbank.org/INTGDF2000/Resources/CH2--34-55.pdf> (08 April 2009), 1999, p.38.

⁸⁸ International Monetary Fund, "Two Waves of Large Capital Inflows to Emerging Markets", **World Economic Outlook Survey**, 2007, p.4.

Graph 3.17
Net Foreign Portfolio Investment of Latin America (1997-2008)



Source: Numeric data was taken from IMF World Economic Outlook, 2008

Up to mid-2008, NFPI in Latin America was satisfactory, but credit crisis occurred in US in 2007 spread to rest of the world especially to EU and Japan in the second half of 2008. Economic slowdown being US spread to developed economies. Last external negative development is increase of energy prices and food prices creating inflationary pressure around the world. Therefore, in Latin America FPI declined as a result of global credit crises.⁸⁹

Argentina

Since mid-1976, series of measures were used to fight inflation and liberalize foreign trade and financial markets. As a result of those measures, demand for portfolio investment had increased. The recovery in the public's willingness to hold financial assets reflected restoration of confidence in peso as well as the rise in real interest rates due to decline in inflation rate. During the second half of the 1976, interest rate policy changed in the tendency of real interest rate rise into positive levels. Applied measures

⁸⁹ Terry L. McCoy, **2008 Latin American Business Environment Report**, Univeristy of Florida, October 2008, pp.11-13.

were the indexation of time deposits, freeing of interest rates on bank acceptances and issuing of treasury bills to compete with the commercial banks for private sector funds. As a result, commercial banks were forced to offer higher interest rates to attract deposits from the public. Therefore, real private financial assets were improved.

Full interest rate liberalization became in 1977. The increased flow of domestic resources to the banking system was due to high domestic real interest rate rather than abroad. Peso confidence and competition among financial intermediaries rose. Because of the increased capital inflows, the balance of payment had a large surplus in 1977. However, financial circumstances began to deteriorate toward the end of 1979, with the exchange rate overvalued. As a result of real appreciation of peso from 1978 to 1980, portfolio reallocation process leading to capital inflows came to end. Interest rates increased as funds were withdrawn from the banking system, causing to high real interest rates and erosion of bank deposits.⁹⁰

Argentina, Colombia, Jordan, Mexico and Taiwan reduced the exchange rate controls and included freely floating currency. By the way, Mexico and Thailand have been forced to abandon fixed exchange rate regime in the post-liberalized period. In emerging markets if excess return carries systematic risk compensation and if there is a probability for currency crash, then compensation increases rather than decreasing. Therefore, because uncovered interest rate parity deviates, it is very attractive for the cash inflow.⁹¹ Substantial capital account and financial liberalization are the crucial effecting issues for overshooting of capital inflows. Argentina can be given as example as liberalizing capital flows at an early stage. Capital flows to Argentina have been substantially above the long run steady state since 1990.⁹²

Deposit rate was deregulated in 1987, but only some loan rate had been regulated.

⁹⁰ Anthony Lanyi and Rüştü Saraçoğlu, "Interest Rate Policies in Developing Countries", **Washington DC: International Monetary Fund Attention Publications**, Occasional Paper 22, October 1983, pp.22-23.

⁹¹ Bill Francis, Iftexhar Hasan and Delroy Hunter, "Emerging Market Liberalization and the Impact on Uncovered Interest Rate Parity", **Federal Reserve Bank of Atlanta**, Working Paper No.16 (August 2002), pp.5-7.

⁹² Philippe Bacchetta and Eric Van Wincoop, "Capital Flows to Emerging Markets, Liberalization, Overshooting and Volatility", **National Bureau of Economic Research**, NBER Working Paper Series 6530 (April 1998), p.6.

Chile

1971-73 periods in Chile correspond to the socialist experiment. The period from 1974 to 1981 represents the first complete business cycle of the military government, during which the authorities introduced most of the free-market reforms. Deep recession was experienced in 1974-1975 and lasted with the peak of the boom of the late 1970s and early 1980s.

Towards the end of the 1980s, private capital inflows began to return to Latin America. Chile was one of the first countries to attract the foreign capital flows. Domestic real interest rates were exceeded the international interest rate for interest arbitraging capital inflows to take place in Chile. Domestic interest rates remained high. However, both the large magnitude of the new capital flows and their composition prone to volatility have caused problems.

The 1982-1989 periods related with the debt crisis. The first four years are marked by depressed economic conditions, followed by quick recovery in 1986-1989. This latter year also represents a cyclical peak. Finally, the period since 1990 corresponds to the return to democratic rule and is roughly coincident with the latest episodes of foreign capital enlargement (1990-94 and 1996-97) and the implementation of a set of active macroeconomic policies. During most of the 1990s, the economy has been expanding and has been close to capacity output.⁹³

A significant proportion of the recent inflow to emerging markets has taken the form of short term or liquid capital. There have been two components of capital inflows that are clearly of a short term nature: short-term loans and deposits, and portfolio flows. FPI are new phenomenon for Chilean economy. Central Bank of Chile imposed taxes on FPI during 1991 and 1998 periods to enhance the independence of monetary policy, to decline the vulnerability of external indebtedness in short term and avoid currency appreciation.⁹⁴ Portfolio investments can be liquidated in a moment. Typically,

⁹³ Manual R. Agosin and Ricardo Ffrench –Davis, “Managing Capital Inflows in Chile”, Oxford University Press, 2000, <http://www.financialpolicy.org/financedev/agosin.pdf> (15 April 2009), pp.1-5.

⁹⁴ Jorge Desormeaux, Karol Fernandez and Pablo Garcia, Financial Implacations of Capital Outflows in Chile: 1998-2008, BIS Papers No.44, p.125.

portfolio investors operate with imperfect information; they seek short-term capital appreciation, and are prone to bandwagon effects, either in taking positions or in liquidating them. Since 1998, Chile experienced the effects of the Asian crisis rather than capital controls on FPI due to the contagion effects occurred in emerging market. In both cases, the original crisis spread to other “emerging markets”. Therefore, large portfolio inflows were followed by large outflows, with sharp reversals of initial appreciations in exchange rates and stock market prices.⁹⁵

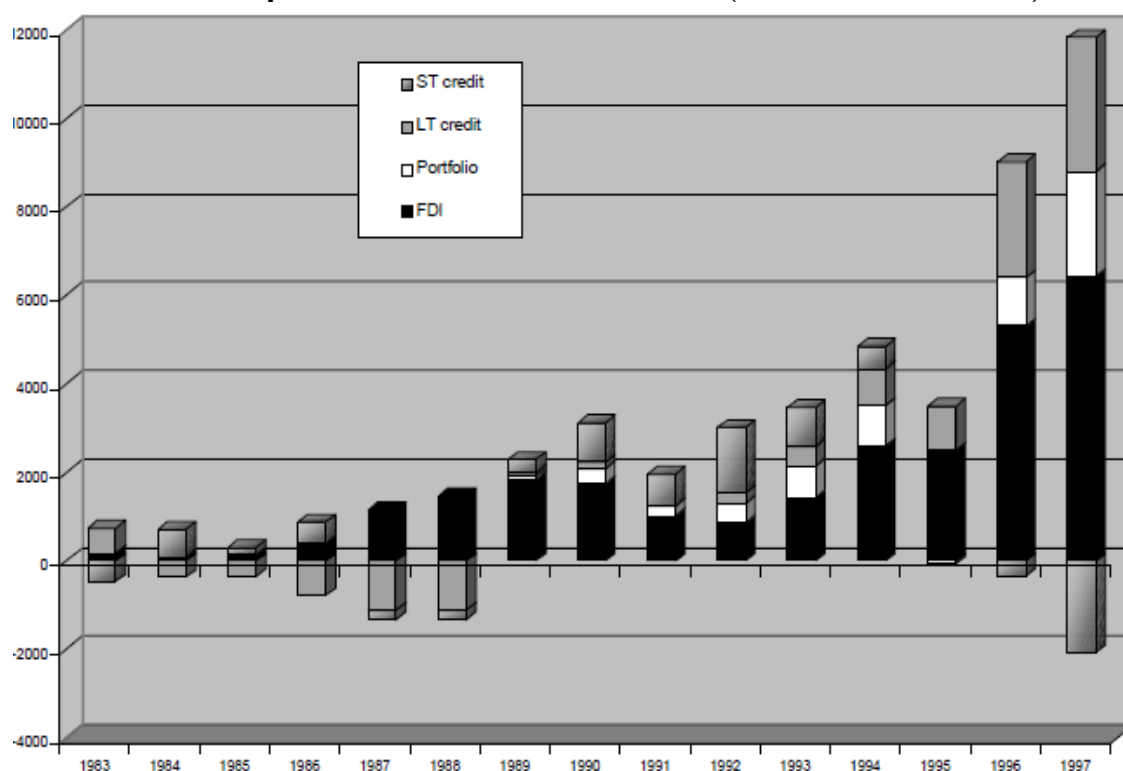
As Chile began to suffer from the debt crisis, the real exchange rate expectations turned from depreciation to appreciation. Moreover, expectations of exchange rate appreciation, encouraging short term FPI. Also, as in other emerging countries, there was a decrease in the country risk premium. Chile’s relatively developed domestic stock market, plus use of American Depositary Receipts (ADRs) for placing shares in the United States stock markets, made Chilean stocks a prime candidate for investors seeking new and more exotic financial instruments. Short term private flows were very important until 1993.

Portfolio inflows have taken two forms including investments through “mutual funds” set up in the major international capital markets and the issuance of “American Depositary Receipts” by a handful of large Chilean corporations. The ADR is a mechanism by which foreign corporations can issue new shares in the US stock markets. The original issue of ADRs indicates an opportunity for expanding the capital of firms at relatively low cost, since capital costs in international markets tended to be lower than in Chile. However, there is also what is known as the “secondary” issue of ADRs through the purchase of the underlying stock in the Chilean market by foreigners and its subsequent conversion into ADRs. This operation does not constitute a development of the capital of the issuing company, but only a change in ownership from nationals to foreigners. These shifts in ownership involve exposing the economy to an additional degree of uncertainty and volatility, since when foreign investors’ attitude changes they can easily reverse the operation and convert their ADRs into the underlying stock in national currency for sale on the domestic stock market.

⁹⁵ Manual R. Agosin and Ricardo Ffrench –Davis, pp.1-5.

As an application of regulations on capital movements in Chile, minimum amount of ADR issue reduced from \$50 million in 1994 to \$25 million in 1998. Minimum risk rating of BBB required for non financial firms and BBB+ for banking companies for FPI flows. Reserve requirements were reduced to 10 percent from 30 percent in June 1998. These include trade deficits, foreign currency deposits, loans associated with FDI and bond issues. In September 1998, the reserve requirement was set as 0 percent.⁹⁶

Graph 3.18
Private Capital Inflows Elements 1983-1997 (millions of US dollars)



Source: Agosin, 2000, p.37

After 1997, Chilean economy continued to increase financial integration process driven by several factors including decreasing regulatory and legal tax application, adopting flexible exchange rate and applying prudential regulation of government due to provide stable interest rate and inflation. Therefore, this caused stable banking and financial system development. After 1997 and 1998 Asian and

⁹⁶ Manual R. Agosin and Ricardo Ffrench –Davis, pp.6-32.

Russian crises, Chilean economies had to be given importance of macroeconomic factors' management. In September 1999, the exchange rate band was changed to free float exchange rate type. The central bank has a right to intervene in forex market. In 2005, sterilized intervention will be applied to protect the inflation targeting regime.

The minimum holding period for profits from FPI (called reserve requirements) was lifted and non residents were exempted from capital gains taxes in the local stock market, while they mostly invested in liquid assets creating foreign exposure.

Also, pension funds created foreign exposure since mid-1990s. Exchange rate policy and high local interest rate made local investment opportunities very attractive. However after 1997 and 1998 crises following limitations on the capital controls and floating the peso from 1998 to 2001, pension funds rapidly reached their regulatory limit. Substantial capital outflows were realized amounted 3.325,3 million USD in cumulative. From 2001 to 2007, the share of foreign portfolio investment reached to %40 from %15. Central Bank changed the limit of pension funds by shifting.

One important structural implication of pension funds hedging their exchange rate risk, for example selling long forward positions in foreign exchange to the local banking system, is that local banks, by tending to keep their foreign exchange exposure close to zero, intermediate this position by also selling long forward positions in foreign exchange to their clients. Therefore, the clients of the banking system find a ready counterpart to buy long forward positions in foreign exchange in the banking system and thus hedge their balance sheet exposure to exchange rate risk. Finally, this situation created currency mismatch.⁹⁷

Chilean major stock indices were down in terms of prices, volume and listings. For the third quarter of 2008, Dow Jones Global Indices reported decline in US dollars and Chile local currency as %-13,1 and -%9,1 respectively.⁹⁸

⁹⁷ Jorge Desormeaux, Karol Fernandez and Pablo Garcia, Financial Implacations of Capital Outflows in Chile: 1998-2008, BIS Papers No.44, pp.121-132.

⁹⁸ Terry L. McCoy, p.14.

Mexico

Investors command a risk premium due to the higher volatility, increasing domestic interest rates. In turn, these higher domestic rates can give a relative advantage to large exporting firms and it is obviously easier to obtain resources from abroad. It is obvious that the direct impact on aggregate demand of changes in interest rates becomes smaller while the exchange rate channel becomes more crucial. There are two reasons why more integration and higher uncertainty translate into a smaller direct effect of interest rates. Financial integration allows companies to have access to foreign sources of financing. In addition, higher uncertainty may limit the development of the domestic financial sector due to the risk premium associated with credits in domestic currency. Both elements strengthen each other, so domestic credit represents a smaller proportion of total financing in the economy in Mexico.⁹⁹

In Mexico, external factors are the most crucial influence on NFPI. Capital inflows level is temporary if global real interest rate returns to the high level of the 1980s.¹⁰⁰

Mexico adopted a floating exchange rate regime in 1994-1995 because of the balance of payments and financial crises. When the macroeconomic situation was reestablished and the refinancing problems of Mexico's external public debt were resolved, the country regained access to international capital markets, Banco de Mexico was able to accumulate international reserves and the volatility of the main financial variables came down. There was a fast development of derivatives markets related with the peso/dollar exchange rate, so agents allowed to guarantee against currency movements. After the recovery of peso crises, emerging markets' crises of 1997-1999 was confronted and oil prices fell down in 1998. However, one of the main arguments that flexible exchange rate regime is not truly floating. Currency floats are based on whether inter-country comparisons of the ratio of exchange rate volatility to the interest rate volatility, or international reserves. Therefore, if the ratio of exchange rate volatility

⁹⁹ Guillermo Ortiz, "How Should Monetary Policy Makers React to the New Challenges of Global Economic Integration: the Case of Mexico", **Federal Reserve Bank Symposium Paper**, <http://www.kc.frb.org/PUBLICAT/SYMPOS/2000/or.pdf>, (20.10.1982), pp.12-13.

¹⁰⁰ Eduardo Fernandez-Arias, "The New Wave of Private Capital Inflows: Push or Pull?", **World Bank Policy Research**, Working Paper 1312 (June 1994), p.7.

to interest rate volatility or international reserve is smaller than those of the developed countries, a country is classified as non-floating. If this is the issue, the emerging floaters must be actively setting the interest rate and using international reserves to limit the currency movements were argued.¹⁰¹

When 1989-1993 periods and 1996-2000 periods were compared, it was seen that volatility of exchange rate increased sharply and interest rate and international reserves fell down. (Table 3.7) The volatility of the level of interest rates is smaller by 43%, that the central bank followed a sterilization policy during the first period. A comparison of the ratio of the volatility of changes in international reserves to the volatility in exchange rate changes represents that this has fallen from 19.9 to 1.8, while the ratio of the volatility of the interest rates level to the volatility of changes in the exchange rate has decreased from 21 to 3.3. This implies a dramatic change in the way the exchange rate fluctuates with respect to these other financial variables.¹⁰²

Table 3.7
Bank of Mexico, January 1989 – June 2000

Volatility				Ratio of variable's volatility to exchange rate volatility	
	Exchange Rate	International Reserves	Interest Rates	International Reserves	Interest Rates
1989-1993	0.62	12.32	13.00	19.91	21.01
1994-1995	9.66	37.80	19.94	3.95	2.08
1996-2000	2.26	4.16	7.36	1.8	3.26

While towards 2007, Latin American equities' performance was good, in 2008 all of the major stock indices were down in terms of prices, volume and listings. For the third quarter of 2008, Dow Jones Global Indices reported the following decline in US dollar and local currency: Mexico, -18,7 and -13,3. For the same quarter, US stock market index declined %9,1¹⁰³.

¹⁰¹ Guillermo Ortiz, pp.3-4.

¹⁰² Guillermo Ortiz, p.5.

¹⁰³ Terry L. McCoy, **2008 Latin American Business Environment Report**, Univeristy of Florida, October 2008, p.14.

3.1.3. Africa

For *Africa*, between 1980s and early 1990s, capital flows to Africa were dominated by official transfers. The restriction and the openness measures show little change until the early 1990s. The substantial increase in openness in the 1990s is mainly due to events in a limited number of countries. In the early 1990s, large proportion of increasing net private capital inflows are short term and funneled through domestic banking system, seen from Table 3.8 rises in foreign direct investment is not material. Also, because of the small size of domestic capital market in Africa, foreign portfolio investment was very limited.¹⁰⁴ The combination of financial market liberalization and efforts to sterilize foreign exchange rate operations of the central bank drove real interest rates higher and converted large portfolio flows to Africa, which has the most developed financial markets in the region during the 1993-1994 periods (Table 3.8).¹⁰⁵

Table 3.8
Net Capital Flows: Africa (Billions of US dollars)

AFRICA	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Net private capital flows	6.2	3.5	9.7	3.4	2.6	9.2	19.4	13.1	11.7	18.2
Net direct investment	2.1	0.6	1.9	2.3	6.6	4.7	7.4	4.8	8.4	8.7
Net portfolio investment	-2.0	1.3	-1.6	2.3	2.1	3.1	4.1	6.6	2.4	4.7
Other net investment	6.1	1.6	9.4	-1.2	-6.1	1.4	7.9	1.7	0.9	4.8
Net official flows	9.1	12.1	8.3	13.5	11.7	0.2	-4.7	2.2	4.8	-3.5
Change in reserve (*)	-3.0	0.3	-2.2	-5.6	-0.7	-10.1	-14.2	-2.5	-1.4	-8.2

Source: IMF, 2001

Net private capital flows in Africa are not systematically influenced by changes in international real interest rates, but mostly affected by foreign direct investment fluctuations.¹⁰⁶

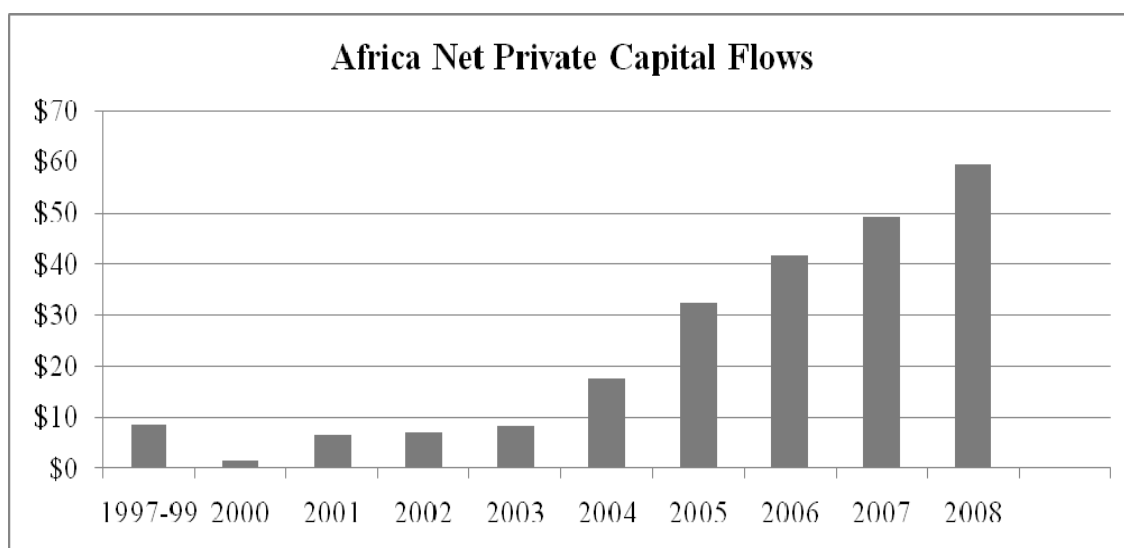
¹⁰⁴ Carmen Reinhart and Patrick Asea, "Real Interest Rate Differentials and the Real Exchange Rate: Evidence from Four African Countries", **Munich Personal Repec Archive**, Paper No.13357 (August 1995), pp.1-11.

¹⁰⁵ International Monetary Fund, **World Economic Outlook: World Economic and Financial Survey**, October 2001, pp.150-151.

(*) minus sign indicates an increase

¹⁰⁶ Guillermo Calvo and others, "The Growth Interest Rate Cycle in the United States and Its Consequences for Emerging Markets", **Inter American Development Bank Review**, Working Paper 458 (March 2001), p.6.

Graph 3.19
Net Private Capital Flows of Africa (Billion of US dollars) (1997-2008)

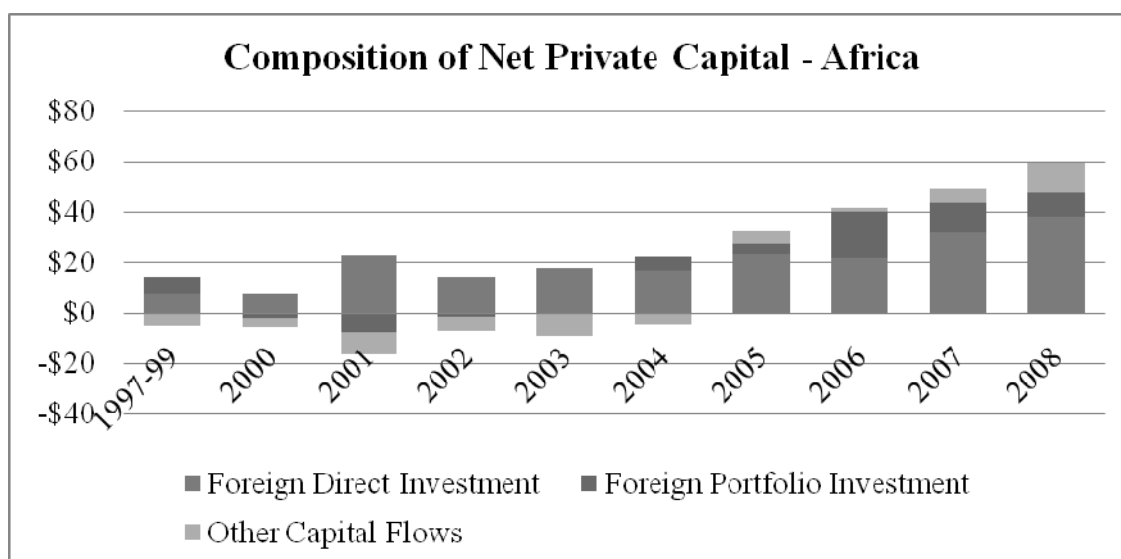


Source: Numeric data was taken from IMF World Economic Outlook, 2008

Net private capital inflows in sub-Saharan African countries have increased more than four times since 2000 (graph 3.19), representing a crucial share of FDI and increasing portion of FPI since 2001 because of the trends among developed and emerging countries. In 2006, private capital flows to sub-Saharan Africa overtook official aid for the first time in which the most of those flows had converted to South Africa and Nigeria, but portfolio flows rose up in a small group of countries including Ghana, Kenya, Tanzania, Uganda and Zambia to develop risk ratings and attractive yield. The increase in foreign portfolio flows to \$18.5 billion in 2006 was particularly rapid, reaching 18 times the 2003 level. FDI remained stable at about \$16-21 billion.¹⁰⁷

¹⁰⁷ International Monetary Fund, **Regional Economic Outlook: Sub-Saharan Africa, World Economic and Financial Survey**, April 2008, pp.45-48.

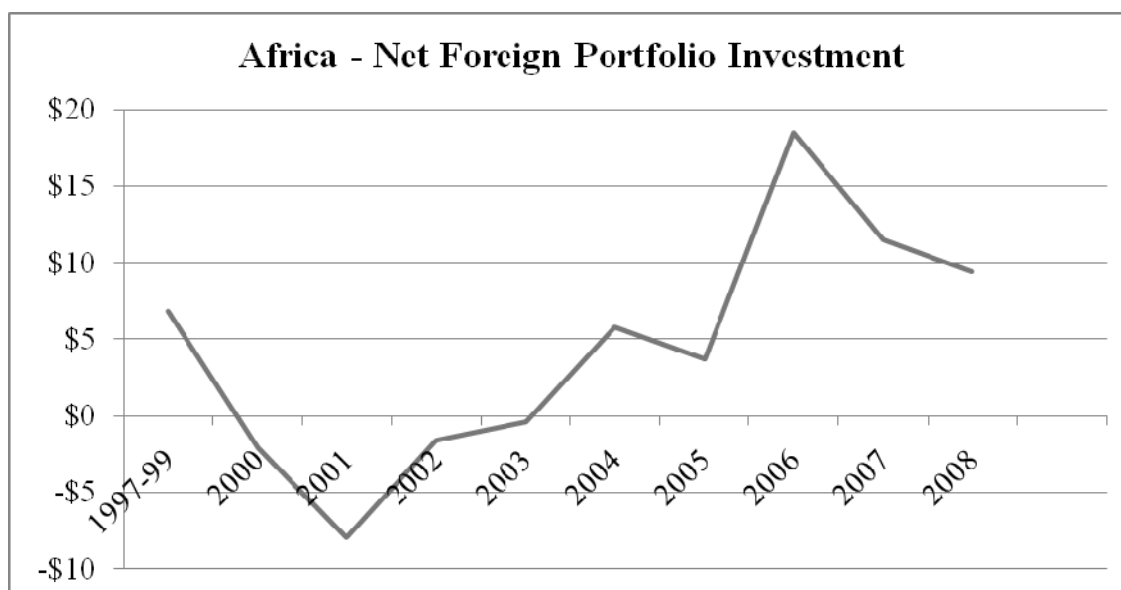
Graph 3.20
Composition of Net Private Capital (Billion of US dollars) (1997-2008)



Source: Numeric data was taken from IMF World Economic Outlook, 2008

As it is seen from the Graph 3.20, foreign portfolio flows had increased towards 2008 year when it is compared with other compositions of net private capital flows in Africa.

Graph 3.21
Net Foreign Portfolio Investment of Africa (Billions of US dollars) (1997-2008)



Source: Numeric data was taken from IMF World Economic Outlook, 2008

The increasing real interest of emerging countries is a crucial factor promoting FPI flows to Africa. Nowadays, institutional investors in Africa are involved in a broad range of financial market operations, including domestic bond and foreign exchange markets through both physical and derivative instruments. Foreign investors channel their capital through a variety of instruments, including equity shares, government bonds, corporate bonds, and collective investment schemes (CIS), which they can buy on first issuance or subsequently in the secondary market. Complex financial instruments were introduced into African markets that are at less mature level in economic development. The “technology transfer” from emerging markets into the nascent emerging markets of Africa is limited because of the severe constraints of market depth as well as the regulatory and market infrastructures.

Even with excess international liquidity, FPI to sub-Saharan Africa have been concentrated in the relatively small number of countries. South Africa, which has the most developed capital and financial markets, attracts substantial portfolio capital into its equity and debt markets, including some from Global Emerging Markets (GEM) portfolio funds. The other current favorites consist of Botswana, Ghana, Kenya, Nigeria, Uganda, and Zambia in which foreign investors target selected equity and bond issues, including initial public offerings (IPOs) by private enterprises and long-term bond issues. A recent wave of cross-border banking investments and the emergence of global banks suggest potential for increasing integration in international capital markets.¹⁰⁸

However, Africa domestic market has so small size. Of the 44 sub-Saharan African countries, only 22 have established equity markets, and of these, only 9 markets have more than 20 listings. Besides the small size of the overall market, the small volume of issues in the primary markets limits entry. The modest capitalization of listed equities also limits the foreign funds coming through equity markets. As for government securities, about 30 sub-Saharan African countries issue or have issued treasury bills and 20 issue bonds. However, bond markets for the most part consist of only a handful of small issues, and there are no meaningful secondary markets. Thirteen sub-Saharan

¹⁰⁸ International Monetary Fund, **Regional Economic Outlook: Sub-Saharan Africa, World Economic and Financial Survey**, April 2008, pp.50-54.

African countries have issues of corporate bonds, often stocks of foreign banks, but there are no real markets and there is no secondary trading. Except for South Africa and a few other sub-Saharan African countries such as Botswana, Nigeria, and Tanzania, local equity and bond markets are dominated by domestic institutional investors (pension funds and insurance companies). This has often led to buy-and-hold strategies preventing liquid market improvement. These investors have traditionally invested in real estate, term bank deposits, and treasury bills.¹⁰⁹

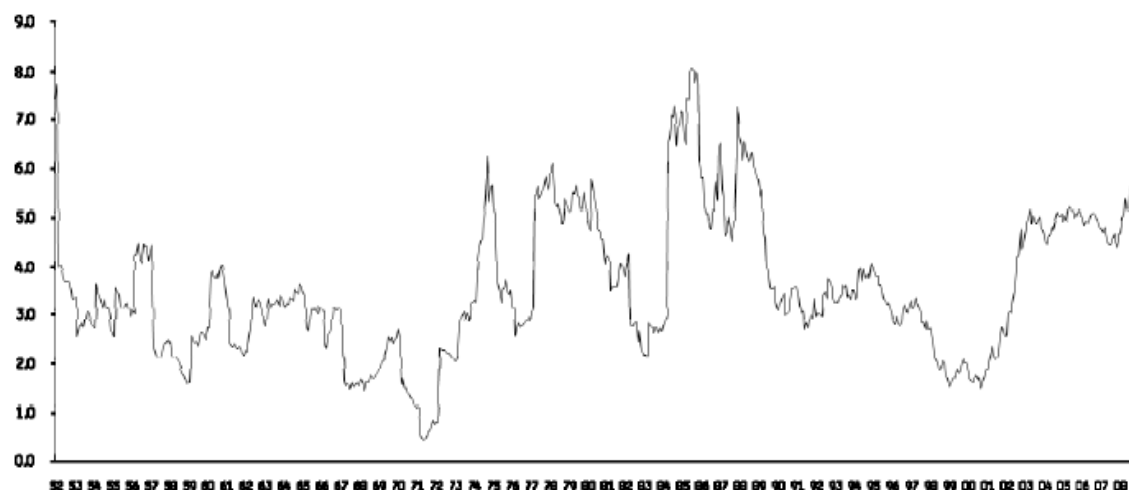
3.2. Net Foreign Portfolio Investment in Developed Economies

Except for 1980-1990 periods, real interest rates were higher in the United States compared to those in Japan. The real interest rates differential became larger until 1994, when the monetary policy in the United States eventuated more restricted. After 1984, real interest rate differentials became smaller. FPI in the United States made by Japan were fluctuating due to the changes in the real interest rate differentials with a lag of one or two years. However, in 1986, foreign portfolio outflows were very large, although the real interest rate differential was small (Graph 3.22). This was the effect of financial liberalization causing international capital flows to improve, in turn reduce the real interest rate differentials.¹¹⁰ Also, there are low yields through 1990s, because of the low US real interest rates.

¹⁰⁹ International Monetary Fund, **Regional Economic Outlook: Sub-Saharan Africa, World Economic and Financial Survey**, April 2008, pp.54-56.

¹¹⁰ Dipack R. Basu and Victoria Miroshnik, **Japanese Foreign Investments, 1970-1998: Perspectives and Analyses**, London, England: M.E Sharpe Publish, 2000, pp.54-55.

Graph 3.22
US Large Capitalization Stocks, Free Cash Flow Yields
From 1952 to October 2008

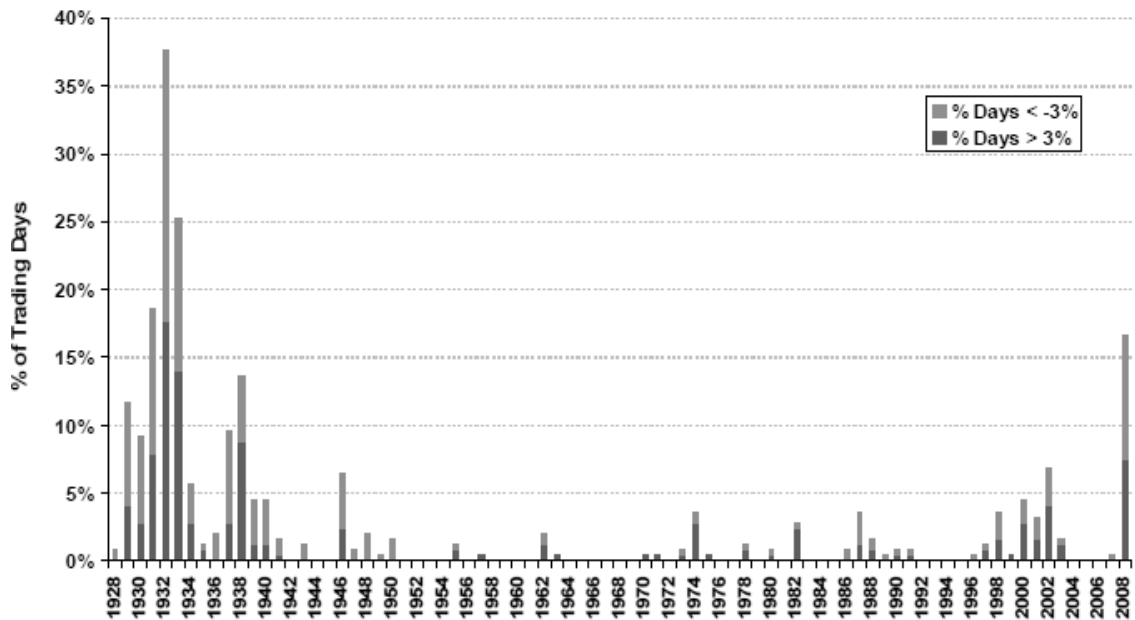


Source: GE Asset Management, 2008, p.25

The United States business cycle has important repercussions for the rest of the world. Developed economies, most notably Canada, are steeply influenced by economic developments in the United States and also the same holds true for emerging economies, especially those in the Western Hemisphere and newly industrialized Asia, whose fates are more closely aligned with those of the United States than other developing countries.¹¹¹

¹¹¹ Guillermo Calvo and others, “The Growth Interest Rate Cycle in the United States and Its Consequences for Emerging Markets”, **Inter American Development Bank Review**, Working Paper 458 (March 2001), p.7.

Graph 3.23
Percent of US Stock Market Trading Days 1928-2008

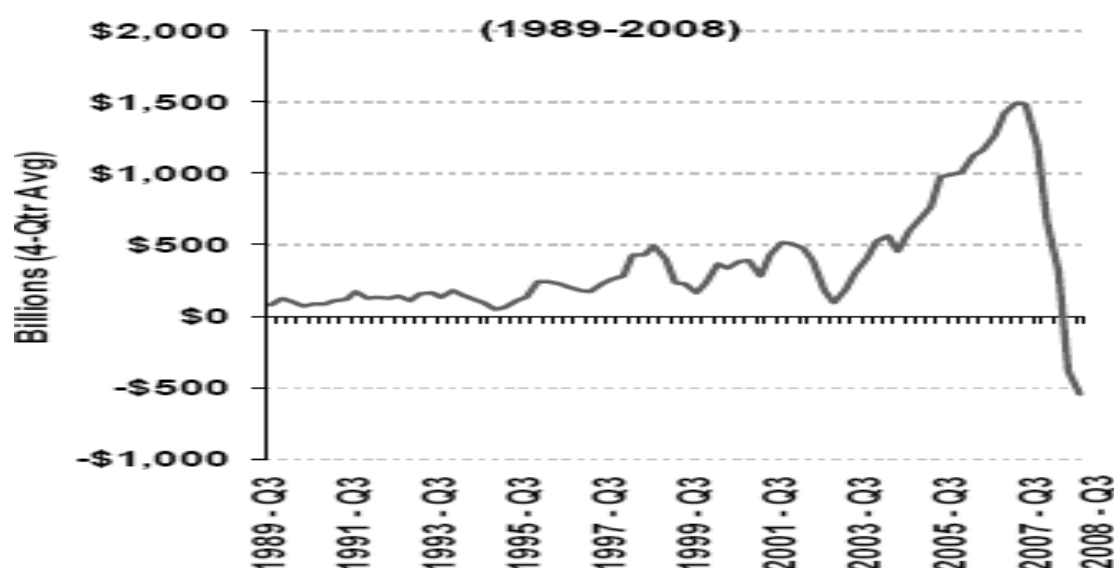


Source: Bloomberg-Fidelity Management and Research Corporation, p.8

The mid-2007 subprime mortgage tragedy in the United States has converted into a global financial crisis and started to move the global economy into a recession. Aggressive monetary policy action in the United States, Japan and parts of Europe and massive liquidity injections by the central banks of the major developed countries were unable to evolve this crisis and turmoil has continued into 2008. Several major financial institutions in the United States and Europe have failed, and stock market and commodity prices have collapsed and become highly volatile. Rising volatility in interest rate spreads between interbank lending and Treasury bills; and emerging market lending surfaced in August 2007 are the early signs of emerging global financial turmoil. Retail businesses and industrial firms find increasingly difficult to obtain loan as banks have become reluctant to lend, even to long-time customers. Prices of financial companies' stocks were under pressure before September. In October 2008, the financial crisis escalated further with sharp falls on stock markets in both developed and emerging economies. Many countries experienced worst sell off in equity markets. A number of large financial institutions were cut off from access to long-term capital and short-term funding markets. In the United States, these consisted of the two

government-sponsored enterprises (GSEs) including Fannie Mae and Freddie Mac, as well as Lehman Brothers, American International Group (AIG), Inc. and Washington Mutual. Fannie Mae and Freddie Mac hold about \$5 trillion worth of mortgage loans, about half of all the mortgage loans in the United States. They are also the issuers of multi-trillion-dollar bonds bought by many other financial institutions worldwide, including the central banks of many countries, as well as pension funds. Because of the failure of Fannie Mae and Freddie Mac in the global financial system, Federal Housing Finance Agency put them conservancy of US Government and Treasury provided financial support. AIG is one of the largest insurance companies in the world having more than one trillion dollars in assets and operates more than 100 countries. AIG plays a central role in a number of markets by insuring risks for many other companies. For example, it holds a swap portfolio valued at about \$500 billion for the insurance of the debts of many other major financial institutions. Given the size and composition of its obligations, a failure of AIG would also severely threaten global financial stability. To protect AIG, the United States Treasury provided an emergency credit line of \$85 billion in exchange for about 80 per cent equity ownership in AIG.¹¹²

Graph 3.24
Acquisition of Financial Assets by Asset Backed Securities Issuers and Brokers

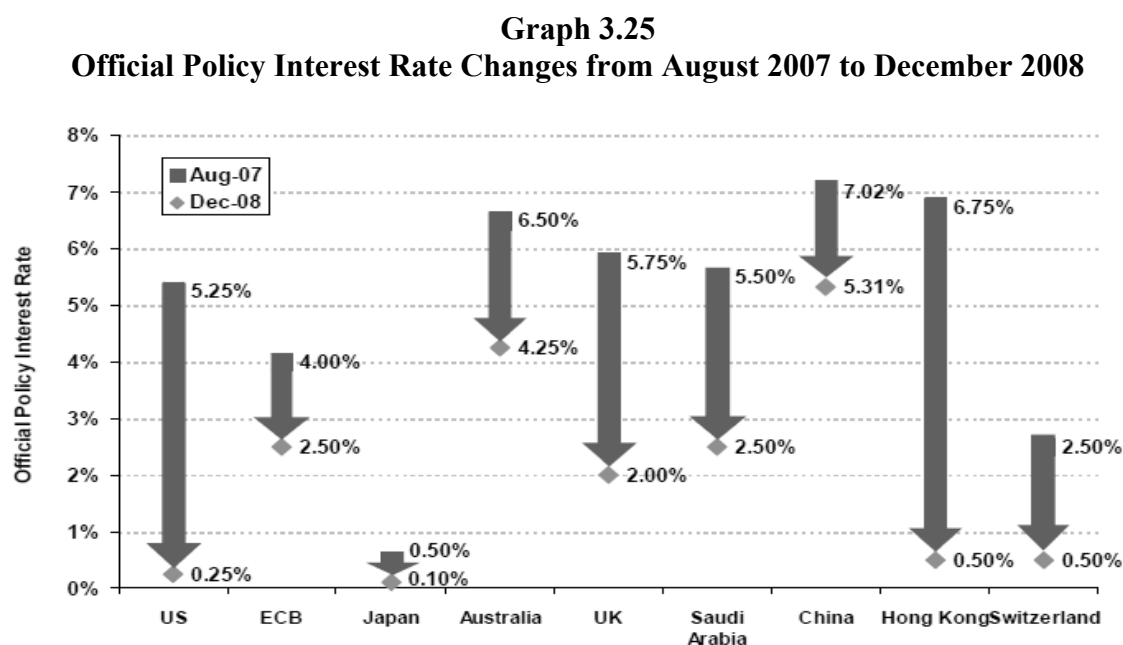


Source: FMRCo, p.11

¹¹² United Nations, **World Economic Situation and Prospects 2009: Global Outlook**, December 2008, pp.9-11.

Investment banks in U.S. either went to bankrupt, merged with other commercial banks, or converted themselves into commercial banks. Between September 2007 and October 2008, 16 banks in the United States filed for bankruptcy, and more than 100 out of some 7.000 banks are on the Fed's watch list. While this proportion is still small compared with the Great Depression, when about 700 out of a total of 9.000 banks had failed, its influence in an integrated global financial world is big. In November 2008, the United States Government also had to come to the rescue of Citigroup, backing about \$306 billion in loans and securities and investing \$20 billion directly in the financial institution.

The credit crisis quickly spread to Europe, with a number of large European financial institutions collapse, such as the Dutch-Belgian bank Fortis, the French-Belgian Dexia, the British mortgage lender Bradford & Bingley, Germany's Hypo Real Estate, as well as the Dutch bank and insurance company ING and the Dutch insurance giant Aegon. In Iceland, three major banks collapsed, dragging the country to the brink of bankruptcy as the total external liabilities of the three banks accounted for five times Iceland's annual GDP.¹¹³

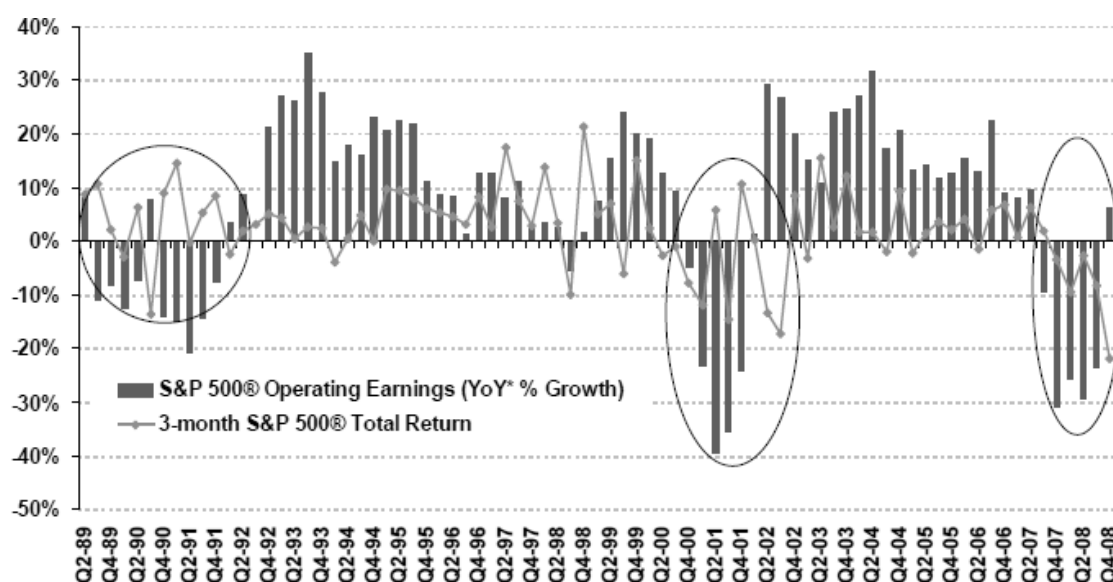


Source: FMRCo, p.13

¹¹³ United Nations, **World Economic Situation and Prospects 2009: Global Outlook**, December 2008, p.11.

US approved “Emergency Economic Stabilization Act” including 700 billion dollars for troubled asset relief program. Federal Reserves announced formation of Commercial Paper Funding Facility to purchase unsecured and asset backed commercial paper from qualified borrowers. Commercial paper is the prime source of funding to cover operational expenses in many large corporations and financial institutions. Federal Reserve announced plan to purchase \$600 billion in agency debt and mortgage-backed securities to decrease mortgage rates. United States announced plan to create a \$200 billion facility, backed by the Fed, to purchase consumer and small business loans to drive down borrowing costs. Federal Reserve enlarged U.S. dollar swap programs with other foreign central banks to \$620 billion. Federal Reserve announced the formation of a money market investor funding facility to provide liquidity to private money market investors. U.S. Treasury opens money market funds guarantee program. Those are the rescue packages of the United States. By the way from August 2007 to December 2008, real interest rates were cut by the Central Banks of developed countries as a monetary policy easing (Graph 3.25).¹¹⁴

Graph 3.26
Earnings Growth versus Stock Performance (1989-2008)



Source: FMRCo, p.27

¹¹⁴ The Market Analysis, Research and Education (MARE) Group, **2008 Market Update**, January 2009, pp.12-13.

United States corporate profit growth had experienced worst in 1989-1990, 2001-2002 and last quarter 2007-2008 periods. By the way, companies operating earnings and stock yields were stayed negative. S&P 500 was up 3.53% in 2007, but down 41.5% in 2008. Markets were up in 2007 before the crash of 2008. 19 banks had failed in 2008. Lehman and bank bankruptcies deeply damaged in the financial integration of financial institutions. Fear has spread to European banks as a contagion effect. As a consequence, lending is declining and LIBOR interest rate is rising.¹¹⁵

Table 3.9
2008 Stock Performances in United States

Assets Class	Total Return	Best / Worst
Treasury Bonds	14%	Best since 1995
Municipal Bonds	-2%	Worst since 1994
Investment-Grade Corporate Bonds	-3%	Worst since 1994
High Yield Corporate Bonds	-26%	Worst on record
Small Cap US Stocks	-34%	Worst since 1937
Large Cap US Stocks	-37%	Worst since 1931
Real Estate Stocks	-38%	Worst on record
Foreign Developed-Country Stocks	-43%	Worst on record
Emerging Market Stocks	-53%	Worst on record

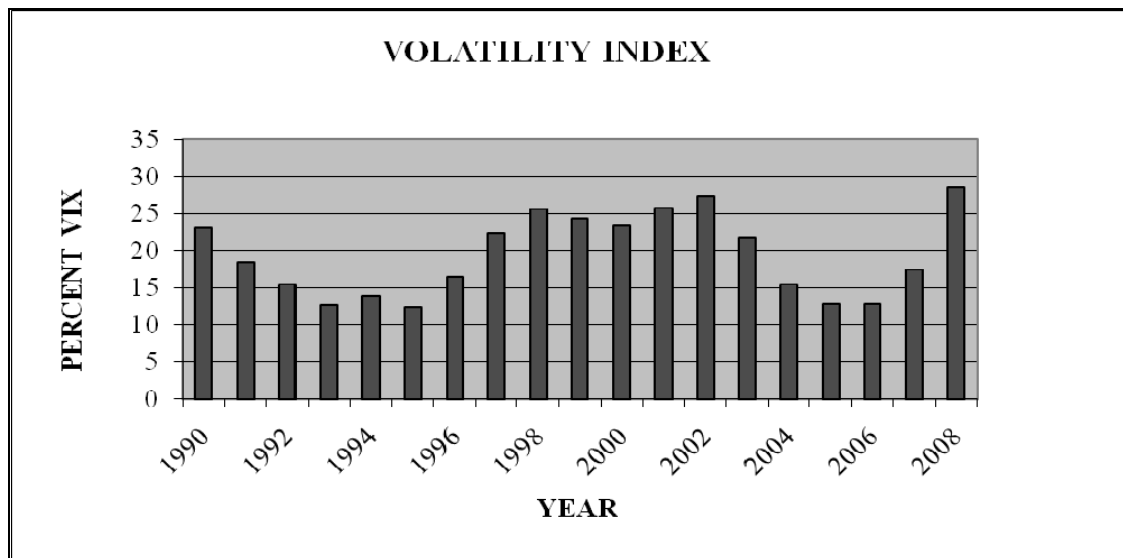
Source: FMRCo, December 2008, p.6

In 2008, the U.S. stock market lost more than a third of its value, marking the largest annual decline since the Great Depression era. Foreign developed and emerging market equities declined even worse. Alternative investments including real estate, commodities and hedge funds suffered similar declines and provided little diversification benefit.¹¹⁶

¹¹⁵ Robert P. Hartwig, "Financial Crisis and the Future of PC Insurance Challenges Amid the Global Economic and Regulatory Storm", **20th Annual P/C Insurance Executive Conference**, November 2008, p.15.

¹¹⁶ Chicago Board Options Exchange (CBOE), **Using VIX in a Diversified Portfolio**, Vol. 1, Issue 2, January 2009, p.1.

Graph 3.27
US Stock Market Volatility (1990-2008)



Source: Numeric data was taken from Chicago Board Options Exchange, 2008

When the real interest rates in Japan and Germany were compared, German real interest rates were higher than Japan, except in 1982, 1983 and 1993. The real interest rate differentials were large until 1991, but were declined afterwards. There were substantial foreign portfolio investments from EU rather than higher German real interest rates. Therefore, the relationship between the real interest rate differentials between EU and German were not clear like United States and Japan.

In 1989, the real interest rate differential between Japanese and foreign countries began to narrow. Foreign portfolio investment shrank, because investors saw unrealized profits on their domestic equity portfolios that began in early 1990. Therefore, foreign portfolio inflows increased since weak prices made Japanese stocks undervalued compared with foreign securities.

Table 3.10
Net Capital Flows: Western Hemisphere, Middle East & Europe (Billions of US dollars)

<u>WESTERN HEMISPHERE</u>	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Net private capital flows	24.1	55.7	61.4	44.1	46.7	79.7	86.1	73.8	47.2	62.7
Net direct investment	11.3	13.9	12.0	23.4	23.1	38.9	51.3	48.1	42.8	43.1
Net portfolio investment	14.7	30.3	61.1	61.8	4.6	37.9	36.2	39.7	12.0	23.6
Other net investment	-2.0	11.4	-11.7	-41.1	18.9	2.9	-1.4	-14.0	-7.7	-4.0
Net official flows	2.7	-1.7	0.7	-3.4	21.1	-14.1	-8.4	4.1	4.8	-0.1
Change in reserve (*)	-17.4	-22.6	-21.3	4.2	-25.5	-28.1	-14.5	12.9	6.7	-4.1
<u>MIDDLE EAST & EUROPE(include Israel)</u>										
Net private capital flows	65.7	38.8	29.1	16.1	8.0	6.4	17.0	10.3	17.4	11.1
Net direct investment	1.2	0.9	4.1	6.0	5.4	2.0	2.8	2.6	3.8	9.5
Net portfolio investment	10.8	14.9	8.8	9.0	2.4	1.8	3.7	-8.6	6.5	6.2
Other net investment	53.7	22.9	16.1	1.1	0.1	2.6	10.4	16.3	7.1	-4.7
Net official flows	3.9	-1.2	2.2	-1.5	-1.5	-1.1	-0.8	-1.1	-1.7	-2.0
Change in reserve (*)	-3.9	-9.0	1.0	-1.8	-9.1	-20.9	-19.7	11.5	-6.8	-5.1

Source: IMF, 2001 - (*) minus sign indicates an increase

Japan's long term capital outflows exceeded capital inflows in 1992 period and net capital outflows enlarged year by year since 1992. Investment of Japan securities started to rise in 1993.¹¹⁷

¹¹⁷ Dipack R. Basu and Victoria Miroshnik, **Japanese Foreign Investments, 1970-1998: Perspectives and Analyses**, London, England: M.E Sharpe Publish, 2000, p.55.

Table 3.11
Net Foreign Portfolio Investment per Developed Countries

<u>Net Foreign Portfolio Investments</u>							
	2001	2002	2003	2004	2005	2006	2007
USA							
FDI	24,6	-70,1	-85,8	-170,2	76,4	0,8	-95,8
FPI	337,7	379	427,1	689,9	574,5	627,9	850,5
Other Investments	42,8	195,3	190,1	9,8	35,7	178,4	13,1
Reserve Assets	-4,9	-3,7	1,5	2,8	14,1	2,4	-0,1
<i>Total</i>	400,2	500,5	532,9	532,3	700,7	809,5	767,7
England							
FDI	-8	-24,8	-38	-20,3	103,9	56,6	-44,2
FPI	-55,1	77,4	97,2	-99,3	-51,2	-74,5	165,3
Other Investments	71,5	-41,9	-18,9	144,3	4,6	85,5	34,2
Reserve Assets	4,5	0,6	2,6	-0,4	-1,7	1,3	-2,6
<i>Total</i>	12,9	11,3	42,9	24,3	55,6	68,9	152,7
Japan							
FDI	-32,3	-22,9	-22,6	-23,2	-42,2	-57	-51,3
FPI	-46,3	-105,9	-95,1	22,9	-13,3	127,6	73,1
Other Investments	29	63	184	20,3	-60,7	-175,3	-211,7
Reserve Assets	-40,5	-46,1	-187,2	-160,9	-22,3	-32	-36,5
<i>Total</i>	-90,1	-111,9	-120,9	-140,9	-138,5	-136,7	-226,4
Canada							
FDI	-8,5	-4,7	-16,4	-43,3	-2,5	23,5	-42,2
FPI	-0,2	-6,7	0,3	22,9	-36,3	-41,3	-75,3
Other Investments	-2,9	-2,8	-1,9	-11	13,2	-0,2	1,7
Reserve Assets	-2,2	0,2	3,3	2,8	1,3	-0,8	-3,9
<i>Total</i>	-13,8	-14	-14,7	-28,6	-24,3	-18,8	-119,7
Europe							
FDI	-98,2	21,2	-12,2	-83,7	-270,5	-189,3	-161
FPI	63,3	135,2	65	91,9	170	341	306,6
Other Investments	-5,5	-160,9	-86,1	-36,7	108,9	-24,6	102,9
Reserve Assets	16,4	-3	32,8	15,6	22,9	-2,6	-6
<i>Total</i>	-24	-7,5	-0,5	-12,9	31,3	124,5	242,5

Source: Capital Markets Board of Turkey, March 2009 (billions of US dollars)

Over the past decade, liquidity expansion and low interest rate have caused a rapid growth of lending in property markets in developed markets, especially in United States of America. High risk prime mortgages became a source of global instability.¹¹⁸

In the last quarter of 2008 year, stagnation appeared in developed countries began to consist of emerging countries and turned into global slowdown. This situation caused to increase of risk premium of emerging countries rapidly. Emerging markets bond index (EMBI+) increase especially accelerated Lehman Brothers international investment bank liquidation in September 2008. At the end of 2007 year, emerging market bond index was 239 base puan, but at 24 October 2008, EMBI+ index increased 865 base puan and regressed slightly in forward period.¹¹⁹

3.3. Net Foreign Portfolio Investment in ISE

3.3.1. Financial and Capital Market Developments Effecting Foreign Portfolio Investment in Turkey

Until 1980s, Turkey followed inward-oriented industrialization strategy (import-substitution industrialization strategies) with high protection rates for consumer goods and overvalued exchange rate. The overvaluation of domestic currency penalized exports while imported capital goods prices remained low. Foreign currency reserves declined drastically, leading Turkish economy severe circumstances since 1975. The economic crises of 1978-1979 were the worst economic experience.¹²⁰ Because of arising balance of payment problems, reforms based on foreign trade and capital liberalization programs were required. The most important step related with financial liberalization process is establishment of Istanbul Stock Exchange by setting free the interest rate.¹²¹

¹¹⁸ United Nations, **World Economic Social Survey 2008, Dealing with Macroeconomic Insecurity**, 2008, p.22.

¹¹⁹ Türkiye Cumhuriyeti Merkez Bankası, **Ödemeler Dengesi Raporu**, 2008 IV, p.22.

¹²⁰ Nurhan Yentürk, "Short-Term Capital Inflows and Their Impact on Macroeconomic Structure: Turkey in the 1990s", **Institute of The Developing Economies Journal**, Vol.37, Issue 1 (March 1999), p.89.

¹²¹ Ferit Kula, "Uluslararası Sermaye Hareketlerinin Etkinliği: Türkiye Üzerine Gözlemler", **İktisadi ve İdari Bilimler Dergisi**, Cilt 4, Sayı 2 (2003), s.145.

Since the 1980s, The Turkish economy made many changes related with its structural policies and was influenced by the socio-political conditions in the country. Government policies applied the export-oriented development process called “Free Market Economy” rather than the inward-oriented import substitution called “Mixed Economy”.¹²² Therefore, the financial markets and the capital account were gradually liberalized. The positive effect of these reforms reflected in the increase of the foreign direct investment inflows to the country in the second half of the 1980s. However, the level of portfolio flows remained low compared to other countries with a similar framework.

In 1984-1987 periods, yearly growth rate being %6.4 decreased to %1.6 in 1988-1989 period and net capital entry decreased to less than 1 million dollar. In 1989, financial liberalization in Turkey caused liquidity injection in the form of short term foreign portfolio flows into the domestic asset market. After 1989, the performance of the economy in macroeconomic level was very sensitive to net capital inflows and outflows. Dollar was begun to use and demand to Turkish Liras was declined. Also, flexible foreign exchange policy was applied. Because financial, institutional and infrastructure conditions were not provided attractive environment for foreign direct investment, foreign financial system was developed based on capital movements that ordered with debt-specified financial instruments.

In 1990, while bank intermediation activities for financing the public sector deficits with internal debts had developed very quick, delays in implementation of structural reforms the economy needed in the banking industry and in public finances played the role of catalyst for the crises. Banks opened the foreign currency position and developed off-balance sheet repo transactions with short term external debts. By the way, because internal debt maturity was shortened, banks’ risk was cumulated and risk premium of internal debt interest rates was raised in Turkey.¹²³

¹²² Merih Uçtum and Remzi Uçtum, “Portfolio Flows, Foreign Direct Investment, Crises and Structural Changes in Emerging Markets: Evidence from Turkey”, 2005, userhome.brooklyn.cuny.edu/economics/muctum/Papers/TR.doc (10 September 2008), p.4.

¹²³ Merih Celasun, pp.6-8.

At the beginning of the 1990s, capital inflows towards Turkey took the form of portfolio investment and short term inflows as in Latin America.¹²⁴ High interest rate and low foreign exchange rate policies encouraged portfolio inflows and tried to finance public deficits. High real interest rate policy application causes to real economy deterioration. If the expectations about financial instability increase, foreign portfolio outflows reached to high portions.¹²⁵ Capital inflows, high inflation and a pegged exchange rate regime led to substantial loss in competitiveness. High interest spread caused by government's financing needs and low exchange rate risk led domestic banks to borrow from abroad and lend to the government. With a currency regime following a crawling-peg, banks' demand for foreign reserves increased. The resulting decline in central bank reserves induced a full-fledged attack on Turkish lira in the first quarter of 1994. The "hot money" policy applications based on high real interest rate and increasing banking deficits are the main reasons of the 1994 crisis. This crisis was short lived and resulted in a relatively mild reversal in the flows. Foreign portfolio investment continued in a relatively stable fashion until the end of the decade.

1991 and 1994 years are two most crucial breaking points. In those years, foreign portfolio outflows are higher than foreign portfolio inflows. In 1990, short term capital inflows and overvalued Turkish liras, but in 1992, short term cash outflows and undervalued Turkish liras are the important issues because of Gulf war. Huge volume of cash outflows in 1994 was caused from national economic crises when we compared with cash outflows in 1991. Before the 1991 crises, Turkish Liras was overvalued because of the cash inflows between the 1990-1993 periods. This valuation made bank's lending from international finance market and investing high yield public funds, or giving credit into the domestic market attractive. With increased credits, while domestic market refreshment increased consumption and import of raw material goods, overvalued Turkish Liras made difficult export.

As a result, balance deficit reached to \$ 6.4 million and capital flows became important in finance of balance deficit. Applications including policies related with

¹²⁴ Nurhan Yentürk, p.92.

¹²⁵ Nejla Adanur Aklan, "Uluslararası Sermaye Akımları: Etkileri, Sterilizasyon Politikaları ve Değişen Yapısı", **Uludağ Üniversitesi Sosyal Bilimler Dergisi**, sbe.balikesir.edu.tr/dergi/edergi/c5s7/makale/c5s7m3.pdf (15 April 2009), p.45.

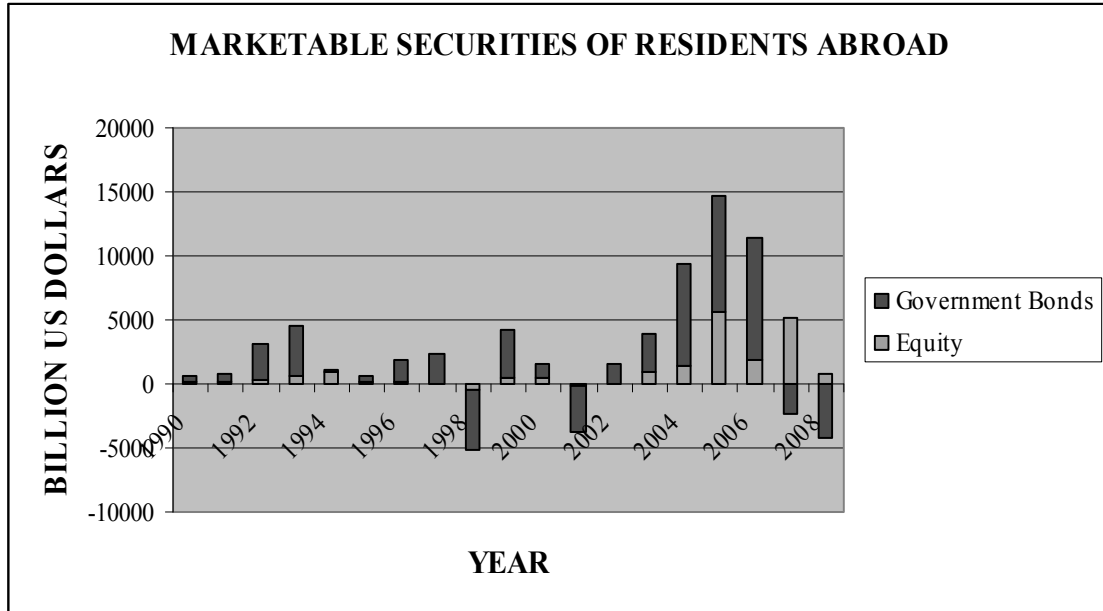
decreasing interest rates in which markets will come to balance by official rules, injection liquidity and applying tax over the public notes, expectations about overvalued Turkish Liras had increased. In 1994, the differences between official and market foreign exchange rates begun to enlarge. Turbulence in foreign exchange rate continued until April 1994 and Central Bank announced not to intervene to interest rates. In this sense, Turkish liras were overvalued with the effect of the cash outflows. Because of the fluctuations of foreign exchange rates and devaluation expectations, banks demand increased to close their open positions. Interest rates increased in which banks begun to correspond Turkish Liras needs among the banks' market getting available to buy the foreign currency. In this sense, banking sector diminished in 1994. After 1994 crises, short term capital movements raised.¹²⁶

1997 Asian crises and 1998 Russian crises had also affected Turkey realizing foreign portfolio outflows. In 1999, IMF program called "Inflation Decreasing Program" was applied. Main purpose of the program is to decrease both inflation and real interest rates by creating stable macroeconomic environment in order to improve the long term growth potential. Since 2000, currency peg was applied, but during mid 2001, flexible exchange rates regime policies executed. In the first 10 months of 2000, real interest rates reached to zero with the effects of the cash inflows. At the end of 2000 year, because of increase of petroleum prices and commodity goods imports created problems especially in banking sector causing capital outflows (November 2000 crises). The most crucial criticism of 2000 inflation decreasing program is not given attention to banking sector that became vulnerable and depends on short term capital movements to create liquidity. Financial liberalization caused domestic interest rates to be dependent on foreign investments.¹²⁷

¹²⁶ Şeyda İnandım, "Kısa Vadeli Sermaye Hareketleri ile Reel Döviz Kuru Etkileşimi: Türkiye Örneği", **Türkiye Cumhuriyeti Merkez Bankası**, Kasım 2005, pp.57-64.

¹²⁷ Şeyda İnandım, pp.57-64.

Graph 3.28
Marketable Securities of Residents Abroad (1990-2008)



Source: Central Bank of Turkish Republic, 2008

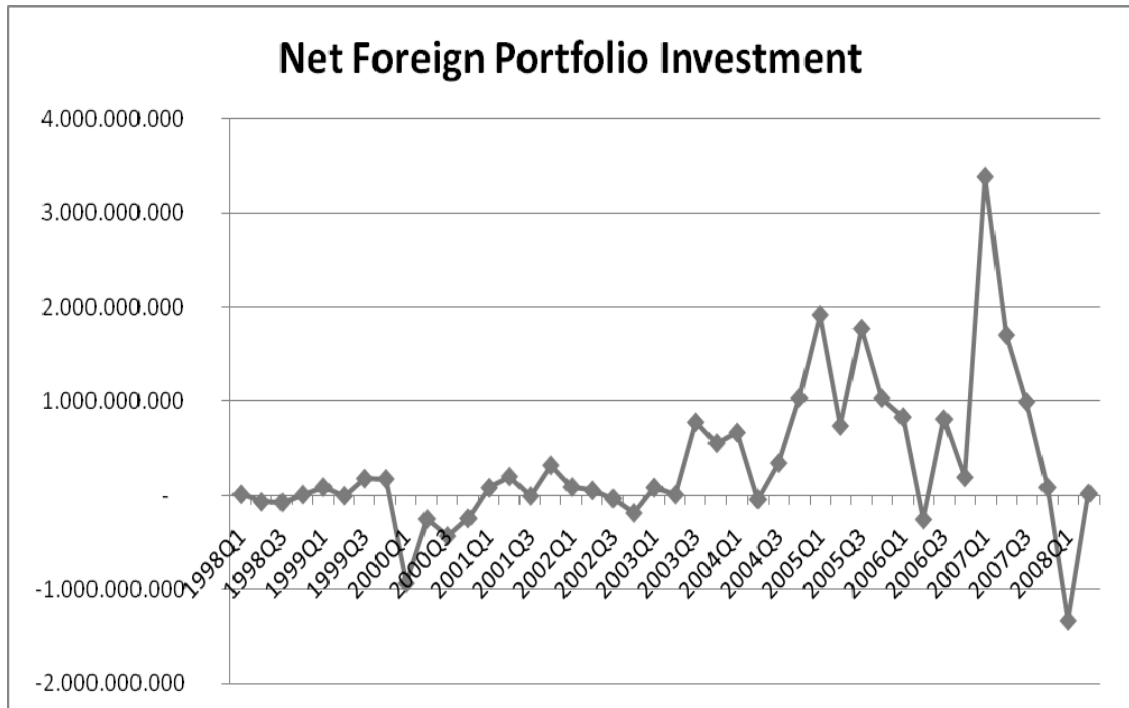
During 1998-2000 periods, there are effects of overvalued Turkish Liras related with the government policy to attract foreign portfolio investment. Also open market transactions were used to finance liquidity bottleneck based on finance need in public sector (Open market transactions refer to Central Bank's repo, reverse repo, put and call option purchases in consideration of domestic government bonds).¹²⁸ Therefore, Turkey had suffered from an excess of speculative capital inflows in this period. In 1998 crises, Turkey was affected like all other emerging countries, because investors begun to pull back from the market.¹²⁹ Therefore, during 1998-2001 periods, NFPI was reversed in which Turkey was badly hit by the emerging market crisis following the Russian default in 1998. As it was seen from the graph, NFPI had fluctuated between 1998 and 2001 periods. (Graph 3.29)¹³⁰

¹²⁸ Nejla Adanur Aklan, pp.49-50.

¹²⁹ Melike Altinkemer, "Capital Inflows and Central Bank's Policy Response", **Central Bank of the Republic of Turkey World Bank Project**, (December 1998), pp.3-5.

¹³⁰ Erol Balkan, F. Gül Biçer and Erineç Yeldan, "Patterns of Financial Capital Flows and Accumulation in the Post-1990 Turkish Economy", **METU International Conference on Economics**, VI, Ankara, September 2002, p.4.

Graph 3.29
NFPI Istanbul Stock Exchange (1998Q1-2008Q2)

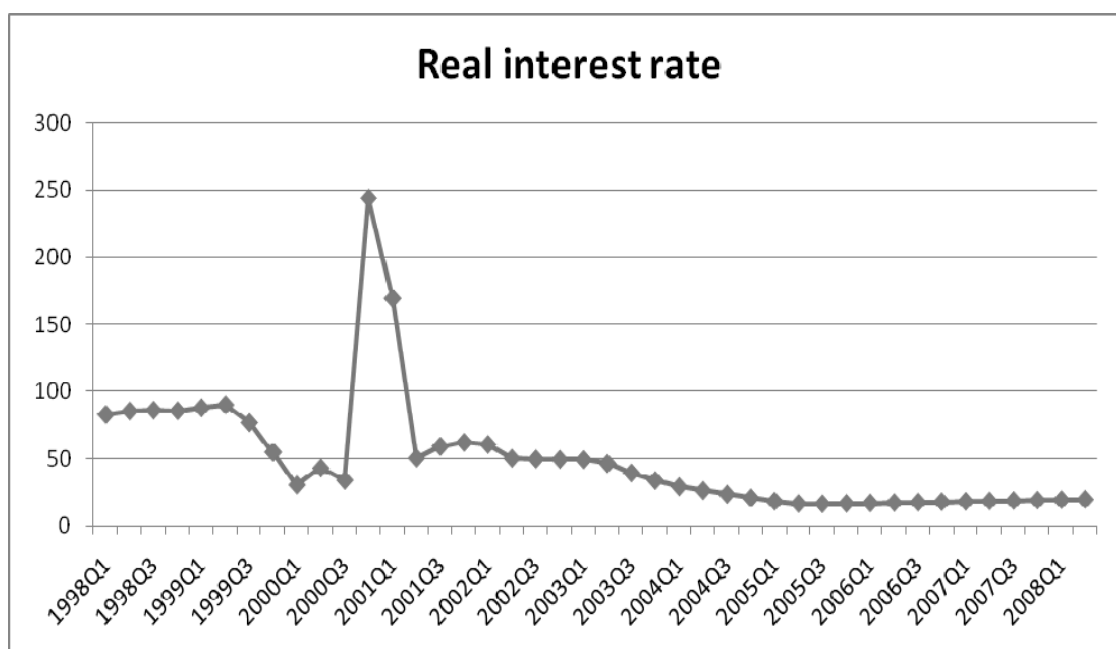


Source: Numeric data was used from Capital Markets Board of Turkey, (2008)

By the way, the twin crises of 2000 first quarter were caused by internal factors and resemble to the 1994 crisis. As a result of wrong policy incentives and a deficient corporate governance system, banks continued to borrow short from abroad in foreign currency and invest in high yielding government bonds with relatively longer maturities. Therefore, currency was mismatched and this created a liquidity risk. Delays in banking sector reforms, lax fiscal policy and a currency appreciating in real terms severely weakened the banking system, created an unsustainable current account deficit and, eventually, caused an outflow of portfolio investment depreciating the Turkish lira. Capital outflows contributed to further depreciation of the currency and anxiety in the markets, which triggered a banking crisis at the end of 2000. The real interest rates had increased following the liquidity squeeze, and the Turkish lira was floated in January 2001. (Graph 3.30)¹³¹

¹³¹ Merih Uçtum and Remzi Uçtum, pp.4-5.

Graph 3.30
Real Interest Rate per Quarters (1998-2008)



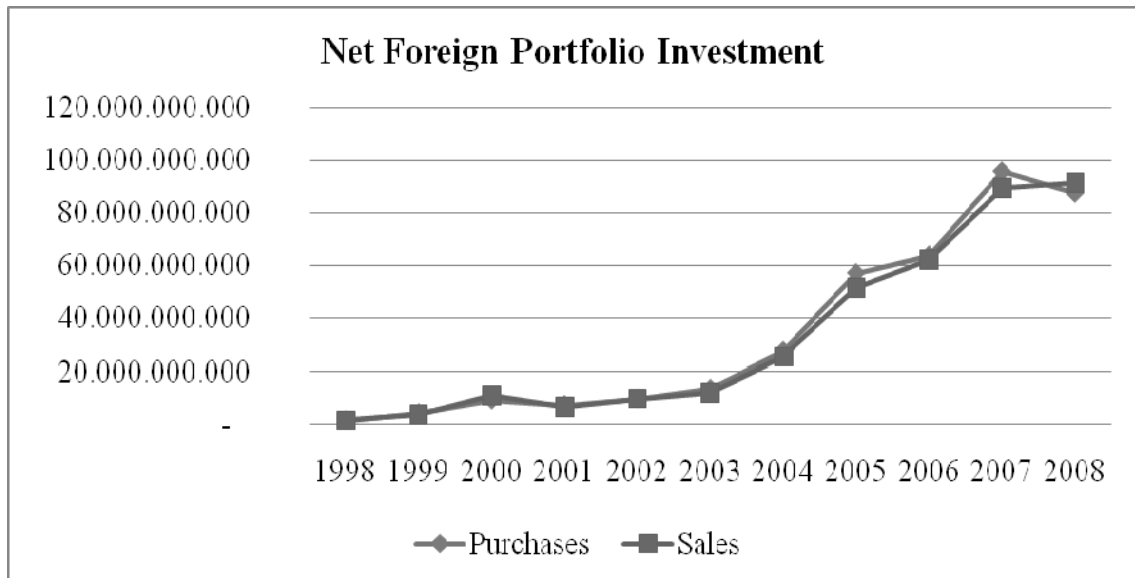
Source: Numeric data was used from Capital Markets Board of Turkey, 2008

After the most severe circumstances in 2001, fundamental fiscal, monetary and institutional reforms were implemented. In the period of 2002-2007, Turkey achieved 7 percent growth by the negotiations with European Union. During the same period, accelerated portfolio inflows attracted by high real interest rates, increased the exchange rate. (Graph 3.29, 3.30)¹³²

Net traded value (purchases minus sales) amounted 1.580.598.497 YTL at the end of the 2006 year and described as difference of foreign assets of Turkey and liabilities to foreign countries of Turkey, at the end of the 2007 year realized as 6.166.174.873 YTL with the net liability increase amount 32 billion YTL. At the end of the 2007 year, realized purchases and sales on behalf and account of foreign banks and brokerage houses or individuals were 95.66 billion YTL and 89.50 billion YTL respectively.

¹³² OECD, **OECD Economic Survey: Turkey**, Vol.2008, Issue 14, July 2008, p.12.

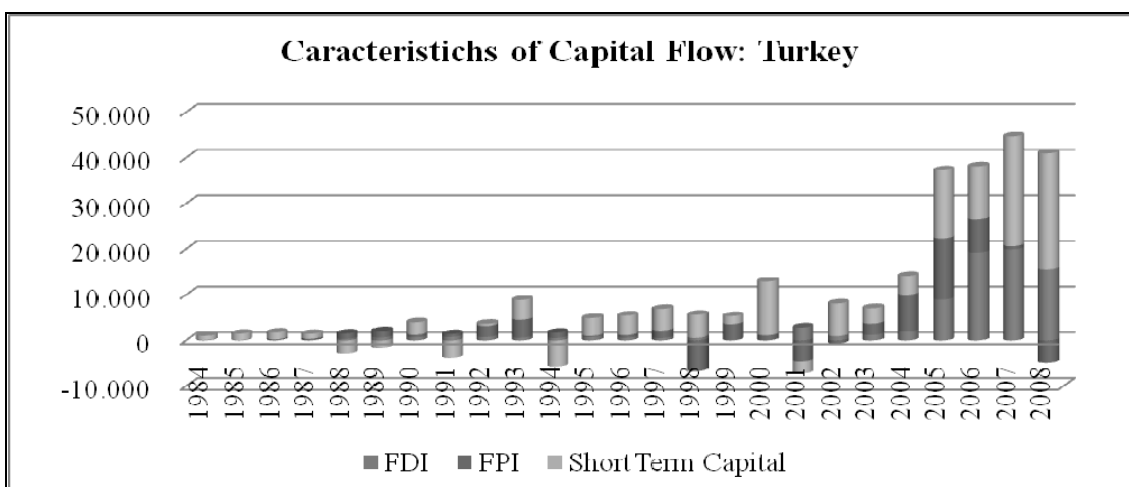
Graph 3.31
Transactions Realized on Behalf and Account of Foreign Banks/Brokerage Houses
or Individuals between 1998 and 2008 (Billion YTL)



Source: Numeric data was used from Central Markets Board of Turkey, 2008

NFPI had increased from 1998 to 2007 years, but in 2008 because of the financial crisis there are more sales than purchases amounting 3.84 billion YTL in net. Cash inflows realized 63.7 billion YTL in the year of 2006 and rise to 95.66 billion YTL in 2007, where as in the year of 2008 decreased to 87.4 billion YTL (Graph 3.31).

Graph 3.32
Characteristics of Capital Flows: Turkey (Billions of US\$) (1984-2008)



Source: Numeric data was used from Central Bank of Turkish Republic, 2008

Risk perception in international credit markets had increased since August 2008. Global financial crisis influenced both emerging markets and rising risk premiums and making global capital access difficult. In this sense, portfolio based capital begun to dispose from Turkey in 2008.

As a result of financial liberalization, short term capital movement and foreign portfolio investments increased in Turkey (Graph 3.32). Capital movements toward developing countries show speculative and short term-base specialties

Sudden Stops of Capital Flows and Real Interest Rate Relation in Turkish Economy

Reserve is accumulated in the emerging markets because of the sudden loss of entry to international capital markets and the collapse of domestic production characterized the emerging markets crises of 1990s called as “sudden stops”.¹³³ In the emerging markets, during the sudden stops international reserves are depreciated and real interest rates reach to high level.¹³⁴ Turkish Central Bank has to decrease its reserves because of the 3 sudden stops. International reserves declined %53,5 in March 1994, %18,5 in June 1999 and %33 in June 2001 when compared with previous year. In 1994 and 2001, real interest rate had rocketed. Real interest rate increased %100 in 1994 and %296 in 2001 compared with previous year same period. On the other hand, during 1998 sudden stop real interest rate increase occurred with less portion and real interest rate reached to %22,5 in January 1999 based on Turkish Central Bank data.¹³⁵

Erol Balkan, Gül Biçer and Erinc Yeldan made a multiple regression analysis between portfolio investment and key macroeconomic variables. Index of the Istanbul Stock Exchange National 100 is used to capture the relationship. Based on this research,

¹³³ Laura Alfaro and Fabio Kanczuk, “Optimal Reserve Management and Sovereign Debt”, **National Bureau of Economic Research**, Working Paper Series, No: 13216 (July 2007), p.4.

¹³⁴ Guillermo A. Calvo, Alejandro Izquierdo and Luis-Fernando Mejia, “On the Empirics of Sudden Stops: The Relevance of Balance-Sheet Effects”, **Inter-American Development Bank**, Working Paper, No: 509 (March 2004), p.19.

¹³⁵ Cemil Varlık, “Reversals of Sudden Stops of Capital Flows in the Turkish Economy”, **Ege Academic Review**, 7 (1) 2007, pp.210-211.

real interest rates had not showed statistically significant results, while their coefficients were of the expected sign.¹³⁶

Vedat Pazarlıoğlu and Emrah Gülay investigated the relationship between the real interest rate and NFPI through 1992 to 2005 (quarterly data) using “Auto Regressive Lag” model and found that there is significant relationship between third lag real interest rate and NFPI.

3.3.2. Relationship between Real Interest Rate and Net Foreign Portfolio Investment

One of the most accepted issue in international finance literature is the relationship between capital movements and differences in interest rates between the countries. Capital flows are assumed to respond based on the changes in interest rate differentials within a portfolio.¹³⁷

The aspects of capital movement were changed with the collapse of Bretton Woods. The introduction of floating exchange rate, the significant inflation differences among the major developed countries and the recent threat of interest rate changed international pattern of capital flows.¹³⁸

Domestic developments, such as applied policies and stronger economic performance, initially attributed to rise of capital inflows. There were important global factors affecting countries with very diverse characteristics. During this time, short-term real interest rates in the United States decreased sharply and by late 1992 they were at their lowest level since the early 1960s. In addition, a recession in several industrial countries made profit opportunities in emerging countries more attractive. The lower real interest rates also improved the creditworthiness of debtor countries, reducing default risk.

¹³⁶ Erol Balkan, F.Gül Biçer and Erinc Yeldan, pp.7-16.

¹³⁷ Stephen E. Haynes, “Identification of Interest Rates and International Capital Flows”, **The Review of Economics and Statistics** (2001), p.103.

¹³⁸ Lawrence L. Kreicher, “International Portfolio Capital Flows and Real Rates of Interest”, **The Review of Economics and Statistics**, The MIT Press, Vol. 63, No.1 (February 1981), p.20.

Tightening of monetary policy applications in the United States of America and the resulting increase in interest rates in early 1994 had affected emerging country debt prices. Also, capital flows became more sensitive to interest rate changes than in the past because of the rising importance of portfolio flows. Actually, the increase in U.S. rates triggered marked corrections in several emerging stock markets.¹³⁹

Based on the analysis of Lawrence Kreicher, international portfolio flows in which the countries are USA, United Kingdom, Italy and West Germany, are very sensitive to changes in the international movements of real interest rate.

According to Merih Uçtum and Remzi Uçtum analysis based on cash flows in Turkey and relations with real interest rate, when everything else being constant, negative relation between the real interest rate and portfolio flows were expected. The Treasury-bill rate, adjusted for inflation, was relatively stable until 1990, with a positive trend in 1990-94. However, it increased in 1994 as a result of Central Bank's effort to fight capital outflows reacting to the crisis. During the second half of the 1990s, the real interest rate fluctuated around a higher mean, and declined at the end of the decade as a result of a decline in the risk premium. After 2000, the real interest rates climbed up, reflecting tight credit conditions in the domestic markets and a scarcity of foreign capital instigating the twin crises, and then declined as confidence was restored and capital flows resumed.

According to Mark Taylor, real interest rates are a more important factor affecting foreign portfolio flows into emerging countries. Based on Guillermo Calvo, Fernandez-Arias and Carmen Reinhart researches, fall in international real interest rate, in addition to reducing the rates of return in developed countries, was the dominant cause of driving the capital flows into emerging markets. On the other hand, Geert Bekaert and Campbell Harvey do not find a significant influence on portfolio flows to emerging markets from an unexpected reduction in international interest rate.

¹³⁹ Guillermo A. Calvo, Leonardo Leiderman and Carmen M. Reinhart, "Inflows of Capital to Developing Countries in the 1990s: Causes and Effects", **Inter-American Development Bank**, Working Paper 302 (1996), p.1.

4. AN EMPRICAL RESEARCH in ISTANBUL STOCK EXCHANGE

4.1. Data and Variable Selection

NFPI is calculated by subtracting traded values as of YTL sales from the purchases. Stock Market Transactions Realized on Behalf and Account of Foreign Banks and Brokerage Houses or Individuals transactions data is taken from the Istanbul Stock Exchange's web site¹⁴⁰ and NFPI is calculated quarterly between the years 1998 and 2008. The real interest rate data is taken from Turkish Central Bank of Electronic Data System.¹⁴¹ The interest rate series used in the analysis is the three-month overnight weighted average interest rates. Data used in this thesis covers 126 months beginning from the January 1998 and ending at June 2008 which is presented in quarter periods. The below table includes the data that is used.

¹⁴⁰ <http://www.ise.org/data.htm#foreign>

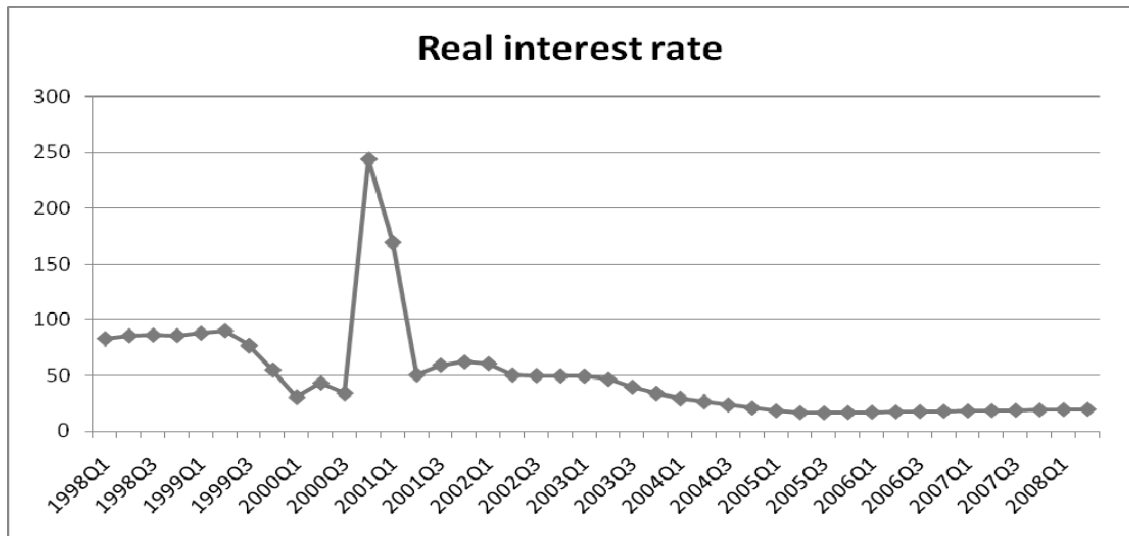
¹⁴¹ <http://evds.tcmb.gov.tr/yeni/cbt-uk.html>

Table 4.1
NFPI and Real Interest Rate Data (1998-2008)

Quarters	NFPI	real interest rate as of %
1998Q1	13.239.110	82,89
1998Q2	(65.719.636)	85,46
1998Q3	(71.657.886)	86,05
1998Q4	10.122.703	85,69
1999Q1	89.953.258	87,80
1999Q2	(2.413.123)	90,08
1999Q3	180.038.845	76,82
1999Q4	175.077.026	54,86
2000Q1	(930.577.264)	30,43
2000Q2	(248.429.164)	42,99
2000Q3	(428.316.618)	33,87
2000Q4	(242.566.779)	244,24
2001Q1	82.906.316	169,40
2001Q2	201.171.026	50,46
2001Q3	(4.599.909)	59,20
2001Q4	320.851.231	62,12
2002Q1	90.834.274	60,63
2002Q2	55.057.227	50,29
2002Q3	(31.573.670)	49,74
2002Q4	(184.050.935)	49,50
2003Q1	85.121.099	49,28
2003Q2	9.696.884	46,39
2003Q3	777.445.857	39,36
2003Q4	555.814.229	33,80
2004Q1	667.633.623	29,15
2004Q2	(41.551.076)	26,35
2004Q3	345.097.980	23,57
2004Q4	1.033.757.545	20,78
2005Q1	1.916.712.937	18,30
2005Q2	739.170.298	16,60
2005Q3	1.771.329.721	16,39
2005Q4	1.032.720.411	16,69
2006Q1	831.151.724	16,99
2006Q2	(254.095.840)	17,30
2006Q3	810.390.144	17,60
2006Q4	193.152.469	17,90
2007Q1	3.384.590.380	18,20
2007Q2	1.702.973.509	18,50
2007Q3	992.589.882	18,80
2007Q4	86.021.102	19,10
2008Q1	(1.329.904.372)	19,41
2008Q2	21.203.066	19,71

The graphs of the data shows the volatility more precisely.

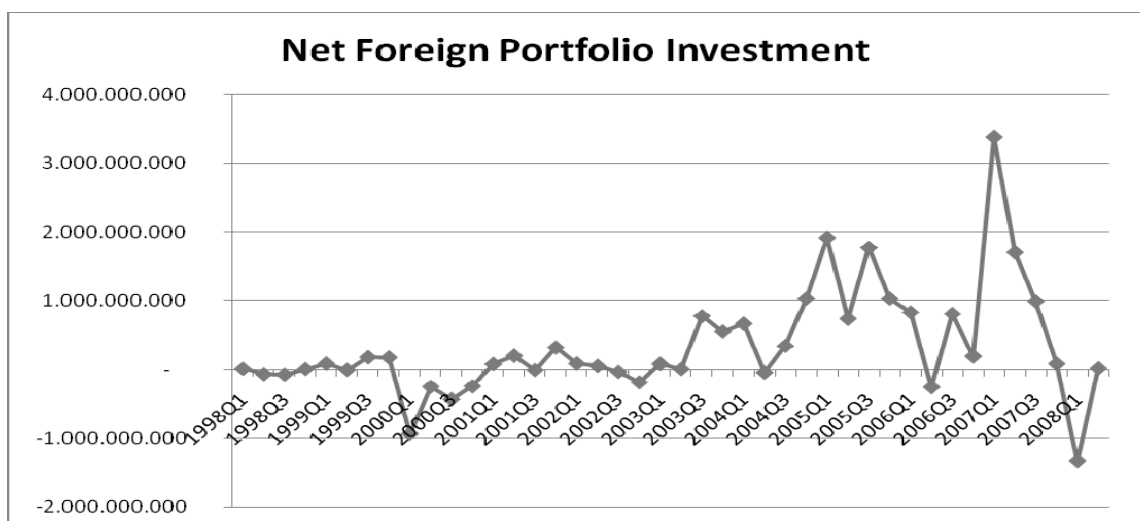
Graph 4.1
Real Interest Rate per Quarters (1998-2008)



Source: Numeric data was used from Capital Markets Board of Turkey, 2008

As it is seen clearly, after 2000, the real interest rates in Turkey climbed up sharply for 2 quarters because of the tight credit conditions in the domestic market and scarcity of foreign capital instigating the twin crises. From 2001 second quarter real interest rate begun to decline as confidence was restored and capital flows resumed.

Graph 4.2
Net Foreign Portfolio Investment (1998Q1 – 2008Q2)



Source: Numerical data was taken from Capital Markets Board of Turkey

On the above graph, we see the sharp decline of NFPI one quarter before increases of the real interest rates in 2000, during the financial crisis in Turkey. After the second quarter of 2003, NFPI became more volatile with sharp increases and sharp decreases quarterly. Moreover, we see the decrease in the first quarter of 2008, just before the February 2008 crisis in Turkey. The graph simply shows the behavior of foreign investors in ISE and how they make purchases in huge amounts one quarter just before the crises. It also shows the purchases were made during the crises periods when the stock prices were low.

4.2. Methodology

According to the literature on the determinants of FPI, international capital movements differ based on indigenous and exogenous determinants. Schadler (1993) and Hernandez & Rudolph (1995) feel that endogenous factors such as improving economic conditions and macroeconomic policies pull investment toward emerging markets. On the other hand, Calvo, Leiderman and Reinhart (1992) and Fernandez-Arias and Montiel (1995) ascertain that exogenous factors such as slow economic growth and low interest rates in the emerging countries cause investors to seek opportunities elsewhere. Taylor and Sarno (1997), who extend the work of Fernandez-Arias and Montiel, found evidence that both exogenous and endogenous factors are involved. Therefore, in this thesis the real interest rate (overnight average interest rate) determinant as a macroeconomic factor was used to test the influence on NFPI for Istanbul Stock Exchange.

Linear regression analysis was made because of the one regressor, the real interest rate. Time series regression using autocorrelation was used and data covered the years 1998 through 2008. The model in the thesis is;

$$NFPI = f(r)$$

$$NFPI = \alpha + \beta * r$$

“ α ” is constant, r is the independent variable and NFPI is the dependent variable.

“Durbin Watson test statistic” was made to test the residuals from an ordinary least-square regression are not autocorrelated against alternative. Because of the dependence of any computed Durbin-Watson value on the associated data, upper and lower bounds in the Durbin-Watson table was used for the critical values. If the observed value of the test statistic is less than the tabulated lower bound, null hypothesis of non-autocorrelated errors were rejected. If the test statistic value were greater than upper level, null hypothesis was not rejected. If the Durbin Watson test statistic lies between the lower and upper bound level, the test is inconclusive.

In order to test the lag effect of real interest rate over NFPI dependent variable, previous quarter real interest rate data was used in the regression analysis for the long term time series.

4.3. Findings of the Regression Analysis

4.3.1. Periods between 1998Q1 – 2008Q2

Correlation between NFPI and real interest rate for first quarter of 1998 and second quarter of 2008 periods is significant at the 0.05 level (Table 4.2).

Table 4.2
Correlation between 1998Q1 – 2008Q2

		NFPI	Real interest rate
Net foreign portfolio investment	Pearson Correlation	1	-,311(*)
	Sig. (2-tailed)		0,045
	N	42	42
Real interest rate	Pearson Correlation	-,311(*)	1
	Sig. (2-tailed)	0,045	
	N	42	42

(*) Correlation is significant at the 0.05 level (2- tailed)

As the time series were used in the analysis, Durbin Watson test was also done in order to check the auto-correlation of variable data so that the significance of the research is acceptable statistically.

Durbin Watson test statistics: The sample size is 42, there are 1 regressor and an intercept term in the model. The Durbin-Watson test statistic value is 1.321. I want to test the null hypothesis of zero autocorrelation in the residuals against the alternative that the residuals are positively autocorrelated at the 5% level of significance. In the Durbin Watson table, $dL = 1.45615$ and $dU = 1.55340$. Observed value of the test statistic is less than the tabulated lower bound, so the null hypothesis of non-autocorrelated errors in favor of the hypothesis of positive first-order autocorrelation should be rejected. Since 1.321 is less than 1.45615, we reject the null hypothesis which is formulized as $H_0 =$ There is autocorrelation. Therefore, there is no autocorrelation in the model for January 1998 and June 2008 periods. If the test statistic value were greater than dU , we would not reject the null hypothesis (Table 4.3).

Table 4.3
Model Summary of Dependent Variable NFPI between 1998Q1 – 2008Q2

R	R Square	Adjusted R Square	Change Statistics					Durbin-Watson
			Sig. F Change	R Square Change	F Change	df1	df2	
,311(a)	0,097	0,074	0,097	4,283	1	40	0,045	1,321

a. Predictors: (Constant), Real interest rate

A third outcome is also possible. If the test statistic value lies between dL and dU , the test is inconclusive. In this context, you might err on the side of conservatism and not reject the null hypothesis.

R Square: Independent variable (real interest rate) with %9,7 proportion explains NFPI, dependent variable. So, R-square tells that only %9,7 of NFPI can be explained by the real interest rates in the country.

The same relationship between the variables was also detected by ANOVA test. Sig value (0.045) is below 0.05 for %95 confidence. Therefore, the model as a whole is significant also according to ANOVA test. Dependent variable, NFPI, can be explained by independent variable (Table 4.4).

Table 4.4
ANOVA Test of Dependent Variable NFPI for 1998Q1 – 2008Q2 Periods

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2.524.315.301.928.230.000	1	2.524.315.301.928.230.000	4,283	,045(a)
Residual	23.573.591.051.283.500.000	40	589.339.776.282.089.000		
Total	26.097.906.353.211.800.000	41			

a. Predictors: (Constant), Real interest rate

Sig value for constant is 0.001 and for real interest rates is 0.045. Sig value is less than 0.05, so we can assume that estimate in Beta can be asserted as true with %95 level of confidence (Table 4.5).

So that the function is as: $NFPI = 620.374.927 - 5.652.225 \cdot \text{real interest rate (r)}$

Table 4.5
Coefficients of NFPI-Dependent Variable between 1998Q1-2008Q2

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	620.374.927	179.435.048		3,457	0,001
Real interest rate	-5.652.225	2.731.055	-0,311	-2,070	0,045

4.3.2. Periods between 1998Q1 – 2007Q4

In order to eliminate 2008 financial crisis and volatility of the cash flows because of the effects of global financial impacts, real interest rate and NFPI variables were used for the first quarter of 1998 and last quarter of 2007 in this set of model. Also, this model will be compared with lag real interest rate effects on NFPI analysis. Correlation between NFPI and real interest rate for first quarter of 1998 and last quarter of 2008 periods is significant at the 0.05 level (Table 4.6).

Table 4.6
Correlation between 1998Q1 – 2007Q4

		NFPI	Real interest rate
NFPI	Pearson Correlation	1	-,381(*)
	Sig. (2-tailed)		0,015
	N	40	40
Real interest rate	Pearson Correlation	-,381(*)	1
	Sig. (2-tailed)	0,015	
	N	40	40

(*) Correlation is significant at the 0.05 level (2- tailed)

Durbin Watson test statistics: The sample size is 40, there are 1 regressor and an intercept term in the model. The Durbin-Watson test statistic value is 1.424. In order to test the null hypothesis of zero autocorrelation in the residuals against the alternative that the residuals are positively autocorrelated at the 5% level of significance, Durbin Watson test statistics was used. In the Durbin Watson table, $dL = 1.44214$ and $dU = 1.54436$. Observed value of the test statistic is less than the tabulated lower bound, so the null hypothesis of non-autocorrelated errors in favor of the hypothesis of positive first-order autocorrelation should be rejected. Since 1.424 is less than 1.44214, we reject the null hypothesis which is formulized as $H_0 =$ There is autocorrelation. Therefore, there is no autocorrelation in the model for the first quarter of 1998 and last quarter of 2007 periods (Table 4.7).

Table 4.7
Model Summary of Dependent Variable NFPI between 1998Q1 – 2007Q4

R	R Square	Adjusted R Square	Change Statistics					Durbin-Watson
			Sig. F Change	R Square Change	F Change	df1	df2	
,381(a)	0,145	0,123	0,145	6,466	1	38	0,015	1,424

a. Predictors: (Constant), Real interest rate

R Square: Independent variable (real interest rate) with %14.5 proportion explains NFPI, dependent variable. So, R-square tells that only %12.3 of NFPI can be explained by the real interest rates in the country.

The same relationship between the variables was also detected by ANOVA test. Sig value (0.015) is below 0.05 for %95 confidence. Therefore, the model as a

whole is significant also according to ANOVA test. Dependent variable, NFPI, can be explained by independent variable (Table 4.8).

Table 4.8
ANOVA Test of NFPI Dependent Variable for 1998Q1 – 2007Q4 Periods

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3.359.584.892.047.160.000	1	3.359.584.892.047.160.000	6,466	,015(a)
Residual	19.743.229.047.536.400.000	38	519.558.659.145.695.000		
Total	23.102.813.939.583.600.000	39			

a. Predictors: (Constant), Real interest rate

Sig value for constant is 0.000 and for real interest rates is 0.015. Sig value is less than 0.05, so we can assume that estimate in Beta can be asserted as true with %95 level of confidence (Table 4.9).

So that the function is as: $NFPI = 726.714.884 - 6.598.944 \cdot \text{real interest rate (r)}$

Table 4.9
Coefficients of NFPI-Dependent Variable between 1998Q1-2007Q4

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	726.714.884	174.342.027		4,168	0,000
Real interest rate	-6.598.944	2.595.069	-0,381	-2,543	0,015

It can be seen from the analysis that 1998-2007 period is statistically more significant than 1998-2007 period. Risk perception in international markets had increased in 2008. Global financial crisis influenced İstanbul Stock Exchange and rising risk premiums and making global capital access difficult. In this sense, portfolio based capital begun to dispose from Turkey in 2008.

4.3.3. Periods between 2000Q2-2001Q2: Financial Crisis in Turkey

Correlation between NFPI and real interest rate for second quarter of 2000 and second quarter of 2001 financial crises periods is not statistically significant at the 0.05 level seen in table 4.10.

Table 4.10
Correlation between 2000Q2 – 2001Q2

		NFPI	Real interest rate
NFPI	Pearson Correlation	1	,087
	Sig. (2-tailed)		0,890
	N	5	5
Real interest rate	Pearson Correlation	,087	1
	Sig. (2-tailed)	0,890	
	N	5	5

4.3.4. Periods between 2001Q3-2004Q4: Economically Stable years after the February 2001 Financial crisis

Those periods were analyzed separately as they were seemed to be the most stable economic years and to ascertain the real interest rate effects on NFPI independent variable in limited time period.

Correlation between net foreign portfolio investment (NFPI) and real interest rate for the third quarter of 2001 and fourth quarter of 2004 periods is significant at the 0.05 level (Table 4.11).

Table 4.11
Correlations between 2001Q3 – 2004Q4

		NFPI	Real interest rate
NFPI	Pearson Correlation	1	-,576(*)
	Sig. (2-tailed)		0,031
	N	14	14
Real interest rate	Pearson Correlation	-,576(*)	1
	Sig. (2-tailed)	0,031	
	N	14	14

(*) Correlation is significant at the 0.05 level (2- tailed)

Durbin Watson test statistics: The sample size is 14, there are 1 regressor and an intercept term in the model. The Durbin-Watson test statistic value is 1.712. The null hypothesis of zero autocorrelation in the residuals against the alternative that the residuals are positively autocorrelated at the 5% level of significance should be tested. In the Durbin Watson table, $dL = 1.04495$ and $dU = 1.35027$. Observed value of the test statistic is greater than the upper bound (dL), so the null hypothesis cannot be rejected.

Therefore, there is autocorrelation in the model for the third quarter of 2001 and last quarter of 2004 periods (Table 4.12).

Table 4.12
Model Summary of NFPI-Dependent Variable between 2001Q3 – 2004Q4

R	R Square	Adjusted R Square	Change Statistics					Durbin-Watson
			Sig. F Change	R Square Change	F Change	df1	df2	
,576(a)	0,332	0,276	0,031	,332	5,954	1	12	1,712

a. Predictors: (Constant), Real interest rate

4.3.5. Periods between 2005Q1-2007Q4: Economically stable years just before February 2008 Financial Crisis

Correlation between NFPI and real interest rate for the first quarter of 2005 and fourth quarter of 2007 periods which are economically stable years are not statistically significant at the 0.05 level (Table 4.13).

Table 4.13
Correlation of NFPI - Dependent Variable between 2005Q1 – 2007Q4

		NFPI	Real interest rate
NFPI	Pearson Correlation	1	,076
	Sig. (2-tailed)		0,815
	N	12	12
Real interest rate	Pearson Correlation	,076	1
	Sig. (2-tailed)	0,815	
	N	12	12

4.3.6. Periods between 1998Q1-2007Q4

Correlation between net foreign portfolio investment (NFPI) and real interest rate for the first quarter of 1998 and last quarter of 2007 periods is significant at the 0.05 level seen in table 4.14.

Table 4.14
Correlation of NFPI - Dependent Variable between 1998Q1 – 2007Q4

		NFPI	Real interest rate
NFPI	Pearson Correlation	1	-,381(*)
	Sig. (2-tailed)		0,015
	N	40	40
Real interest rate	Pearson Correlation	-,381(*)	1
	Sig. (2-tailed)	0,015	
	N	40	40

Durbin Watson test statistics: The sample size is 40, there are 1 regressor and an intercept term in the model. The Durbin-Watson test statistic value is 1.424. I want to test the null hypothesis of zero autocorrelation in the residuals against the alternative that the residuals are positively autocorrelated at the 5% level of significance. In the Durbin Watson table, $dL = 1.44214$ and $dU = 1.54436$. Observed value of the test statistic is less than the tabulated lower bound, so the null hypothesis of non-autocorrelated errors in favor of the hypothesis of positive first-order autocorrelation should be rejected. Since 1.424 is less than 1.44214, we reject the null hypothesis which is formulized as $H_0 =$ There is autocorrelation. Therefore, there is no autocorrelation in the model for first quarter of 1998 and fourth quarter of 2007 periods.

Independent variable (real interest rate) with %14,5 proportions explains NFPI, dependent variable. Therefore, R-square tells that %14,5 of variation was explained. Adjusted R square shows that %12,3 of the variance was explained (Table 4.15).

Table 4.15
Model Summary of NFPI - Dependent Variable between 1998Q1 – 2007Q4

R	R Square	Adjusted R Square	Change Statistics					Durbin-Watson
			Sig. F Change	R Square Change	F Change	df1	df2	
,381(a)	0,145	0,123	0,145	6,466	1	38	0,015	1,424

Significance value tested with ANOVA is below 0.05 for %95 confidence. Therefore, the model as a whole is significant. Dependent variable, NFPI, can be explained by independent variable (Table 4.16).

Table 4.16
ANOVA of NFPI - Dependent Variable between 1998Q1 – 2007Q4

	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.359.584.892.047.160.000	1	3.359.584.892.047.160.000	6,466	,015(a)
Residual	19.743.229.047.536.400.000	38	519.558.659.145.695.000		
Total	23.102.813.939.583.600.000	39			

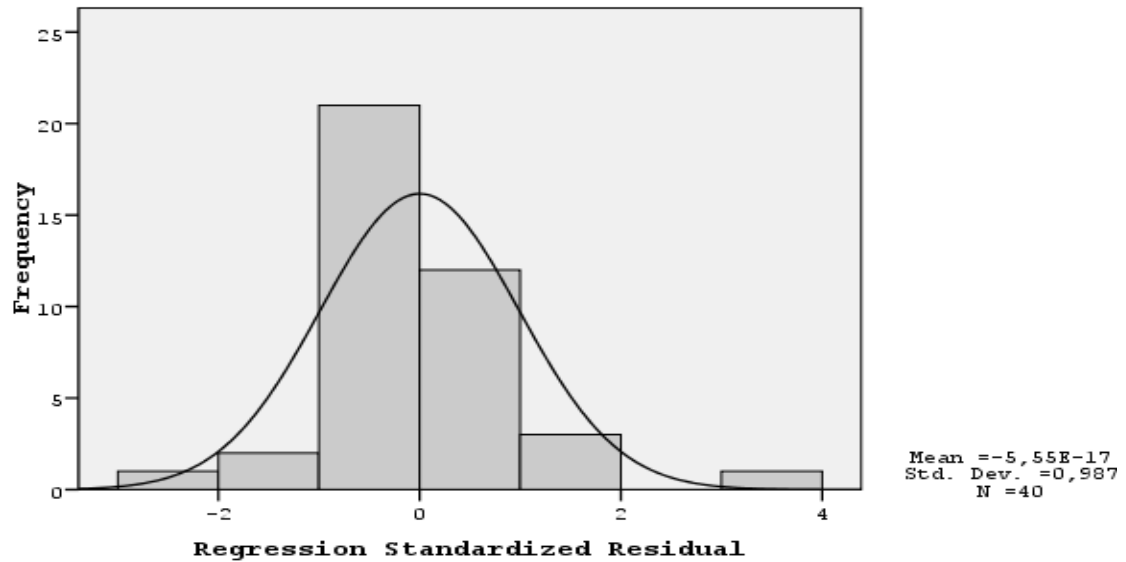
a. Predictors: (Constant), Real interest rate

Significance value for constant is 0.000 and for real interest rates is 0.015. Sig value is less than 0.05, so we can assume that estimate in Beta can be asserted as true with %95 level of confidence (Table 4.17). Model function is: $NFPI = 726.714.884 - 6.598.944 \cdot \text{real interest rate (r)}$

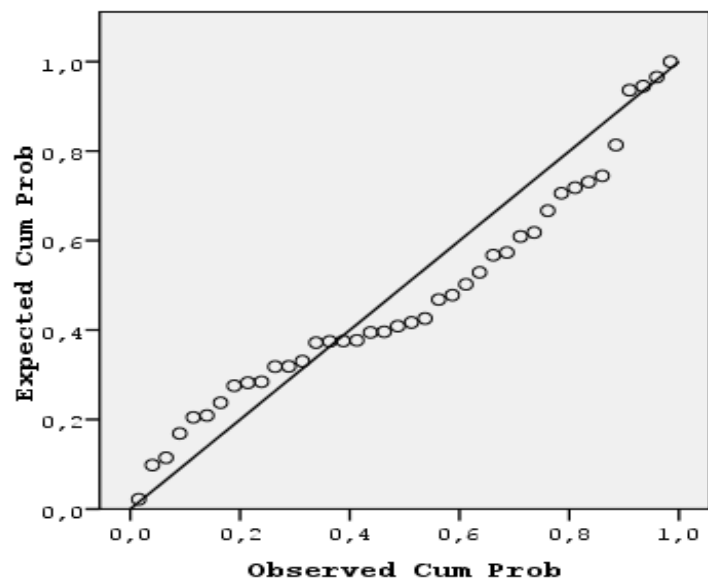
Table 4.17
Coefficient of NFPI Dependent Variable between 1998Q1 – 2007Q4

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	726.714.884	174.342.027		4,168	0,000
Real interest rate	-6.598.944	2.595.069	-0,381	-2,543	0,015

Graph 4.3
Histogram of NFPI-Dependent Variable between 1998Q1 – 2007Q2



Graph 4.4
Normal Plot of Dependent Variable NFPI between 1998Q1 – 2007Q2



4.3.7. 1998Q2 –2007Q4 Lag Real Interest Rate Dependent Variable Influence on NFPI

The total quarterly transactions by foreign investors for each stock in the ISE are used from the Istanbul Stock Exchange's web site. Variables that represent foreign trading volume relative to the total trading volume in the market covers 126 months in quarter periods between second quarter of 1998 and last quarter of 2007. The real interest rate quarterly data (overnight weighted average interest rate) is used from Turkish Central Bank's web site. 3 month-previous real interest rate influences actual period NFPI transaction. Therefore, this analysis runs previous realized real interest rate and actual quarter net foreign portfolio transactions.

Correlation between net foreign portfolio investment (NFPI) and lag real interest rate for first quarter of 1998 and second quarter of 2008 periods is significant at the 0.05 level.

Table 4.18
Correlation of Realized Previous Real Interest Rate and Actual NFPI
between 1998Q2 – 2007Q4

		NFPI	Real interest rate
NFPI	Pearson Correlation	1	-,332(*)
	Sig. (2-tailed)		0,039
	N	39	39
Real interest rate	Pearson Correlation	-,332(*)	1
	Sig. (2-tailed)	0,039	
	N	39	39

(*) Correlation is significant at the 0.05 level (2- tailed)

Durbin Watson test statistics: The sample size is 39, there are 1 regressor and an intercept term in the model. The Durbin-Watson test statistic value is 1.376. I want to test the null hypothesis of zero autocorrelation in the residuals against the alternative that the residuals are positively autocorrelated at the 5% level of significance. In the Durbin Watson table, $dL = 1.42473$ and $dU = 1.53963$. Observed value of the test statistic is less than the tabulated lower bound, so the null hypothesis of non-autocorrelated errors in favor of the hypothesis of positive first-order autocorrelation

should be rejected. Since 1.376 is less than 1.42473, we reject the null hypothesis which is formulized as $H_0 =$ There is autocorrelation. Therefore, there is no autocorrelation in the model for second quarter of 1998 and last quarter of 2007 periods (Table 4.19).

Table 4.19
Model Summary of NFPI - Dependent Variable between 1998Q2 – 2007Q4

R	R Square	Adjusted R Square	Change Statistics					Durbin-Watson
			Sig. F Change	R Square Change	F Change	df1	df2	
,332(a)	0,111	0,086	0,111	4,597	1	37	0,039	1,376

a. Predictors: (Constant), Real interest rate

R Square: Independent variable (real interest rate) with %11,1 proportion explains NFPI, dependent variable. So, R-square tells that %11,1 of variation was explained. Adjusted R square shows that %8,6 of the variance was explained.

Significance value tested in ANOVA is below 0.05 for %95 confidence. Therefore, the model as a whole is significant. Dependent variable, NFPI, can be explained by independent variable (Table 4.20).

Table 4.20
ANOVA Test of NFPI - Dependent Variable between 1998Q2 – 2007Q4

	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.536.832.374.012.910.000	1	2.536.832.374.012.910.000	4,597	,039(a)
Residual	20.419.443.477.760.300.000	37	551.876.850.750.278.000		
Total	22.956.275.851.773.200.000	38			

a. Predictors: (Constant), Real interest rate

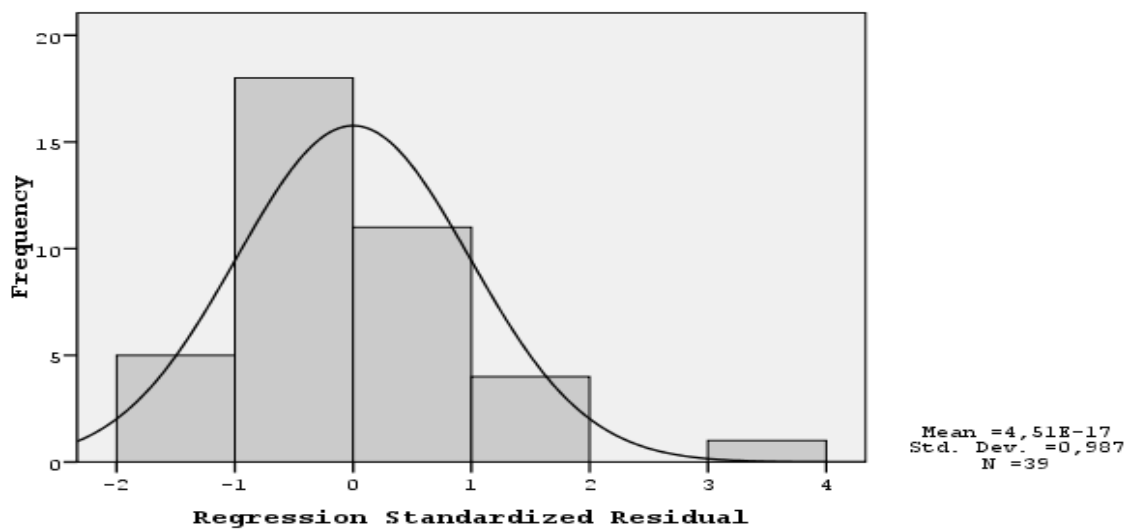
Sig value for constant is 0.000 and for real interest rates is 0.039. Sig value is less than 0.05, so we can assume that estimate in Beta can be asserted as true with %95 level of confidence (Table 4.21).

The model function is; $NFPI = 699.115.960 - 5.773.041 \cdot \text{real interest rate (r)}$

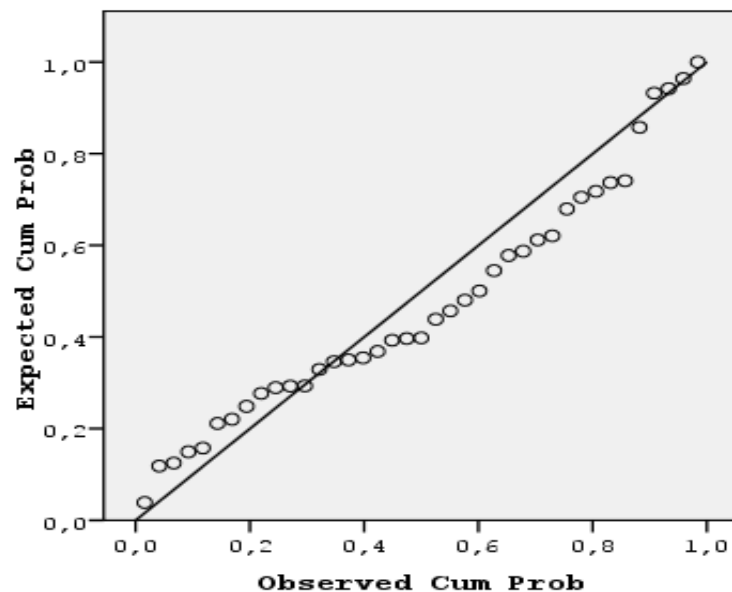
Table 4.21
Coefficient of NFPI-Dependent Variable between 1998Q2 – 2007Q4

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	699.115.960	183.016.927		3,820	0,000
Real interest rate	-5.773.041	2.692.649	-0,332	-2,144	0,039

Graph 4.5
Histogram of Dependent Variable NFPI between 1998Q2 – 2007Q4



Graph 4.6
Normal Plot of Dependent Variable NFPI between 1998Q2 – 2007Q4



5. CONCLUSION

Foreign portfolio investment as a capital movement is one of the most risky types for the country in/to which the investment was made. As a matter of fact, the effects of foreign portfolio flows towards Turkey are a debate issue for a long time. Both international theorists and economic indicators state that real interest rate has an influence on NFPI transactions and defended that real interest rate increase causes to the rise of foreign portfolio inflows.

This thesis has focused on the influence of real interest rate variable on NFPI in Turkey between 1998 and 2008 and employs regression analysis including 1998 first quarter - 2007 fourth periods and 1998 first quarter - 2008 second quarter periods. Actual real interest rates and 3 month-lag real interest rates effects were also analyzed separately. In order to define and eliminate the effects of crisis periods, the time series were divided into several periods, taking into account the crisis and post-crisis terms (second quarter of 2000 and 2001 financial crisis period, third quarter of 2001 and fourth quarter of 2004 during which the economy was stable after the financial crisis of February 2001, as well as the first quarter of 2005 and last quarter of 2007, where the economy had faced stable financial years before the financial crisis of February 2008).

In the first set of model, overnight weighted average interest rate as an independent variable and NFPI as a dependent variable are used for the first quarter of 1998 and second quarter of 2008. There is statistically significant relation between real interest rate and NFPI; however the real interest rate variable explains approximately 10% of NFPI dependent variable. Therefore, there are other pull and push factors explained in the first section of this thesis directing NFPI. Nevertheless, linear regression model was used since it is aimed to analyze the real interest rate effects on NFPI.

In the second set of model, analysis covers the first quarter of 1998 and last quarter of 2007 periods. There is statistically significant relation between real interest rate and NFPI. The real interest rate variable explains approximately 14% of NFPI dependent variable. 2008 financial crisis period was eliminated in this model to

determine the effect on the model. Because of the effects of 2007 mortgage crisis and its contagion effects in ISE and international financial credit crisis in 2008, the real interest rate does not explain the NFPI variable and it is seen that the real interest rate gives statistically more meaningful results when 2008 period is eliminated.

In the third set of model, lag real interest rate independent variable was used in order to determine its effects on NFPI. There is statistically significant relationship between 3 month-lag real interest rate and NFPI for the second quarter of 1998 and last quarter of 2007. The actual real interest rate and lag real interest rate explains NFPI approximately 15% and 11% respectively. Here, it is seen that investors take immediate put and call decisions related with the interest rate return. Therefore, this creates a risk especially for the emerging countries and also Turkey due to the “hot money” transactions. Foreign portfolio investment towards Istanbul Stock Exchange show speculative and short term-base character. Such volatility of capital remains with the financial markets. Sudden withdrawals of the capital lead to unexpected changes in the availability of assets and changes in asset prices in consequence.

In the fourth set of model, time series were divided based on the periods including crisis years and economically stable years and it is seen that there is no correlation between the real interest rate and NFPI. In the long term, the real interest rate explains almost 10%-15% of NFPI, whereas it is concluded that other explanatory pull and push factors have crucial effects on NFPI when the different characteristic periods are taken into account separately.

The overall result of this thesis indicates that there is a positive significant relationship between the real interest rate and NFPI in the long term time series data.

BIBLIOGRAPHY

BOOKS

Basu, R. and Victoria Miroshnik, **Japanese Foreign Investments, 1970-1998: Perspectives and Analyses**, M.E Sharpe, 2000, pp.1-204.

Berry, Albert and others, **Critical Issues in International Financial Reform**, United States: Transaction Publishers, 2003, pp.1-347.

K. Das, Dilip and Jeffrey A. Frankel, **International Finance, Contemporary Issues Book**, London, New York: Routledge, 1993, pp.1-644.

Makin, A. J., **Global Finance and the Macro Economy**, New York, USA: Palgrave Publishers, 2000, pp.1-212.

ARTICLES

Agosin, Manual R. and Ricardo Ffrench –Davis, “Managing Capital Inflows in Chile”, **Oxford University Press**, 2000, <http://www.financialpolicy.org/financedev/agosin.pdf> (15 April 2009), pp.1-38.

A.Frankel, Jeffrey, “Quantifying International Capital Mobility in the 1980s”, **National Bureau of Economic Research Review**, NBER Working Papers, 1991, pp.227-270.

Akkan, Nejla Adanur, “Uluslararası Sermaye Akımları: Etkileri, Sterilizasyon Politikaları ve Değişen Yapısı”, **Uludağ Üniversitesi Sosyal Bilimler Dergisi**, sbe.balikesir.edu.tr/dergi/edergi/c5s7/makale/c5s7m3.pdf (15 April 2009), pp.36-52.

Akyüz, Yılmaz and Andrew Cornford, “Capital Flows to Developing Countries and the Reform of The International Financial System”, **UNCTAD**, No.143, November 1999, pp.1-50.

Alfaro, Laura and Fabio Kanczuk, “Optimal Reserve Management and Sovereign Debt”, **National Bureau Economic Research**, Working Paper Series No: 13216, July 2007, pp.1-37.

Altinkemer, Melike, “Capital Inflows and Central Bank’s Policy Response”, **Central Bank of the Republic of Turkey, World Bank Project**, December 1998, pp.1-32.

Bacchetta, Philippe and Eric Van Wincoop, “Capital Flows to Emerging Markets, Liberalization, Overshooting and Volatility”, **National Bureau of Economic Research**, NBER Working Paper Series 6530, April 1998, pp.1-46.

Başoğlu, Ufuk, “Finansal Serbestleşme ve Uluslararası Portfoy Yatırımları”, **Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi**, Cilt 3, Sayı:4, 2000, pp.88-98.

Bekaert, Geert and Campbell R. Harvey, “Emerging Markets Finance”, **Journal of Empirical Finance**, No.10, 2003, pp.1-53.

Bekaert, Geert and Campbell R. Harvey, “Research in Emerging Markets Finance: Looking to the Future”, **Emerging Markets Review**, No.3, 2002, pp.429-448.

Calvo, Guillermo and Carmen M. Reinhart, “When Capital Inflows Come to a Sudden Stop: Consequences and Policy Options”, <http://www.puaf.umd.edu/papers/reinhart.htm>, (05 June 1999), pp.1-30.

Calvo, Guillermo and others, “The Growth Interest Rate Cycle in the United States and Its Consequences for Emerging Markets”, **Inter American Development Bank**, Working Paper 458, March 2001, pp.1-29.

Calvo, Guillermo A., Alejandro Izquierdo and Luis-Fernando Mejia, “On the Empirics of Sudden Stops: The Relevance of Balance-Sheet Effects”, **Inter-American Development Bank**, Working Paper, No: 509, March 2004, pp.1-61.

Calvo, Guillermo A., Leonardo Leiderman and Carmen M. Reinhart, "Inflows of Capital to Developing Countries in the 1990s: Causes and Effects", **Inter-American Development Bank**, Working Paper 302, 1996, pp.1-15.

Calvo, Sara and Carmen Reinhart, "Capital Flows to Latin America: Is There Evidence of Contagion Effects?", **World Bank Policy Research**, No.1619, June 1996, pp.1-23.

Cardarelli, Roberto, Selim Elekdag and M.Ayhan Köse, "Capital Inflows: Macroeconomic Implications and Policy Responses", **International Monetary Fund Working Paper**, March 2009, pp.1-62.

Cavali, Tony and Ramkishan S. Rajan, "The Capital Inflows Problem in Selected Asian Economies in the 1990s Revisited", **Asian Economic Journal**, Vol.20, Issue 4, December 2006, pp.409-423.

Celasun, Merih, "2001 Krizi, Öncesi ve Sonrası: Makro Ekonomik ve Mali Bir Değerlendirme", <http://www.econ.utah.edu/~ehrbare/erc2002/pdf/i053.pdf>, 22 Mayıs 2008, pp.1-56.

Desormeaux, Jorge, Karol Fernandez and Pablo Garcia, Financial Implications of Capital Outflows in Chile: 1998-2008, BIS Papers No.44, pp.121-142.

Durham, J. Benson, "A Survey of the Econometric Literature on the Real Effects of International Capital Flows in Lower Income Countries", **Queen Elizabeth Housing Review**, Working Paper No.50, October 2000, pp.1-48.

Edwards, Sebastian, "Capital Mobility and Economic Performance: Are Emerging Economies Different?", **National Bureau of Economic Research Review**, NBER Working Papers No. W8076, December 2000, pp.1-33.

Edwards, Sebastian, Javier Gomez Biscarri and Fernando Perez de Gracia, "Stock Market Cycles, Financial Liberalization and Volatility", **National Bureau of Economic Research**, Working Paper No.08/03, May 2003, pp.1-55.

Fernandez-Arias, Eduardo, "The New Wave of Private Capital Inflows: Push or Pull?", **World Bank Policy Research**, Working Paper 1312, June 1994, pp.1-48.

Francis, Bill, Iftikhar Hasan and Delroy Hunter, "Emerging Market Liberalization and the Impact on Uncovered Interest Rate Parity", **Federal Reserve Bank of Atlanta**, Working Paper 16, August 2002, pp.1-56.

Frankel, Jeffrey A. and Chudozie Okongwu, "Liberalized Portfolio Capital Inflows in Emerging Markets: Sterilization, Expectations, and the Incompleteness of Interest Rate Convergence", **International Journal of Finance and Economics**, Vol.1, No.1, January 1996, pp.1-29.

Gavin, Michael, Ricardo Hausmann and Leonardo Leiderman, "The Macroeconomics of Capital Flows to Latin America: Experience and Policy Issues", **Inter-American Development Bank**, Working Paper 310, October 1997, pp.1-21.

Haynes, Stephen E., “Identification of Interest Rates and International Capital Flows”, **The Review of Economics and Statistics**, 2001, pp.103-111.

Hernandez, Leonardo and Heinz Rudolph, “Sustainability of Private Capital Flows to Developing Countries: Is a Generalized Reversal Likely?”, **World Bank Policy Research**, Working Paper 1518, October 1995, pp.1-44.

İnandım, Şeyda, “Kısa Vadeli Sermaye Hareketleri ile Reel Döviz Kuru Etkileşimi: Türkiye Örneği”, **Türkiye Cumhuriyeti Merkez Bankası**, Kasım 2005, pp.1-135.

Jeanneau, Serge and Marian Micu, “Determinants of International Bank Lending to Emerging market Countries”, **BIS Working Papers**, No:112, June 2002, pp.1-41.

Kreicher, Lawrence L., “International Portfolio Capital Flows and Real Rates of Interest”, **The Review of Economics and Statistics**, The MIT Press, Vol. 63, No.1, February 1981, pp.20-28.

Kula, Ferit, “Uluslararası Sermaye Hareketlerinin Etkinliği: Türkiye Üzerine Gözlemler”, **İktisadi ve İdari Bilimler Dergisi**, Cilt 4, Sayı 2, 2003, ss.141-154.

Lanyi, Anthony and Rüşdü Saraçoğlu, “Interest Rate Policies in Developing Countries”, **Washington DC: International Monetary Fund Attention Publications**, Occasional Paper 22, October 1983, pp.1-35.

Lian Ong, Li, Kenneth W. Clements and H.Y. Izan, “The World Real Interest Rate: Stochastic Index Number Perspectives”, **Journal of International Money and Finance**, No.18, 1999, pp.225-249.

Lieberman, W. and Christopher D. Kirkness, “Privatization and Emerging Equity Markets”, **The World Bank**, March 1998, pp.1-145.

Montiel, Peter and Carmen M. Reinhart, “Do Capital Controls and Macroeconomic Policies Influence the Volume and Composition of Capital Flows? Evidence from the 1990s”, **Journal of International Money and Finance**, No.18, 1999, p.619-635.

P. Taylor, Mark and Lucio Sarno, “Capital Flows to Developing Countries: Long and Short Term Determinants”, **The World Bank Economic Review**, Oxford University Press, Vol. 11, No.3, September 1997, pp.451-470.

Pavabutr, Pantisa and Hong Yan, “The Impact of Foreign Portfolio Flows on Emerging Market Volatility: Evidence from Thailand”, **Australian Journal of Management**, Vol.32, No.2, December 2007, pp.345-368.

Reinhart, Carmen, Calvo Guillermo and Leonardo Leiderman, “Inflows of Capital to Developing Countries in the 1990s”, **Journal of Economic Perspectives**, Vol.10, No:2, Spring 1996, pp.123-139.

Reinhart, Carmen and Patrick Asea, “Real Interest Rate Differentials and the Real Exchange Rate: Evidence from Four African Countries”, **Munich Personal Repec Archive**, Paper No.13357, August 1995, pp.1-39.

T. Yap, Joseph, “Managing Capital Flows to Developing Economies: Issues and Policies”, **Philippine Institute for Development Studies**, Discussion Paper Series No.41, 2000, pp.1-25.

Takagi, Shinji and Taro Esaka, “Sterilization and the Capital Inflow Problem in East Asia, 1987-97”, **Economic Research Institute Discussion Paper**, No. 86, August 1999, pp.1-40.

Uçtum, Merih and Remzi Uçtum, “Portfolio Flows, Foreign Direct Investment, Crises and Structural Changes in Emerging Markets: Evidence from Turkey”, April 2005, pp.1-32.

Varlık, Cemil, “Reversals of Sudden Stops of Capital Flows in the Turkish Economy”, **Ege Academic Review**, 7 (1) 2007, pp.193-216.

Yentürk, Nurhan, “Short-Term Capital Inflows and Their Impact on Macroeconomic Structure: Turkey in the 1990s”, **Institute of the Developing Economies Journal**, Vol.37, Issue 1 (March 1999), pp.89-113.

Zhu, Jiang, Hung-Gay and Wai K. Leung “Nondeliverable Forward Market for Chinese RMB: A First Look”, **China Economic Review**, No.15, March 2004, pp.348-352.

REPORTS

Chicago Board Options Exchange (CBOE), **Using VIX in a Diversified Portfolio**, Vol. 1, Issue 2, January 2009, pp.1-4.

International Monetary Fund, **World Economic Outlook, World Economic and Financial Survey**, October 2001, pp.145-173.

International Monetary Fund, **World Economic Outlook: World Economic and Financial Survey**, April 2008, pp.1-303.

International Monetary Funds, “Two Waves of Large Capital Inflows to Emerging Markets”, **World Economic Outlook Survey**, 2007, pp.1-30.

International Monetary Fund, **Regional Economic Outlook: Sub-Saharan Africa, World Economic and Financial Survey**, April 2008, pp.1-145.

Market Analysis, Research and Education (MARE) Group, **2008 Market Update**, January 2009, pp.1-51.

McCoy, Terry L., **2008 Latin American Business Environment Report**, Univeristy of Florida, October 2008, pp.1-63.

OECD, **OECD Economic Survey: Turkey**, Volume 2008, Issue 14, July 2008, pp.1-164.

Ortiz, Guillermo, “How Should Monetary Policy Makers React to the New Challanges of Global Economic Integration: the Case of Mexico”, **Federal Reserve Bank Symposium Paper**, <http://www.kc.frb.org/PUBLICAT/SYMPOS/2000/or.pdf>, (20.10.1982), p.1-22.

UNCTAD, **World Economic Social Survey**, 2005, pp.73-108.

UNCTAD, **World Economic Social Survey**, 2008, pp.1-70.

UNCTAD, “Comprehensive Study of the Interrelationship between Foreign Direct Investment and Foreign Portfolio Investment”, **UNCTAD/GDS/DFSB/5**, June 1999, pp.1-46.

United Nations, **International Private Capital Flows, World Economic and Social Survey**, 2005, pp.73-108.

United Nations, **World Economic Situation and Prospects 2009: Global Outlook**, December 2008, pp.1-35.

World Bank, “Private Capital Flows to Developing Countries: Global Development Finance”, <http://siteresources.worldbank.org/INTGDF2000/Resources/CH2--34-55.pdf>, (08 April 2009) pp.34-55.

INTERNET

<http://www.dailyreckoning.co.uk/economic-forecasts/sovereign-wealth-funds-the-new-wealth-of-nations.html>, (05 May 2009)

(userhome.brooklyn.cuny.edu/economics/muctum/Papers/TR.doc (10 September 2008)

CONFERENCE

Balkan, Erol, F. Gül Biçer and Erinc Yeldan, “Patterns of Financial Capital Flows and Accumulation in the Post-1990 Turkish Economy”, **METU International Conference on Economics**, VI, Ankara, September 2002, pp.1-31.

Hartwig, Robert P., “Financial Crisis and the Future of PC Insurance Challenges Amid the Global Economic and Regulatory Storm”, **20th Annual P/C Insurance Executive Conference**, November 2008, pp.1-125.