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CAPITAL MOBILITY AND MONETARY POLICIES IN EMERGING MARKET ECONOMIES

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ÖZ

Finansal serbestleşme ile birlikte sermaye hareketlerini serbest bırakan gelişmekte olan piyasa ekonomileri yüksek miktarda sermaye girişlerine şahit olmaktadır. Söz konusu sermaye hareketlerinin kısa vadeli ve spekülatif karakterde olması, sermayenin "ani duruş" ve "tersine dönmesi" gibi durumlarda zaten sığ ve gelişmini tamamlamamış olan gelişmekte olan ülke ekonomilerinin finansal piyasalarında büyük dalgalanmalara ve nihayetinde büyük çöküntülere neden olmaktadır. Söz konusu serbestleşme ile birlikte, gelişmekte olan ülkeler sermaye girişlerinin sürekliliğine bağımlı hale gelmektedir. Aynı zamanda kısa vadeli ve spekülatif nitelikteki bu hareketler merkez bankalarının genellikle politika hedefi olarak kullandığı döviz kuru, faiz oranları, parasal büyüklükler ve döviz rezervleri gibi değişkenlerde dalgalanmalar meydana getirmektedir.

Bu çalışmanın amacı, kısa vadeli sermaye hareketlerinin gelişmekte olan piyasa ekonomileri üzerindeki etkisini ortaya koymaktır. Bunu yaparken, birinci bölümde finansal serbestleşme ve finansal serbestleşmeden kaynaklanan sermaye hareketlerini değerlendirdim. Bu bölümde, sermaye hareketlerinin gelişmekte olan ülkelere yönelmesindeki faktörleri ve bu hareketlerin sürdürülebilirliğini inceledim. Ikinci bölümde, özellikle 1990'lı yıllarda, gelişmekte olan piyasa ekonomilerinde yaşanan krizlerin nedenlerini, finansal kriz literatüründeki gelişmeleri ve bilhassa "bilanço analizlerini" araştırdım. Son olarak, üçüncü bölümde; sermaye hareketlerinin gelişmekte olan ülke ekonomilerinin para politikaları üzerindeki etkilerini, sermaye hareketlerinin merkez bankalarının bağımsız para politikaları uygulayabilme imkanını ne ölçüde etkilediğini, ve finansal krizlerden kaçınmak için gelişmekte olan piyasa ekonomilerinde ne gibi politikalar izlenmesi gerektiğini araştırdım.

ABSTRACT

Along with financial deregulation, emerging market economies that liberalize their capital accounts witness on influx of capital flows. The short-term and speculative characteristics of these capital inflows bring about large financial fluctuations and ultimately cause to collapse in the emerging countries' economies, which are already shallow and at the early stage of their developments, in case of a "sudden stop" and "reversal" incident. Associated with aforesaid liberalization, developing countries become dependent on continuity of capital inflows. At the same time, these short-term and speculative capital inflows bring about fluctuations in the variables such as exchange rate, interest rates, monetary aggregates and foreign reserves, which are generally the policy instruments of the central banks.

The purpose of this study is to set forth the effects of short-term capital movements on the emerging market economies. In doing this, in chapter I, I review the financial liberalization and capital movements that arise from financial liberalization. In this chapter, I examine the factors that determine capital movements into emerging economies and the sustainability of these movements. In chapter II, I investigate the causes of emerging market crises, especially in the 1990s, developments in the financial crisis literature and particularly "balance sheet analyses". Finally in chapter III, I explore the effects of capital mobility on the monetary policies of emerging market economies, to what extent the capital mobility affects the capability of implementing independent monetary policies of central banks, and what policies have to be implemented in the emerging market economies in order to avoid financial crises.

FOREWORD

Financial globalization has significantly changed the effects, the structures and the processes of capital movements. In this process, capital movements have not only totally increased but also have become short-term and speculative. The process of financial deregulation and the successive financial crises in company with this process have triggered intensive debates on the effects of capital movements on emerging economies.

One of the most important effects of this globalization process is that, increasing capital mobility has precluded implementing autonomous monetary policies in emerging market economies. Pegged exchange rate regimes, which were adopted in many emerging economies in order to tame high and chronic inflation, have compelled emerging market economies to make a choice between independent monetary policies and free capital mobility.

In this study, I try to set forth the effects of increasing capital mobility on the emerging market economies and how emerging economies can best benefit from financial liberalization while eliminating their vulnerabilities. In doing this, I deal with the lessons that have to be taken from emerging market crises in 1990s. I am especially indebted to my advisor Prof. Dr. Nihal Tuncer for her valuable and helpful support. I also thank my family for their moral support.

Fatih KALFAZADE

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BAIBOR RATE:	Buenos Aires Interbank Offered Rate
BANXICO:	Banco de Mexico (Central Bank of Mexico)
CETES RATE:	Certificados de la Tesoreria de la Federacion (Mexican Treasury bills)
FDI	Foreign Direct Investment
GDP	Gross Domestic Production
IMF	International Monetary Fund
LOLR	Lender of Last Resort
URR	Unremunerated Reserve Requirement
U.S.	United States
WDI	World Development Indicators

INTRODUCTION

Financial liberalization and more integrated financial markets are the two significant characteristics of the globalization process. Globalization has significantly changed the effects and processes of capital mobility. In this process, not only total capital mobility has increased but the short-term capital mobility which seeks higher profit through interest rate- exchange rate has increased considerably. The pros and cons of capital mobility on the countries' economies have increasingly become a controversial issue.

Both investors and recipient countries benefit from the advantages of increasing capital mobility. On the one hand, capital mobility provides to spread the risks and to increase the level of returns of investors, on the other hand, it helps countries to finance their investments, promote their growth and increase consumption of residuals.

Easing of controls on capital movements and the improvement in information and communication technologies have had a significant role on the integration of financial markets and brought to fruition capital mobility world wideness. Intensive interaction among financial markets owing to new developments on information and communication technologies and deepening of markets with new financial instruments have accelerated financial deregulation and enabled the funds in the developed economies to move throughout the world. International capital movements, intensified in the late 1980s, have acted upon yield spread among countries. Developing countries those which are included in financial deregulation and selected to enjoy with this process, have come up against unexpected and unanticipated problems. Although the deregulation in the foreign exchange regimes contributed to the development of emerging economies and international markets, it restricted emerging economies in terms of following independent monetary, exchange and interest rate policies hence removed the opportunity of distinctive growth and development targets of the countries in question (Yeldan, 2002).

According to the views of those who advocate financial liberalization, along with the removal of capital controls savings would canalize more efficient investments and hence savings would be distributed more efficiently. After the

financial liberalization, savings in the developed economies flow into the emerging economies, whose savings are insufficient and interest rates are high, and this process leads to a convergence in interest rates among the countries, and it also leads to more competitive financial markets. (İnsel and Sungur, 2003: 4)

On the contrary, those who are opposed to the so-called benediction of financial liberalization, it does not lead to any amelioration on international allocation of savings and not to provide expected efficiency. The main reason for this situation, international capital movements act upon short-term profit motive rather than evaluating real investments opportunity. According to this view growing capital mobility break loose from commodity flows and follows arbitrage opportunity, especially in emerging market economies (Yeldan, 2002).

In chapter I, I deal with capital movements which head towards emerging market economies in 1990s, factors that determine these capital movements towards emerging market economies and sustainability of these capital movements.

In chapter II, I review the reasons and dynamics of financial crises which were taken place in 1990s. In this chapter, I review the role of "financial contagion" and "herd behavior" in the occurrence of emerging market financial crises as well as macroeconomic imbalances, which was prioritized classically. In connection with this, besides the imbalances in the government sector, I attribute special importance to the imbalances in the corporate sector balance sheets' and emphasize the significance of the balance sheet analyses in the explanation of financial crises in the 1990s.

In chapter III, I deal with the monetary policies implemented in the emerging market economies. In this chapter, the effects of increasing capital mobility on the monetary policies of emerging market economies and whether this increasing capital mobility affects implementation of independent monetary policies are examined. After all, the role of exchange and interest rate policies, reserve accumulation and capital restrictions are fleshed out in order to prevent successive financial crises, gain financial stability and implement independent monetary policies in emerging market economies.

1. CAPITAL MOVEMENTS INTO EMERGING MARKET ECONOMIES

Rapidly integrating financial markets have changed volumes of international capital flows as well as its channels and sources. Realization of capital mobility on the global scale has amplified the problems which source from this phenomenon.

After the World War II, Bretton Woods conference steered the future of the system. In this system, capital flows have had the characteristics of official borrowing and aimed to fund plans, projects and financial expenses which arose from basic imbalances of the economy. Therefore, in this period, not only access of the emerging economies to the international financial markets remained limited but also capital flows toward emerging economies remained limited, too.

Although capital mobility tended to show an increase as from the 1970s, these processes experienced some cyclical remissions and decelerations. For example, the revival of capital mobility in 1970s was followed by severe a reversal in 1980s. Further revival and following reversal recognized in 1990s (Moreno, 2000)

From the period of World War II to 1970s, increase in efficiency of production due to new technologies, fell in raw material prices, financial assistance made by the World Bank and similar institutions, and institutional arrangements that took place in developed economies within the framework of Bretton Woods conference, welfare increased in countries in question and these countries have experienced an economic boom until the beginning of 1970s. As from the 1970s, however, the capacity of technologies used in developed economies, which increased the productivity of labor, has declined; prices of raw materials have increased and therefore profit margin has diminished. Diminishing returns on investments have led to decrease in investments and therefore economic growth.

The new construction of world economy which was planned in Breton Woods conference and international capital flows in line with Breton Woods, succumbed to economic crises in 1970s and collapsed. Both world economy and capital flows have undergone a fundamental change after this collapse. One of the most outstanding characteristic of the new era was the increasing capital mobility. Investors in the

developed economies eschewed from the real investments and canalize towards financial investment as from the mid of 70s (Yeldan, 2002).

As from the 1980s, high foreign indebtedness in emerging economies brought about growing public deficit and macroeconomic instability. An economic slowdown occurred worldwide and interest rates soared. With increasing trade deficits of emerging economies, ongoing crises further deepened. In this period, emerging economies tried to attract foreign direct investments and portfolio investments, instead of external borrowing in order to reduce the effects of external shocks (Calvo, Leiderman and Reinhart, 1993).

Befallen crises guide to fundamental changes in economic policies. Most of the countries have abandoned etatist policies, which have been seen as an obstacle in providing capital financing, and started to pursue liberal policies. Developed economies have deemphasized the role of the government on their economies. This situation was seen as a practice in avoiding crises for emerging economies. After the befallen crises and with the influence of globalization, emerging economies have undergone structural changes and reestablished their macroeconomic balances according to the needs of open economy. In some emerging countries exchange controls have completely abolished in a short period of time, in others controls have removed gradually and extended over period of time. Increasing trade volumes in connection with the opening of economies, emerging economies needed more sources coming from developed economies. As a consequence of this situation, many developing economies have liberalized their exchange regimes and capital accounts, and have established and developed their financial markets. These new emerging markets have served attractive terms for capital inflows while the liberalized exchange regimes facilitate capital inflows and outflows. So this led to an increase in capital flows in terms of volume and velocity.

Although developing economies have thought to finance their investments with foreign capital, it has not been a sustainable process in every country and era. In some countries and periods foreign capital used the opportunity of current situation and earned short-term speculative profits, then left the countries in question rather than finance the investments.

1.1. Capital Movements in 1990s and Their Aftermath

The major increase in international capital flows that took place in 1990s depended upon two important developments which allowed international portfolio diversification. First of all, developing economies have significantly augmented their integration with international financial markets with liberalizing their financial markets, exchange regimes and capital accounts. Along with the privatization of public enterprises developing economies have supported occurrence of more deep and liquid international markets and increased their investments opportunity (Moreno, 2002).

In the second place, the improvements in information and communication technologies have facilitated evaluation and monitoring of worldwide investments and have enabled the funds in developed economies move around the world. Improvements in technologies, especially in communication technologies, have provided convenience in acquiring information and facilitated cross-border investments for foreign investors which supported more efficient instruments in risk managements (Moreno, 2002).

Besides the structural chances in developing economies which were undergone in 1990s, it is not possible to ignore the effects of some global factors in international capital flows. International capital not only interested in countries which has had sound macroeconomic policies but also interested in countries which were differed from each others in terms of economic policy and peculiarity. For instance, when we look up the 1990s, it can be seen that the international capital movements not only headed towards the countries which showed great success in implementing structural adjustment programs, like Argentina, Chile and Mexico, but also headed towards the countries in which economic indicators deteriorated, like Brazil where the public deficits have soared (Yeldan, 2002). This situation put forwards some significant global factors. Steady decline in American short-term interest rates, especially in 1990s, is the most important factor in this situation (Calvo, Leiderman and Reinhart, 1993). At the same period Latin American and East Asian countries provided the opportunity of high-yield alternatives, thus great amount of capitals stared to inflows to these countries.

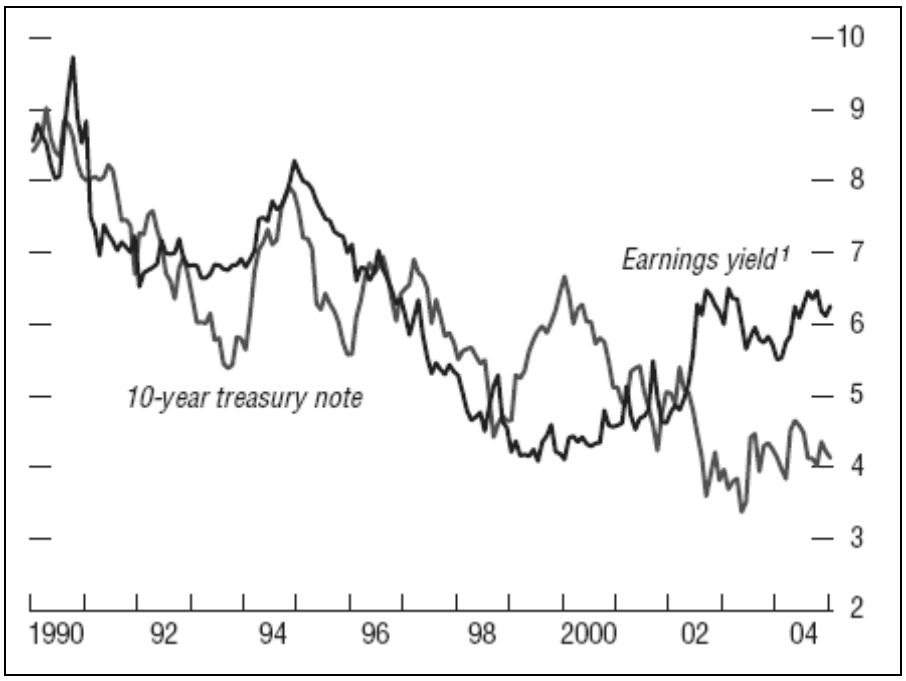

Figure: 1.1 U.S. Equity and Benchmark Government Yields (in percent)

Source: IMF, World Economic and Financial Surveys, Global Financial Stability Report, April 2005, p: 19.

Although capital movements in 1990s caught up the level of 1970s, these movements differed from in many aspects**.** The most prominent reflections of globalization were observed in financial markets in 1990s and in this era composition of capital movements underwent a significant change. These movements sought for arbitrage and were speculative money movements. In parallel with this change capital movements in this period became shorter and volatile (Becker and Noone, 2008).

Globalization and deregulation in financial markets in 1990s have led to relocate capital movements from official sources to private sources. Along with the integration of financial markets countries opted to borrow from international markets instead of borrowing from direct official sources. As a consequence, emerging economies found the opportunity of accessing international capital markets more easily contrary to Bretton Woods.

Table: 1.1. Capital Flows to Emerging and Developing Economies

	Private Capital Flows, Net	Direct Investment, Net	Private Portfolio Flows, Net	Other Private Capital Flows, Net	Official Flows, Net
1990	23.615	20.686	4.781	-1.830	n/a
1991	94.828	32.205	41.115	21.556	n/a
1992	105.784	33.261	57.091	15.546	n/a
1993	138.246	53.765	105.388	-20.844	n/a
1994	110.264	80.045	11.016	-80.715	n/a
1995	180.102	94.935	35.276	49.899	n/a
1996	217,044	115.047	97.420	4.616	-12.730
1997	193.509	149.750	49.494	-5.731	12.390
1998	61.592	156.628	39.813	-134.848	35.635
1999	67.651	171.914	67.033	-171.304	21.163
2000	63.657	163.997	17.236	-117.304	-35.502

Source: IMF, World Economic Outlook Database.

***** For this series, the selected group also includes Israel and the newly industrialized Asian economies.

** Units: U.S. dollars

*** Scale: Billions

Capital movements in 1990s differed from movements in 1970s in terms of their reasons. The main element of capital movements in 1990s arising from the imbalances between exchange and interest rate parity which led to arbitrage movements in short-term (Yeldan, 2002) But in 1970s, necessity to launch the "petrodollar funds" which increased cumulatively and decreasing interest rates in developed economies while increasing in developing economies led to capital movements.

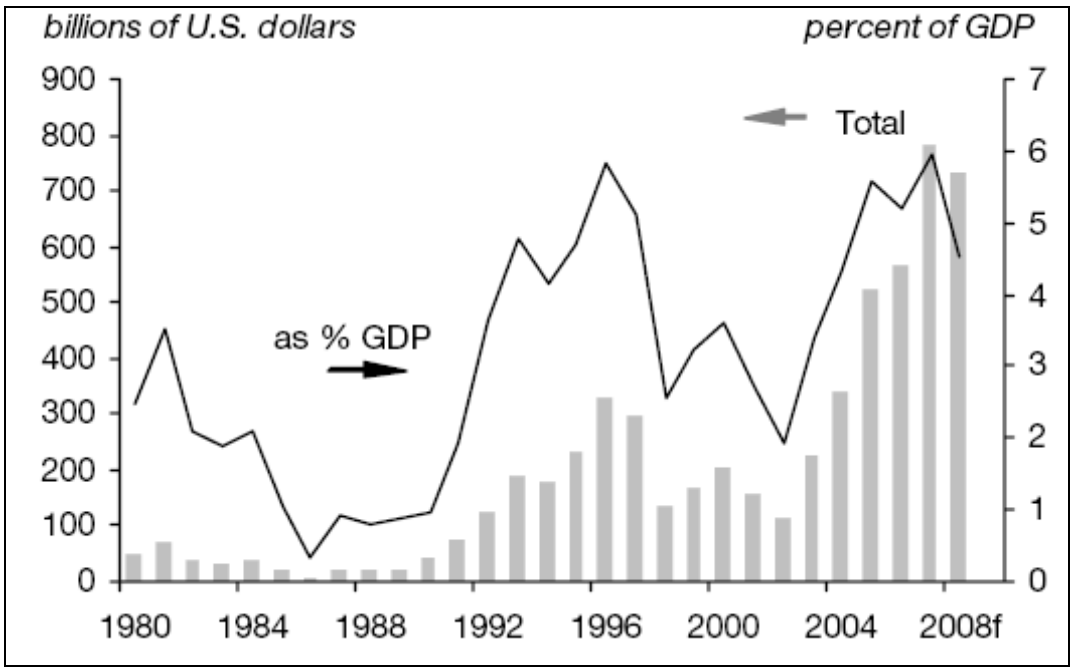

Figure: 1.2. Net Capital Flows to Emerging Economies

Source: Institute of International Finance, Capital Flows to Emerging Market Economies, March 6, 2008, p: 1.

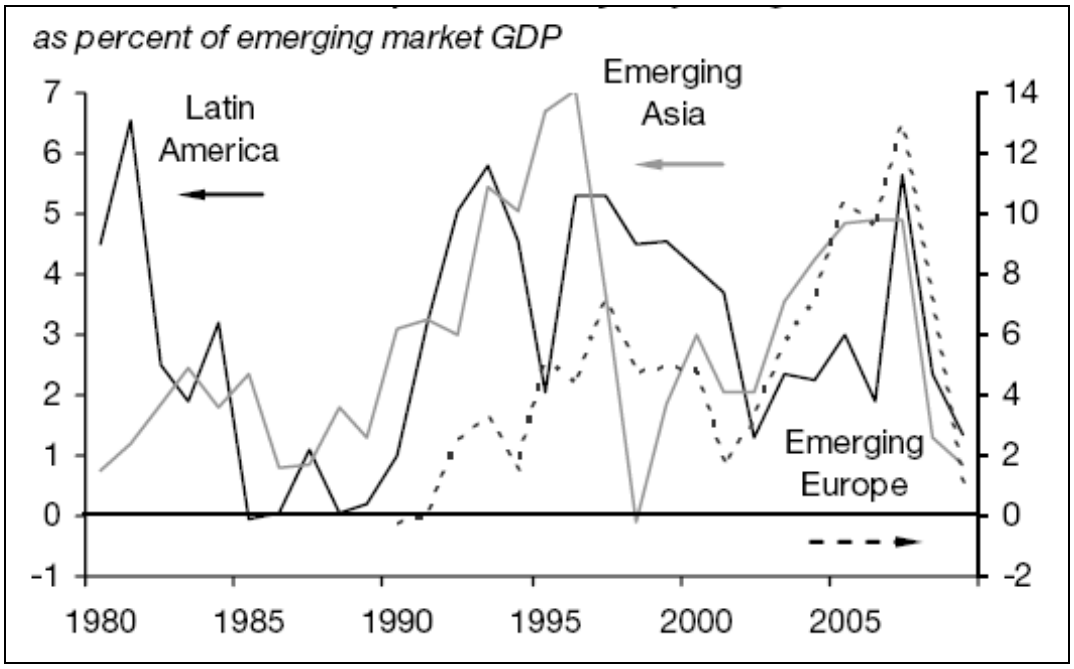

Figure: 1.3. Net Capital Flows by Major Region

Source: Institute of International Finance, Capital Flows to Emerging Market Economies, January 27, 2009, p: 6.

In consequence of globalization this arbitrager capital has canalized to emerging countries. These capital movements have become more selective, more agitated, more volatile, more speculative and shorter term. These speculative capital movements led to both overvaluation of domestic currency and excessive reserve accumulation (Yeldan, 2002). Capital inflows inclined to Latin American countries in 1990s largely sourced from short-term yield spreads. The reasons of short-term yield spreads were the higher interest rates of Latin American countries than the U.S. and valuation of domestic currency in real terms. These speculative capital inflows have financed the rapidly growing current account deficits of Latin American countries and caused to an upsurge in their foreign exchange reserves (Calvo, Leiderman and Rinehart, 1993). With the deregulation of financial markets, international capital inflows have become easier; however, international capital outflows have become easier, too. Therefore it entailed some risks.

1.2. Factors That Determine Capital Movements into Emerging Economies

Capital movements usually arise from when investors realize that the rate of return of investment in one country is higher than the international rate of return of investment. Capital movements indicate that the country which has been invested decompose from the other countries in terms of economic conditions.

The direction and magnitude of capital movements depend on both the relative return of capital and the convenience of investment environment (Montiel and Rinehart, 2001). This situation explains the boost in capital movements after the financial liberalization in emerging economies.

Portfolio diversification is one of the determinant reasons of capital mobility. Portfolio diversification indicates that financial integration will continue and local markets will not be as important as in the past (Moreno, 2000).

The view that capital mobility will show an increasing trend with financial liberalization and technological improvements are widely accepted, however, there is a less agreement on, what factors determine the capital mobility. Both external and internal factors determine the capital mobility. Increase in capital mobility may arise

from amelioration in external and internal factors, besides it may reflect a strong financial integration (Montiel and Reinhart, 2001). External and internal factors have been effective in different times in the past since from the 1970s. These factors will be discussed more detailed below.

1.2.1. Internal Factors

Internal factors (pull factors) are the factors which are determined by the country's economic conditions which incur capital inflows. High return on investments , economic reforms and recovery in macroeconomic indicators such as; increasing growth rates, decreasing inflation rates are the significant factors that attract the capital movements into the emerging countries. However, apart from all these factors, easing of controls on capital movements and financial liberalization are the vital factors for capital movements. High return on investments or convenience of macroeconomic conditions does not make sense unless the necessary conditions are provided (Montiel and Rinehart, 2001).

Arbitrage between domestic and international interest rates and depreciation in national currency is the most leading factor that determines the short-term capital movements, especially "hot money" inflows to emerging economies. Countries create speculative arbitrage opportunity for financial capital by sustaining high interest rate and low exchange rates. Arbitrage variable here refers the net profit that one unit of foreign currency converted into the national currency of the country in question at the beginning of the period and earns interest income on the basis of national currency and then leaves the country on the basis of foreign currency (Yeldan, 2005). Along with these transactions arbitrage income increases when the domestic interest rate increases and decreases when the domestic currency is devalued against foreign currency. Financial arbitrage rate can be defined here:

$[(1+R)/ (1+E)]-1$

R, denotes interest rate on national currency

E denotes the increase on exchange rate (foreign currency/national currency) (Yeldan, 2005).

A decline in arbitrage income, put it differently, a decline in interest rate and depreciation in exchange rate, bring about the capital outflows which are volatile inherently.

Financial markets react more quickly to the change in return on investment than the other markets. The direction of portfolio and short-term investments are determined both economic and other conditions perceived by investors. Investors take into account after-tax profit, exchange rate risks and the risk premium of the investment while making the decision for investment. One of the important goals of investors is to define the profitable markets before their competitors. Therefore, capital movements are highly responsive to some precipitating events. Along with transition to a more convertible exchange regime and removal of controls on the foreign investments, foreign investors realize the opportunity of high return on investment. Have a good grade by the credit rating agencies, an economic program with the IMF or acceptance by the OECD are the factors that increase the return on investment. Equilibrium exchange rate may appreciate after these types of events. If the country accepted floating exchange rate, these events will create volatility in exchange rates. If the country in question carries out a fixed exchange rate, capital inflows increase reserve money and put an upward pressure on price level and thus real exchange rate. A driblet amount of movement of global funds cause large amount of capital movements for emerging economies in proportion to their GDP (Hoggarth and Sterne, 1997).

Improvements in risk-return profile owing to the macroeconomic reforms in emerging countries may affect the issued financial assets in several respects. It may reduce the cost-of borrowing. However, amelioration in risk-return profile is not always arising from betterment in macroeconomic conditions. For instance, in the absence of prudential financial regulation, implementation of deposit insurance in a fixed-exchange rate regime may serve high and confidential return for foreign investors. The factor that attract the financial capital in a liberalized but has a poor prudential regulations country can not be attributed solely on economic recovery. It is the high return with low risk is the leading factor that attracts the capital into the economy. Capital inflows in this situation do not provide an advantageous to the country's economy, but try to obtain the opportunity of high return with low-cost

(Montiel and Reinhart, 2001). So, are the capital inflows resources from disappearance of macroeconomic imbalances or resources from the macroeconomic imbalances itself?

One of the factors that affect the international capital movements and investment is the readjustments of countries exchange rate values. These adjustments affect directly the foreign direct investments. For instance, appreciation of Japanese yen against US dollar more than 50 percent at the end of the 1980s, increase the competitiveness of newly industrialized countries, like Korea, Malaysia and Taiwan direct the Japanese investments to these low-cost production regions (Glick, 1998).

As a conclusion, political and economic conditions are the effective factors that determine the capital inflows to the emerging economies.

1.2.2. External Factors

External factors (push factors) are those that operate by reducing the attractiveness of lending to industrial-country debtors. Economic recession, low interest rates, poor conditions in business world, deterioration in the risk-return characteristics of issued bonds and political tensions are some of the factors that lead capital to emerging economies. Temporary pressures on the rate of returns on assets lead cyclical capital outflows from the developed economies into the emerging economies. For example; collapse of asset prices in Japan at the Japanese recession, the decrease in interest rates in England after the pound dropped out of the European Exchange Rate Mechanism (ERM) in September 1992, and reduction of interest rates as a consequence of expansionary monetary policy in United States in reaction to economic recession in 1990-1991 caused capital outflows from these countries. From the point of view of emerging economies, these episodes represent external shocks and may not be depending on the country's circumstances. Capital that escape from developed economies for cyclical conditions returns when country's conditions ameliorated. For instance, interest rates in U.S. have caused capital outflows from country and capital inflows into country in different times. When compared with emerging economies, developed economies have more advanced and operationally efficient markets and some risks that peculiar to emerging economies are not seen in

these economies. Besides betterment in country's conditions and rate of return on investments, these factors play a crucial role in return of capital into developed economies (Montiel and Reinhart, 2001).

Portfolio diversification is another factor that leads capital outflows from developed economies. Institutional lenders such as mutual and pension funds as financial intermediaries can be an example for portfolio diversification. Capital movements that aim portfolio diversifications, different from cyclical capital movements, are extended for a long period of time and have more sustainability for emerging market economies (Montiel and Reinhart, 2001).

When we look up from the perspective of emerging economies, the desirability of capital flows towards a country vary by circumstances of the country in question. Capital inflow is an external financial shock from the perspective of emerging country. Although it is a favorable condition for emerging economies which suffered from credit constrained and high indebtedness, the cyclical characteristics of shocks have a risk for emerging economies. Therefore, emerging economies have to take into consideration the possibility of reversal of the capital. Emerging economies are affected negatively whatever the reason of sudden reversal of capital.

1.2.3. Financial Integration

Besides pull and push factors financial integration itself is one of the main reason for capital flows toward emerging economies. Besides internal and external factors, increased capital flows are the result of financial integration due to the removal of barriers to capital flows (Montiel and Reinhart, 2001: 6). In recent years, both developed and developing countries have been liberalizing their capital account as a result of explicit policy decisions. Along with the removal of such barriers which stem from the countries' policy choices, capital can flow easily on the international platform and it accelerates the capital mobility among countries.

1.2.4. Relative Importance of External and Internal Factors

The relevance of internal and external factors has been at the heart of the economic debate on capital flows (pull vs. push factors). Capital flows are affected

both internal and external factors. The relative importance of these factors, however, has been changing from time to time. On the one hand, capital movements avail both investors and recipient countries; on the other hand, however, capital movements make the emerging economies vulnerable in case of a sudden stop and reversal because of the economic weakness of emerging markets.

For this reason, on the one hand, emerging economies try to best benefit from capital inflows; on the other hand, try to eliminate their economic weaknesses against sudden stops and reversals. Relative importance of internal and external factors which determine capital movements are crucial for emerging economies in terms of policy implementations. In order to reduce their vulnerability and weakness, some emerging countries adopt floating exchange rate regime, some emerging countries strengthen their financial systems to alleviate abrupt capital inflows and to cope up with sudden capital outflows, and some of the countries limit capital inflows and outflows (Moreno, 2000).

In general, capital inflows stemming from internal (pulling) factors are more stationary and predictable than the external (pushing) factors. If pulling factors are at the forefront emerging economies are able to minimize their expansion-constriction cycle with implementing sound and healthy macroeconomic and financial policies. In contrast, if pushing factors are at the forefront, emerging economies may remain vulnerable to the unexpected external shocks even if they pursue prudential policies. Hence, emerging economies have to take additional measures in order to cope up with external shocks.

Researches on this issue have put forward the contribution of internal and external factors; however, relative contributions of these factors show an alteration from time to time (Moreno, 2000). There are two arguments in the literature on the relative importance of internal and external factors. Some economists, such as Calvo, Leiderman and Reinhart (1993), argue that although pull factors were important in the flows of the early 1990s, the main determinants of the capital inflows are push factors. Calvo, Leiderman and Reinhart (1993) investigated the U.S. portfolio flows to Latin America and Asia. Low international interest rates, which in turn favored the creditworthiness position of emerging markets, and recessions in major industrial economies, which made more appealing international investments, played important

roles in the early inflows of the 1990s according to the authors. As suggested by Calvo, Leiderman and Reinhart (1993), Fernandez-Arias (1994) found that the drop in interest rates and the slowdown in economic activity were important in explaining capital flows towards these economies. However, pushing factors, which were seen the primary factors in the beginning of 1990s, displaced with pulling factors in the mid 1990s. Although the downturn in the U.S. interest rates during 1990-1993 had contributed significantly to these early flows, countries with strong fundamentals have received the largest proportion of capital flows. Looking at portfolio investment for Latin America and East Asia, increase in the U.S. interest rates did not retard the capital inflows to these countries. Calvo, Leiderman and Reinhart (1993) showed that there was a high degree of co-movement between capital inflows and the U.S. interest rates during 1990-1993. However, this negative co-movement turned to be positive during 1993-1995 suggesting that the importance of pull factors (Moreno, 2000).

There were plenty of researches which have been done by economists whether internal or external factors are important in determining capital flows. Despite the lack of a uniform explanation, in several researches it was emphasized that both factors are important in some periods, but the prominent factor determines the capital flows.

1.3. Sustainability of Capital Movements

During the 1990s, emerging economies have benefited from surge in capital inflows. Because of the convenient market conditions emerging economies could easily access to the international financial markets. High proportions of saving in developed economies and the search for international diversification of investment portfolios make things easier for emerging economies in accessing international financial markets. Besides these favorable conditions macroeconomic stabilization programs that have been implemented by emerging economies were helpful for emerging economies to continue to attract international capital flows (IMF, 1997).

Factors that determine capital flows are vital in sustainability of capital movements. If capital flows stemming from internal factors, such as economic

reforms and sound macroeconomic performance, the possibility of sudden outflows from emerging economies dwindle and emerging economies are able to sustain capital inflows even in case of a recovery at economic conditions in developed economies. In such a case, capital inflows may sustain even if an unfavorable economic conditions exists in international economy and developing countries can prevent capital outflows with economic reforms and sound economic policies. Policy makers in emerging economies should be well-prepared to the possibility of change in external conditions, if capital inflows to emerging economies are stemming from push factors, such as a decrease in interest rates in developed economies.

Compositions of capital movements are also important in sustainability of capital flows. If capital inflows occur in a fashion of foreign direct investment (FDI), it indicates that macroeconomic performance at the forefront in determining the capital inflows. This situation shows capital flows are not affected short-time negative external shocks and unanticipated events, and will remain in the country. However, if capital flows have characteristics of short-time speculative investment and portfolio investment, and aim high return in short-time, they obtain arbitrage opportunity in emerging market and leave the country with its profit. In 1990s capital movements in emerging economies due to high spreads left these countries because of deterioration in economic situations.

A key systemic issue is whether the high level of capital flows and improvements in conditions affecting market access are likely to be sustained or whether the market conditions are predominantly driven by cyclical developments in the major industrial countries that are prone to be reversed. Even if private capital flows to emerging markets are based on sound economic fundamentals, such flows are likely to be cyclical because they are driven by divergent macroeconomic conditions in capital-importing and capital-exporting countries. Furthermore, because capital flows are partly determined by political and economic developments, sustainability of these flows become highly erratic. Sound macroeconomic and financial policies are vital for ensuring sustained market access (IMF, 1997).

As it is seen obviously, the amount of portfolio investments in proportion to foreign direct investments and reckless economic policies can create desperate straits for both countries' economies and the capital itself.

2. THE EMERGING MARKET CRISES IN THE 1990s

Along with the Mexican "tequila crisis" in 1994 and the Asian financial crisis in 1997 capital outflows from emerging economies gained more importance and the role of capital movements especially sudden capital outflows that tipped the economies into crisis have increased in comparison to the past.

When it is examined from the historical perspective, capital movements in the 20th century have more potential in terms of throwing the economies into a crisis according to 19th century. There was a big difference between globalization of 19th century and 20th century. In 19th century globalization arranged with a real commodity, namely with gold standard. However, globalization in 20th century has been responsive to value of exchange of national currencies. Value of exchange of national currencies, in this period, has not been supported by gold or any commodity and they all are composed of nominal value. The ambiguity of international ratio of exchange had important risks in terms of process of system. Sensitivity of capital movements to the nominal values broke up the relationship between real and financial sector and weakened the relationship between current account and capital movements. Although this ambiguity has encouraged speculative earnings and financial capital mobility, it has not supported production (Yeldan, 2002)

Financial crises happened in emerging economies in 1990s had several similarities. High short-term and foreign denominated indebtedness of public and/or private sector in proportion to international reserves was the common characteristic of these crises. Many developing economies have liberalized their financial markets because of the fact that the needs for the resources of developed economies. This liberalization has been put into practice before the fulfillment of the necessary precautions that would provide soundness and deepness to the financial markets. After the liberalization of financial markets, large amounts of short-term debts and insufficient international liquid assets have caused vulnerability and confidence lost. This situation has ended up with capital flight and thus financial crises countries in question (Rodrik and Velasco, 1999)

Delay in macroeconomic measures which should have been taken in economies faced with capital outflows, made these countries more vulnerable and increased risk

premium of these countries. Consequently tremendous amount of capital left these countries which had served attractive terms for investment in the past. Due to these large amounts of capital outflows, international reserves of these countries decreased very low and dangerous levels. As a consequence of these developments countries in question experienced different degree of crises, abandoned fixed exchange rate and let their currencies to float (Edwards, 2000).

Although every crisis did not cause economic jolt across the world, these recent monetary crises had profound effects than the past crises. In an era of high capital mobility a diminutive change in portfolio allocations among emerging economies caused large amount of capital surge. On the one hand these sudden outflows lead the countries exchange and interest rate adjustments and on the other hand these outflows decrease the countries' credibility and create a viscous circle for these economies (Edwards, 2000).

2.1. Debate on the Relative Importance of Macroeconomic Imbalances and Financial Panic

In recent years, especially in 1990s, successive financial crises have occurred in emerging market economies. These crises had several resemblances in many aspects. Common characteristics of these crises were the sudden stop of capital inflows and pursuing severe depreciation of domestic currency. High level of domestic interest rates and heavy reliance on rigid exchange rates led large volumes of international capital to move into emerging economies. These movements helped to finance current account deficits and brought about stock market booms (Edwards 2000).

However, for a number of reasons these movements slowed down and reversed. In a highly integrated capital markets these reversals have a deeper impact on economies than in the past. A small adjustment of portfolio funds leads to severe depreciation in exchange rates and drastic increase in interest rates, drying external financing opportunity and thus run into difficulty corporate and financial sectors. This situation accompanied by a credibility problem, generates overshooting problem countries in question (Edwards, 2000).

There was a debate on the causes of recent emerging market financial crises whether these crises stemming from weak macroeconomic fundamentals or the main element of these crises was the pure financial panic. According to the view that emerging markets financial crisis stemming from weak macroeconomic fundamentals, almost all of the crisis economies suffered from bad monetary and fiscal policies and went through balance of payment problems. Government guarantees to domestic private borrowing, provided incentives for the private sector to borrow too much and to invest unproductive and excessively risky activities. This situation led to moral hazard and adverse selection problem and increasing implicit government obligation terminated with the collapse of the regime (Mishkin, 2001). On the other hand, the macroeconomic imbalances were not sufficient to clarify the financial crises in emerging economies. According to this view, the main element of these crises was the financial panic and self-fulfilling nature of the events. Crisis countries had banks and financial institutions that borrowed short term to finance projects. If creditors had remained confident, this policy would have been work and banks and other financial institutions rolled over their loans. When, however, creditors panicked and demanded their deposits, banks and other financial institutions faced with the sudden need for the liquidity. When these institutions were unable to get funds from capital markets in order to sustain their debt-servicing, process ended in bankruptcy. Thus, recent emerging market crises were capital account crises not current account crises. (Ortiz, 2002)

According to bad policy view, imprudent government policies ultimately end in financial crisis. These crises were solvency crises. Absence of effective regulations and precipitate financial liberalization before the establishment of appropriate regulatory body was the main motive behind financial crises in developing economies. Implicit or explicit government guarantees to private debts encourage the private borrowers to invest risky activities. These risky activities keep going as long as the government bolsters private debts. At some point, however, government reaches a point and depletes the available funds and can no longer guarantees private debts. When private agents understand that government has no available funds to guarantee further borrowing there must be an attack to government insurance funds. Creditors want to change their liabilities for the government insurance funds

(Mishkin, 2001). Bad policy view argues that financial liberalization played a very important role to go into crises in developing economies. Financial liberalization have allowed borrowers to take excessive risk and engaged risky activities by eliminating regulations and controls. Lifting restrictions on interest rate ceilings, easing of reserve requirements and promotion of entry and competition in financial sector resulted in dramatic increase in lending and international capital inflows (Mishkin, 2001).

On the other hand, financial panic view argues that economic fundamentals and structural feature of the economy may not have been satisfactory to explain in each crisis. (Ortiz, 2002) Inflation, budget deficit, and an overvalued currency did not exist and thus, was not the reason for the financial crises in Mexico and the South East Asian countries (Miyao, 2004). However current account deficits, liquidity problems conjunction with lending expansion that had been financed by financial capital inflow and the deterioration of financial institutions' balance sheets were the obvious culprits behind the financial crisis of each country. In recent crises a confidence loss occurred among international creditors and domestic borrowers, thus they refused to roll over credits and keep their deposits in financial system. This situation might have stemmed from several reasons, such as political turmoil, bad news about a particular bank or corporation. The main problem is refinancing both private and public debt. Countries have confronted with the withdrawals of short-term funds and this episode caused to costly liquidations, asset price collapses, domestic bank runs and credit crunches. The magnitude, maturity and currency composition of debt are significant and balance sheet issues are the focal point in explaining these crises (Chang and Velasco, 1998).

Market expectations are the key factor in understanding recent crises. The problem is a maturity mismatching problem. Panic among the financial systems' agent caused to an attack to liquidity and forced the financial system to liquidate investments at a loss. If a country's short-term foreign denominated liabilities exceed its foreign denominated assets, country would face with liquidity problem. Financial panic supporters argue that recent emerging market crises were the liquidity crises not the solvency crises those who bad policy view supporters oppose. If a solvent borrower is unable to get new funds from capital markets to fulfill its obligations a

liquidity crisis occurs even if this borrower has the net worth to repay the debt in the long-run (Ortiz, 2002). The unwillingness or the inability of capital markets to provide fresh funds to the illiquid but solvent borrower is the key factor in liquidity crises.

Like bad policy view, financial panic camp asserts that financial liberalization is the key to understand emerging market crises. The liberalization on lending, foreign investment, interest rates, in addition to fixed exchange rates, generally leads to financial capital inflow owing to high interest rates. Financial liberalization caused to credit booms and led the banks to offer high yields on saving deposits in order to finance their lending activities. The increase in lending without appropriate management training, absence of adequate knowledge in risk assessment tools on loans, and the existing weak financial regulations leads to excessive risk-taking by local financial institutions (Mishkin, 2001). This situation has inflated banks short-term liabilities, hence aggravated international illiquidity. According to financial panic view financial liberalization makes countries more prone to crises but in contrast to the bad policy view it is also improving the welfare of the economies. If additional measures are taken by the emerging economies, it compensate for the accompanying increase in financial fragility (United Nations, 1999).

Since the financial panic view sees the recent crises as liquidity crises, an effective Lender of Last Resort will be beneficial in struggling with the financial crises. An effective Lender of Last Resort provides a guarantee to the investors by extending hard currency credit to countries experiencing crises. Since the private agents would be reassured that their claims would ultimately be met, it would stabilize the expectations and prevent confidence crises. Bad policy view, however, assert that, such a policy implication would only serve to finance bad investments and lead to moral hazard problem. To deal with crises adjustments programs should be implemented rigidly (Ortiz, 2002).

2.2. Reasons of Financial Crises

Two outstanding features have come to the forefront in emerging market crises: massive reversals in capital account and collapse of an exchange rate peg. Countries

such as Turkey, Brazil, Argentina, Mexico, Korea, Russia, Malaysia and Thailand have experienced the collapse of capital account, which were among the main recipients of the international private capital. (Ortiz, 2002: 11) But, as the crises were to show, emerging economies are still at the early stages of how they can best benefit from global financial markets. This situation made these countries dependent on continuation of international capital flows and vulnerable to a change of sentiment among the foreign investors. The collapse of an exchange rate peg has marked almost all recent crises. Moreover an exchange rate peg was the cornerstones of stabilization programs almost in all crises countries. These crises were not the same as a payments crisis in 1970s which requires IMF rescue packages. Emerging economies were not able to avoid from financial distress by letting their currency to float and reducing interest rates, like industrial economies. Expectations of a stable exchange rate, encouraged by governments and monetary authorities, influenced the composition of balance sheets of financial and non-financial sectors. Owing to excessive exposure to exchange rate risk of balance sheets, banks and firms have become vulnerable to the movements in currency, thus severe banking, corporate and sovereign debt crises have experienced (Roubini and Setser, 2004).

In "classical case" fiscal deficit was the main reason of balance of payment crises. Continuing money issuance in order to compensate fiscal deficits led to weakness in central bank's balance sheet, then in turn, depleting its international reserves. When monetary authority can no longer support the currency peg, it was attacked by speculators. Thus, in the classical case wrong fiscal policies were the main reasons of macroeconomic disequilibrium.

However, when crisis hit Korea, Indonesia and Thailand, private banks, financial institutions, and corporations experienced the most severe payment difficulties (Miyao, 2004). The widespread notion that increasing indebtedness in public sector was the major factor of financial vulnerability was shaken off its foundation. The argument was that private agents were better at assessing the risk they involved. When payment problems emerge, these would be the problem of both given firm and lender and it remains specific issue between them and need not to generate any general effects at whole scale. The systemic collapse of corporate sector, however, affected the banking sector, and to bail out banking system

increased the government's own debt. Implicit or explicit insurance of governments to deposits makes the private sector liabilities as government own liabilities in case of insolvency. As a result, government debt rose when a solvency problem emerge among private sector. This led to an increasing budget deficit and eventually monetization of this deficit (Mishkin, 2001).

However, it is hard to differentiate between banking, sovereign payment and corporate crises. Much of the private indebtedness was intermediated through domestic banks. In some cases, domestic banks borrowed from abroad to purchase the government's domestic debt. With open capital account banks provided credit to risky projects with sources coming from abroad. Unless adequate prudential regulations and supervisions put into practice, these unhedged positions taken by banks are associated with significant banking crises. In some cases, banks accumulated large amount of government debt and at a time of insolvency sovereign debt crises triggered banking crises (Mishkin, 2001).

Large falls in the currency's value also creates serious payment problems. The need to let the currency float from a previous peg creates broader loss of confidence in emerging economies. Once investors realize that a central bank is less likely to take the steps to defend the currency, expected profit from selling the currency will rise (Calvo, 2006). Expectation of stable currency influenced the composition of the balance sheets of banks and firms. This expectation led the banks and firms engaged in foreign currency and thus, excessive exposure to exchange rate risk and became highly vulnerable to exchange rate movements. Loss of confidence indicated a sharp decline in international capital flows thus created financial difficulties for banks, firms and sovereign governments, which dependent on continuous access to market financing both to cover ongoing current account and budget deficits and to refinance existing debts. Increasing interest rates to prevent capital outflows and to defend domestic currency led to a further deterioration in banks balance sheets and raised the cost of financing for corporate sector (Mishkin, 2001).

Most emerging market crises have shown common characteristics, although each crisis has its own specific reasons. In sections below, I will address the sources of vulnerability and factors that promote the financial crises in emerging economies

2.2.1. Macroeconomic Imbalances

Macroeconomic imbalances were the main point for most emerging economies in their financial crises. Once financial liberalization was adopted, large amounts of international capital have flowed into emerging economies. Emerging economies have financed their budget and current account deficits with these international capital inflows. In order to finance budget and current account deficits, a country has to attract foreign direct investments or net inflows of portfolio investments into its economy or borrowing from abroad. The current account deficit is equal to a country's capital account surplus, net of reserve accumulation. The current account balance is indicated by the difference between national savings and investment. A budget deficit is equal to public dissavings and, unless private saving rises or private investment falls, it will lead to a current account deficit. Budget deficit usually have to be financed by selling government debt to investors, either home or abroad. The continuing need to finance fiscal and current account deficit is a source of vulnerability for emerging economies. Public finances a clear source of vulnerability in the cases of Brazil in 1998, Russia in 1998, Argentina in 2000-01, and Turkey in 2001. Governments of these countries financed their fiscal deficits by issuing short-term debt. Operating of the system has become dependent on the creditors' eagerness to roll over their large amounts of debt at reasonable interest rates (Ortiz, 2002).

These countries in question, all showed high levels of indebtedness and continuing fiscal deficits. In Russia, public debt reached to 35 percent of its GDP. This ratio could have been seen reasonable unless fiscal deficits had reached to 7.5 percent of GDP. In Brazil, fiscal deficits reached a dangerous point and high level of public debt and its contractual characteristics made the government vulnerable to increases in interest rates. In Argentina, public debt reached to 51 percent of GDP, with a consolidated deficit of over 3 percent of GDP in 2000 and 2001. In Turkey, the ratio of public debt reached to 60 percent of its GDP and its fiscal deficits reached to 16 percent of its GDP. (Ortiz,2002)

All these countries, mentioned above, presented poor performance in sense of fiscal outlooks, and the loss of confidence of investors closed their access to private financial markets. Borrowers that depend on short-term debts are at the hands of the

creditors. In order to finance their short-term debts, creditors should be willing to finance their short-term debts. However, creditors choose to get out in bad times and reject to rollover short-term debts. Consequently an emerging economy not only has to find new funds to cover ongoing deficits but also that it must come up with money to pay off its existing debts. Cost of finding new funds increases and ability to pay its debts decreases in a situation of adverse shock (Roubini and Setser, 2004).

However, huge budget deficits and as a consequence fiscal-driven crises do not fit all situations. The Asian-crisis countries showed that a booming private economy could lead to current account deficits and accumulation of external liabilities in the absence of budget deficits. In the cases of Mexican 1994 crisis and Asian 1997-98 crisis public financing are rather healthy. Thailand and Korea were the most outstanding examples of private sector driven crises. In Thailand public debt-to-GDP ratio was 5 percent and its fiscal deficits was only 0.5 percent of GDP. Like Thailand, in Korea public debt-to-GDP ratio was 13 percent and its fiscal deficits only 0.9 percent of GDP. However, private sector had been accumulating large amount of debts in these countries. (Ortiz,2002)

On the other hand, countries like; China, Singapore, Hong Kong and Taiwan avoided severe financial crises in 1997-98 owing to their current account surpluses. As a consequence of current account surpluses these countries had less need new net financing and had not accumulating large stock of foreign debt.

2.2.2. Financial Contagion

Another element that was seen in recent emerging market crises was that of contagion. Contagion is a difficult concept to define. “Contagion in general is used to refer to the spread of market disturbances –mostly on the downside- from one (emerging market) country to the other, a process observed through co-movements in exchange rates, stock prices, sovereign spreads and capital flows” (Dornbusch, Park and Claessens, 2000: 4). As it was mentioned before, there is a debate on causes of financial crises. According to some economists financial crises do not emerge solely an underlying financial weakness. International contagion can play a major role in the transmission of financial crises. There were several cases in which a balance of

payment crisis in a country was followed by intense pressure on the balance of payments of other countries. Contagion may occur for several reasons:

- External shocks play an important role on transmission of the crises among emerging economies. Many emerging economies depend on access to external capital markets in order to finance their large current account or fiscal deficits or to refinance their existing debts. International investors are more willing to lend to emerging economies or buy their existing bonds when interest rates are low in developed economies. An adverse shock, like an increase of interest rates in developed economies, affects emerging economies in a negative way. In the case of an increment in interest rates in industrial economies, international investors prefer to lend to industrial economies and will be less willing to lend emerging economies (Pritsker, 2000). Deterioration in the terms of trade also affects emerging economies in a negative way. Some emerging economies depend on single commodity, thus are exposed to commodity price shocks. If a country running large current account deficits, will be more vulnerable to adverse commodity price shocks. Like current account deficits, large budget deficits expose the emerging countries contagion, as well. Countries will have less ability to absorb higher interest rates since the increasing interest rate will deteriorate budget deficit further (Roubini and Steser, 2004). Large indebtedness will also increase financial distress in the case of a negative interest rate shock. Such difficulties for emerging economies to finance their current account and fiscal deficits compel these economies short-term borrowing at high interest rates. Borrowing costs will sharply increase and ability to pay their debt will reduce. Countries that finance themselves with foreign-denominated debt fall into financial difficulties in the case of an adverse shock. An adverse shock that leads to depreciation in the domestic currency increases the debt burden of the country. For example, if an emerging economy depends on one commodity, that is great deal of its current account deficits and budget deficits financed

by one commodity, an adverse price shock to that commodity has a direct effect on to the country's income and thus economy at whole. The country will earn less income, and its revenues will fall. This deteriorates the current account deficits of the country and its domestic currency will likely depreciate further. Depreciation of domestic currency will also reduce the government's revenues. As a consequence of this depreciation the debt burden of the country will increase further and the effects of shock will magnify (Roubini and Setser, 2004).

- The adoption of similar policies is important in contagion. A crisis in one country can stress the risks of a certain financial vulnerability at another country. If economic outlook turn out to be unsustainable in one emerging economy, investors may interpret that it will also be the case in the other countries. (Ortiz,2002) Thus they may decide to reduce their exposure to countries with similar financial vulnerabilities. If the country is not prepared for such an adjustment it can be tipped into a vicious circle.
- Direct trade or financial linkages between countries may cause contagion. (Ortiz,2002) If one country devalues its currency, its trading partner will loose competitiveness. Thus investors will put pressure on countries currency and policymakers may decide to devalue the currency for not to loose export market share (Glick and Rose, 1999).
- Institutional practices lead investors to respond to turmoil in one market with rapid cut-backs in exposure to other markets. (Ortiz,2002) Investors may have exposure many different emerging markets. Losses in one country may lead the financial institutions to pull back from others for several reasons. Losses may deplete a bank's capital and lead the bank to cut back its exposure to other risky borrowers. To cover their losses financial institutions may attempt to liquidate positions in other emerging economies. It may lead the investors to

pull their money out of emerging market bond funds, forcing fund managers to sell their holdings of other emerging economies. Losses by a leveraged hedge fund may lead its creditors to call in their loans and demand that the hedge fund deleverage. To meet the cash need, the hedge fund may lead to sell its most liquid assets. Selling these funds leads the prices down and spreads up. This procedure losses for all financial institutions with similar positions and may therefore trigger further selling (Dornbusch, Park and Claessens, 2000).

- Finally, panic and herd behavior lead to contagion in financial markets. Financial panic and herd behavior have attracted attention in recent years. Academic circles have been paying more attention financial panic and herd behavior in order to understand recent emerging market crises. The reason is that they are unrelated to country fundamentals and have a self-fulfilling nature. Academic circles have focused on baseless fluctuations in a country's asset prices and tried to understand why investors do not discriminate properly among countries with different fundamentals (Dornbusch, Park and Claessens, 2000). A clearest case of financial panic and herd behavior was seen in Russian crisis in 1998. Although there were no any significant trade and financial linkages between Russia and Latin American countries, Russian crisis tipped Brazil into its balance of payment crisis. Russian crisis also affected the European transition economies, but this situation can be explained with the direct regional linkages, like trade and financial linkages. However, in the case of Brazil there were no any fundamental linkages between Russia and Latin American countries. In contrast to Russian crisis, the Turkish and Argentinean crises had not any significant effects except the countries which have had direct linkages the crisis countries. It is claimed that Turkish and Argentinean crises were broadly anticipated, so the investors took required measures against the crises. On the contrary, Russian crisis was unanticipated and it surprised the

investors and policymakers and thus it had large financial effects (Ortiz, 2002).

2.3. Developments in the Financial Crisis Literature and Balance Sheet Analysis

Recent capital account and currency crises in emerging markets have led economists to rethink the causes of the crises. The standard "first generation" model explained a capital account and a currency crisis on the basis of fundamental macroeconomic imbalances and inconsistence policies. Governments' poor fiscal policies brought about substantial budget deficits and led them to borrow from central bank to finance these deficits. This situation led to the loss of central bank's reserves then in turn abandonment of the exchange rate peg (Edwards, 2000).

"Second generation" models claimed that a crisis may occur independent of the economic fundamentals. These models laid emphasis on investors' expectations and "multiple equilibria". An inconsistency among the governments' objectives is a serious problem. A government may want to promote price stability and may commit to the exchange rate peg in order to achieve its objective. High interest rates, however, to defend the exchange rate may deteriorate fiscal deficits and may reduce economic growth and thus, increase unemployment. Government may want to reduce costs of interest payments and rate of unemployment and this objective is more likely to be attained by flexible exchange rate. In this situation government will evaluate the costs of maintaining fixed exchange rate regime and the costs of maintaining the flexible exchange rate regime. In these models there is an interaction between government's behavior and public behavior. If investors doubt the government's commitment to the peg, the cost of government to defend the peg increases. An unexpected shift in expectations about the sustainability of the fixed exchange rate can guide the government change its exchange rate policy and validate public expectations. In such a manner combating against speculative attacks is also costly for the government. Put in a nutshell, crises are the result of policy choices not the result of reserves reaching critical levels (Roubini and Setser, 2004).

Table: 2.1. Asian Economies Overall Budgetary Surplus/Deficits

	Indonesia	Philippines	Thailand	Korea	Malaysia
1990	-0.9	-3.5	4.8	-0.6	-2.9
1991	-.0.7	-2.1	4.3	-1.5	-2.0
1992	-1.1	-1.2	2.6	-0.5	-0.8
1993	-0.5	-1.5	1.9	0.6	0.2
1994	1.0	1.0	2.7	0.3	2.3
1995	2.2	0.6	3.0	0.3	0.8
1996	1.0	0.3	0.9	0.2	0.7
1997	0.5	0.1	-1.5	-1.4	2,4
1998	-1.7	-1.9	-2.8	-3.9	-1.8
1999	-2.5	-3.8	-3.3	-2.5	-3.2
2000	-1.1	-4.0	-2.2	1.1	-5.7

Source: Asian Development Bank, Key Indicators 2006

Fiscal imbalances, however, could not explain 1997-98 Asian crisis. Imbalances at the private sector were the key point of the crisis. Currency and banking crisis were in connection with each other. Excess short-term obligations relative to liquid assets played a major role in Asian crisis. Investors' expectations that Asian economies were not able to honor their debt due to lack of liquid assets triggered Asian crisis (Kawai, Newfarmer and Schmukler, 2003). Asian crisis was dubbed largely as a self-fulfilling "liquidity run". The emphasis on the difference between short-term debt and liquid assets in Asian crisis pioneered "third generation" models. "Third generation" models focused on the importance of balance sheet effects in financial crises. "Third generation" models underlined the importance of maturity and currency mismatches and fleshed out how currency mismatches contribute to runs and large output falls in the incident of currency depreciation (Roubini and Setser, 2004). Balance sheet analysis stressed how the mismatches between a country's liabilities and assets- especially maturity and currency mismatches- create risk for emerging economies. According to balance sheet analysis, two countries with identical debt to GDP ratios will not be equally vulnerable to financial crises. Countries with short-term and foreign currency

denominated debt will be more vulnerable to financial crises than the countries with long-term and local currency denominated debt (Roubini and Setser, 2004). In sections below I will touch on these mismatches in more detailed.

2.3.1. Maturity Mismatches

If a country's assets are long-term and its liabilities are short-term we can simply mention about maturity mismatches. If a country's short-term liabilities are high, the needs to refinance its liabilities and the frequency of the interest payments the country has to fulfill increases. It also shows in the case of a financial turmoil how quickly investors can run if they lose confidence. A maturity mismatch occurs if there is an inconsistency between the term structure of debts and the term structure of assets (Allen and et.al., 2002:15-16). In such a case, the risks for a firm, a bank or a government are not being able to roll over its short-term foreign debts. In some cases, pressure come through short-term government debt such as Mexico. In 1994

Table: 2.2 Short-term Debt and Total Debt

	Indonesia	Korea	Malaysia	Philippines	Thailand	Total
Total Debt (US $ Millions)						
Jun-90	20.076	23.369	6.864	9.055	11.675	71.039
Jun-94	30.902	48.132	13.874	5.990	36.545	135.443
Jun-97	58.726	103.432	28..820	14.115	69.382	274.475
Short-Term Debt (US $ Millions)						
Jun-90	10.360	15.528	1.761	3.019	7.026	37.694
Jun-94	18.802	34.908	8.203	2.646	27.151	91.790
Jun-97	34.661	70.182	16.268	8.293	45.567	174.971
Short-term Debt as % of Total Debt (US % Millions)						
Jun-90	51.60	66.45	25.66	33.34	60.18	53.06
Jun-94	61.10	72.53	59.12	44.17	74.29	67.77
Jun-97	59.02	67.85	56.45	58.75	65.68	63.75

Source: Chang and Velasco, 1998, p: 58.

when the Mexican crisis erupted Mexico had nearly 30 billion dollar short-term debt and it had only 6 billion dollar reserves. However, in some cases, pressures came through banking systems, due to the short-term liabilities of banking sector. Korea got into problem since its banking system's short-term external liabilities largely exceeded the government's foreign-currency reserves (Allen and et.al., 2002:15-16).

If a country's short-term debts in foreign currency are higher than the total foreign currency reserve in the hands of central bank we can talk about illiquidity. A high rate of illiquidity is a sign of central bank's incapability to simply meet its short-term foreign liabilities via its foreign currency reserve. If the ratio of M2 is high relative to central bank reserve of foreign currency, we can also mention about illiquidity (Chang and Velasco, 1998). The high ratio of M2 creates a potential problem if the residents loss their confidence to the stability of domestic currency. In the case of a financial panic if all residents want to convert their local currency into foreign currency, it is not possible for central bank to meet that demand. A high degree of illiquidity can make countries vulnerable to financial crisis and contagion. As we mentioned earlier high ratio of M2 is an indicator of illiquidity. Asian economies were the outstanding examples of this case. The ratio of M2/reserves had been high or increasing in each case (Chang and Velasco, 1998).

Table: 2.3. M2 as a Multiple of Reserves

	Indonesia	**Korea**	**Malaysia**	**Philippines**	**Thailand**
1990	6.16	6.48	2.91	16.33	4.49
1991	5.51	8.33	2.99	4.82	4.10
1992	5.61	7.20	2.64	4.35	4.10
1993	6.09	6.91	2.09	4.90	4.05
1994	6.55	6.45	2.47	4.86	3.84
1995	7.09	6.11	3.33	5.86	3.69
1996	6.50	6.51	3.34	4.50	3.90

Source: Chang and Velasco, 1998, p: 58.

2.3.2. Currency Mismatches

Currency mismatches can be described as discrepancies in the values of the foreign currency denominated assets and liabilities on the balance sheets of households, firms, the government and the economy as a whole (Eichengreen, Hausmann and Panizza, 2003). When a firm or a government borrows in foreign currency but earns revenue in local currency a currency mismatches generally arises. If liabilities are denominated in foreign currency, while assets are denominated in local currency, it may cause severe losses in the case of a severe depreciation in the value of domestic currency. Currency mismatches are generally occurred in emerging economies because emerging economies' agents are unable to borrow in local currency (Allen and et.al., 2002: 15-16). This situation called as "original sin" in literature. It refers the situation in which the domestic currency cannot be used to borrow abroad or to borrow long-term, even domestically. In such a situation, financial vulnerability is inevitable because all domestic investments will have either a currency mismatch, or a maturity mismatches. However, we should separate original sin from aggregate currency mismatches. As mentioned above, original sin defined as the inability of a country to borrow in its own currency while aggregate currency mismatches refers the ratio of foreign currency denominated gross debt to the foreigners as a share of total gross debt to foreigners. When banks, firms or government of a country suffering from original sin borrow abroad, they acquire a gross foreign debt denominated in foreign currency. However, in such a manner we can not directly say that there is a currency mismatch because it depends on the actions taken by the government. If government accumulates high rate of international reserves, the country can be prevented to incur aggregate currency mismatch (Eichengreen, Hausmann and Panizza, 2003).

If a substantial portion of debts is denominated in foreign currencies, as is often the case in emerging economies, a mismatch between the foreign currency debts and revenues can lead to an increase in real debt burdens without an equal increase in the ability to pay.

Table: 2.4 Corporate Debt Structures

Foreign Exchange Debt in Percent of Total Debt	
Argentina	51.4
Brazil	11.1
Chile	34.9
China	21.3
Colombia	53.9
Chez Republic	20.4
Hungary	n/a
India	20.9
Korea	12.2
Malaysia	29.8
Mexico	16.5
Poland	22.0
Russia	46.8
Thailand	30.8
Turkey	12.8
Latin America	33.6
Asia	23.0
India and China	21.1
Europe	20.4
All Emerging Economies	25.7

Source: IMF, World Economic and Financial Surveys, Global Financial Stability Report, 2005, p: 118.

* Individual country ratios are value weighted (by firm's total assets). Regional ratios are equal-weighted averages of country ratios. Note on the small sample bias: the average sample size of market participants for 1993–2003 in the Czech Republic Poland, Turkey, Hungary, and Colombia is less than 10.

In many emerging economies borrowers have sometimes encountered currency mismatches on a large scale. In emerging economies foreign currencies denominated liabilities have often financed with local currency, and generally, the stock of foreign currency denominated assets has been relatively restricted. Foreign currencies denominated debts bring about additional burden to net foreign currency debtor in

the case of a large depreciation. It creates negative income and wealth effect because the size of liabilities increases relative to its assets. Foreign currency debtors seek the way of protecting themselves against currency depreciation by purchasing additional foreign currency assets. This process increases the pressure on the domestic currency and leads further depreciation of the currency (Allen and et.al., 2003).

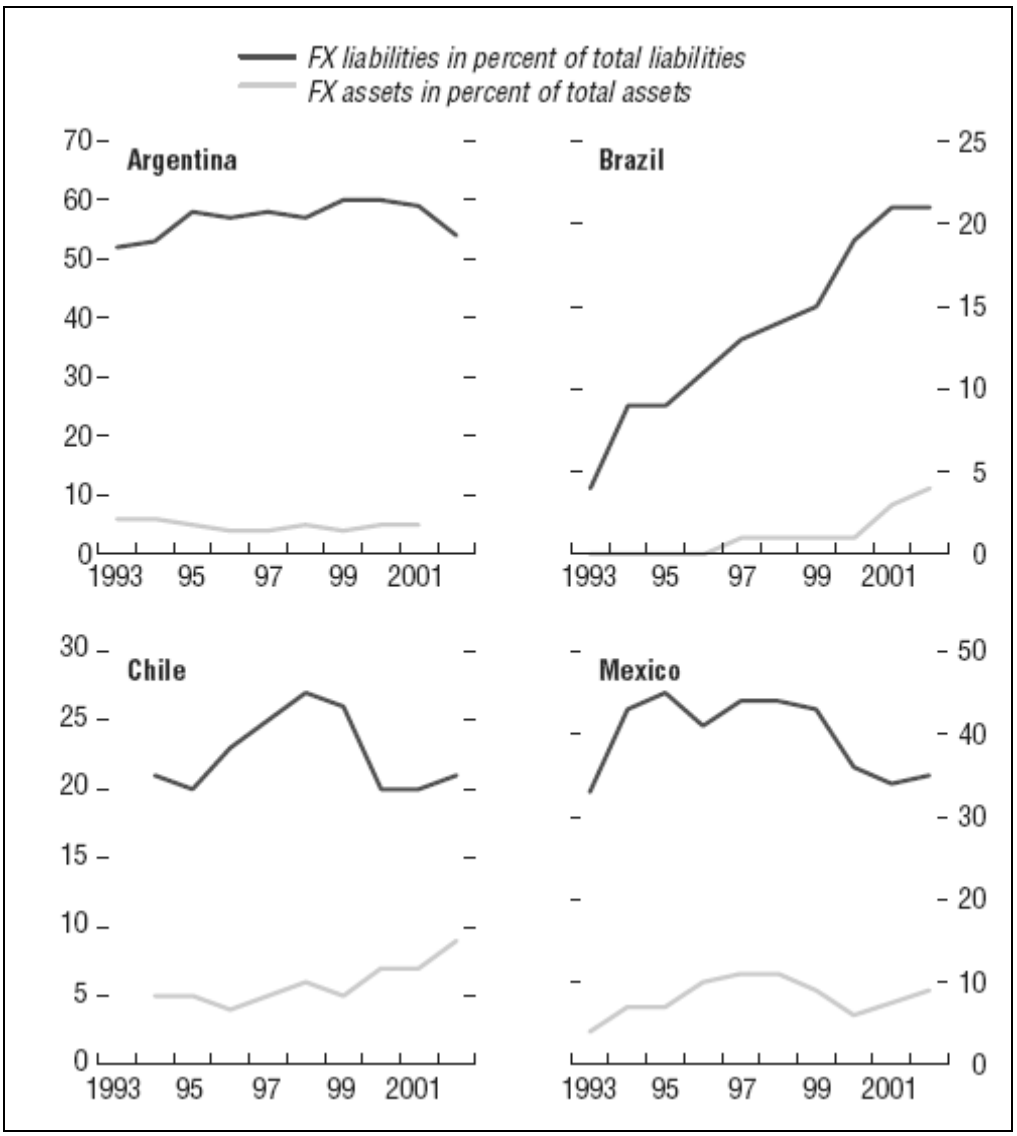

Figure: 2.1. Dollarization of Assets and Liabilities in the Nontradable Sector in Latin America (in percent; equally weighted mean values)

Source: World Economic and Financial Surveys, Global Financial Stability Report, 2005, p: 119.

In such cases, a large depreciation of the domestic currency can destroy much of the net worth of firms and household and initiate a wave of insolvencies, a financial crisis, and a steep fall in economic growth. Unanticipated currency depreciation may have little impact on the balance sheet of the firms in developed economies; on the contrary currency depreciation may trigger a financial crisis in emerging economies. Thailand's financial crisis started with speculators who thought that Thailand's currency would be depreciated. The expectation of depreciation of the currency led speculators to convert the local currency into foreign currency. The government tried to support local currency by buying local currency with their international reserves. However, when the government depleted its international reserves, the currency of Thailand plunged down. The depletion of foreign currency reserves compelled the government to abandon the fixed exchange rate (Allen and et.al., 2003).

As mentioned, currency mismatch is also creates an obstacle in flexible exchange rate regimes by hindering the conduct of monetary policies in case of a crisis and prevent the working of exchange rate mechanism. The process of exchange rate adjustments is likely to be more contractionary in economies that have lots of external – or domestic- debt denominated in foreign currency. Currency mismatches have been a consistent source of financial fragility in emerging economies.

Currency mismatch is not solely stemming from original sin. If capital adequacy ratio is low, risk management and prudential supervision is insufficient, it may lead moral hazard problem. In such a manner banks try to fund themselves in foreign currency at low interest rates. When banks fund themselves in foreign currency and lend in domestic currency in home they expose to currency mismatches and this would make them vulnerable to currency fluctuations. Currency mismatch risk can originate in public sector. If government ignore to hold enough foreign exchange reserves in proportion to its foreign currency liabilities, a currency mismatch problem come to the fore. Or the investors may heavily rely on the exchange rate will remain pegged forever and hence plat down exchange risk and incur the danger of open positions in foreign currency. Unless properly managed original sin may turn into currency mismatches (Eichengreen, Hausmann and Panizza, 2003).

Accumulating foreign exchange reserves, restricting foreign borrowing and operating more flexible exchange rate may help to reduce currency mismatch risk. Put in a nutshell, countries which have strong institutions and manage to implement sound policies can deal with the potential mismatch problem.

2.3.3. Capital Structure Mismatches

If a country relies on debt rather than equity to finance investments, we can talk about capital structure mismatches. In case of a financial turmoil dividends lose value while debt payments remain unchanged, thus, equity provides a buffer in these times. For instance, debt payments are fixed even in bad times like recessions while dividends on equity can be reduced in bad times. One way to avoid this negative impact is to design debt contracts that have "equity-like" features, namely debt payments are low in bad times and high in good times (Roubini and Setser, 2004). In the corporate or financial sector, capital structure risk arises when debt is large in relation to equity, or in the case of banks, loans are large in relation to capital. For the government, when privatization revenue is not used to reduce the accumulation of public debt capital structure risk arises. For the country as a whole, capital structure risk arises when the country relies on debt rather than foreign direct investment and equity portfolio investment to finance a current account deficit. We can best see the risk of capital structure mismatches in Asian crisis. Before the Asian crisis, many Asian economies financed external deficits with debt rather than equity, and at a micro level, firms and financial institutions were extremely leveraged with very large debt to equity ratios and this situation was a cornerstone in going their financial crisis (Roubini and Setser, 2004; Allen and et.al., 2003).

2.3.4. Solvency Risk

Maturity, currency, and capital structure mismatches all increase the risk of insolvency in case of negative shock. When a firm's or a government's assets are not match its liabilities solvency risk arises. In order to avert solvency risk net assets of a firm's need to exceed its liabilities, namely net worth should be positive. When a government is in question, present discounted value of all future fiscal primary

balances should be greater than the current stock of net government debt. A government can create net assets by generating primary fiscal surpluses. Thus, when evaluating a government's solvency, one should look to the ratio of government's debt to GDP (Allen and et.al., 2003). We can not say weakness in a firm's or a government's financial structure is the only source of risk. But recent experience implied that balance sheet weakness can be a significant independent source of risk, and financial weakness can overcome other source of strengths.

Balance sheet weaknesses can also increase the economic constriction connected with a shock. For instance, in case of devaluation real economic constriction will be more severe if there is a heavy reliance on debt rather than equity. Aggregate supply falls as firms with weakened balance sheets are unable to borrow to finance production, and aggregate demand falls as the credit crunch limits the ability of consumers and firms to borrow to finance the consumption and investment (Allen and et.al. 2003; Roubini and Setser, 2004).

2.4. Propagating of Crises

In recent years balance sheet analysis has become more important in understanding the dynamics of financial crises. It clarifies how a crisis in one sector of the economy can affects another sector of the economy and triggers a broader crisis. Balance sheet analysis also explains how the maturity and currency mismatches in the balance sheet of a firm's, governments and a country as a whole can create financial vulnerability. The risk that a country is exposed to depend both on the size of the imbalances on a country's financial balance sheet and country's eagerness to take needed actions in terms of policy adjustments at the right time (Ortiz, 2002).

Maturity, currency and the capital structure mismatches are important indicators but not sufficient in understanding how problem in one sector of the economy can contagion the problem to the other sectors of the economy. In order to explain contagion among sectors we should consider the risks that arise from domestic debts and the financial interlinkages between the economy's major sectors. The domestic debts of one sector are the assets of another sector. These domestic

debts do not appear in the country's overall balance sheet; nevertheless they generate financial linkages between the major sectors, particularly the government, financial, and private non-financial sectors. These financial interlinkages increase the risk of propagating one sector's troubles to the other sectors and leading a more profound and generalized crisis (Allen and et. al., 2003).

When we look at intersectoral linkages banking system attract great deal of attention in the propagation of the crises. Because banks are much leveraged institutions they are intrinsically susceptible to financial instability. Furthermore, financial health of other sectors such as corporate and household or the government directly affects the financial wellbeing of banks. A mismatch on the balance sheet of the private firms can generate serious problems for the banking system. As it is seen in many emerging economies, the domestic banking sector takes in domestic foreign-deposits from residents. In order to limit their direct foreign currency risk, banks make foreign denominated loans. However, if these firms lack of export revenue a currency depreciation may cause bankruptcy in the corporate sector. The difficulty of the country's firms, in turns, creates troubles for their creditors. Thus, currency risk becomes a credit risk for the banks (Kawai, Newfarmer and Schumukler, 2003). Like corporate sector, if a government heavily finances itself from the domestic banking system, it creates serious risks for financial system in case of repayment difficulty. A loss in currency values creates substantial risk especially when combined with maturity mismatch. Investors know this and they get out of assets and currency at an alarming rate which leads to a large deterioration in asset and currency values. A serious mismatch in the balance sheet – either in terms of maturity or denomination – makes the loss of currency value extremely dangerous. In turn, a large mismatch means that the crisis will be deep and this causes investors to pull out of lending to markets and to deny any further credit to firms (Allen and et.al., 2003; Mishikin, 2001).

The short term loan contracts and their denominations in foreign currencies move the currency crisis into financial crisis in the following way. The devaluation of the currency increases the debt burden of domestic firms, which had foreign debt denominated in foreign currencies. The devaluation reduces the net worth of the financial institutions which can trigger a banking crisis. The devaluation reduces the

capacity of households and firms to pay their debt and, as a result, reduces the assets of the financial institutions. Since the financial institutions finance themselves with the inflow of foreign funds comes as short term loans denominated in foreign currencies, devaluation also raises the liabilities of financial institutions. The decrease of financial institutions' assets and the increase of liabilities together with short term loans denominated in foreign currencies create maturity and currency mismatches for the financial institutions and thus lead to liquidity problem for the financial institutions. This situation may raise the questions about banks' solvency and may create panic, endangering many financial institutions' viability. Another drawback of currency devaluation in emerging economies is that it increases the current and expected rate of inflation. Increase in the current and expected rate of inflation lead to increase in nominal interest rates which weaken the balance sheets of some firms lead to bankrupts for a large number of firms.

Problems of asymmetric information – moral hazard and adverse selection – are aggravated and lending is cut off. This raises interest rates and currency values crash. Market failure as a result of asymmetry of information is larger in asset markets than in goods and services market. The asymmetric information causes panic among investors when any trouble is seen about economic indicators and this panic leads investors to withdraw their financial capital. This situation may push economy into a financial crisis. Another adverse effect of asymmetric information is that it raises the cost of acquiring information on a particular company. Increasing cost of acquiring information reduces the rate of return on investments. Investors want to avoid these costs react in a herd behavior in investing or withdrawing and this leads to sharp boom-bust cycles. In financial crises investors climb the wall because they are aware of the fact that the longer they hold their assets the larger their losses will become. This situation produces market failure which may not be realized in case of a proper assess based on the economic fundamentals. The asymmetric information also allows borrowers to pay high interest rates to high risk projects. The selection of high risk projects to finance and moral hazard problems decrease the probability of loan repayment (Mishikin, 2001).

Deterioration in the balance sheets of banking sector prevents the ability to lend, lead to a decrease in lending activity and therefore economic contraction will

be unavoidable. When financial institutions suffer from deterioration in their balance sheets, they have two ways to pursue. The first way is cutting their lending activity and the other is raising their capital. However, raising capital is a costly way to implement in the midst of a financial crisis. Thus, banks choose cutting their lending activity in case of a financial distress and this choice leads to further contraction in the economic activity (Mishikin, 2001). By reducing loans, firms must reduce their production, thus reducing income and rising unemployment rates, which lead to a reduction in profits for some firms and bankruptcy for other firms. The bankruptcy of some firms worsens the balance sheets of the banks, leads to a further reduction in lending, and starts a new vicious circle. This vicious circle may push some banks into collapse. The collapse of any bank reduces the available information about creditworthy borrowers. Especially in emerging economies these creditworthy borrowers may not find an alternative to finance themselves.

Deterioration in the banks' balance sheets can cause a panic among depositors and this situation may be ended up withdrawals of deposits from banking sector. This process can lead to contagion and causing even healthy banks to fail. The break up in the financial intermediation will cause a decline in lending to productive investment and a further contraction in the economic activity (Mishikin, 2001).

Increased uncertainty about the future economic conditions due to recession or bankruptcy of large corporations or the worry about macroeconomic policies may prompt the financial institutions to cut off their lending activities. Stock market decline will reduce the net worth and collateral of firms which leads banks to reduce their lending activity and thus increase the economic contraction.

As a result of financial interlinkages it is hard to distinguish domestic and external financing crisis. When residents loose confidence to domestic banking system, they typically escape from local assets and move external assets. It is equally difficult to prevent an external crisis from spilling over into the domestic economy. Domestic banks often holds large amount of the country's external-law debt, so an external debt default leads directly to a domestic banking crisis. Domestic residents also try to convert their assets from domestic currency into foreign currency and this adds to pressure on the domestic currency and country's foreign reserves. If the country does not have a large amount of reserves, the reluctance of some short-term

creditors to roll over their debt can guide other creditors to decide to pull out as well. Once a run starts, creditors may pay more attention to country's declining reserves than to its efforts to improve its macroeconomic policies. If all creditors believe others will stay in, they will not run, and a good result is possible. If all creditors run, a bad result is guaranteed. In the extreme cases fears of a crisis may trigger a race among short-term creditors to get out, which itself causes a crisis. (Allen and et. al., 2003; Roubini and Setser, 2004).

Greatly confidence on foreign-denominated debts also can trigger a self-reinforcing downward spiral that turns otherwise a controllable problem into a deep crisis. As in the case of a run, these pressures can strong enough to devastate even an important endeavor to improve policies. For instance, firms that borrowed in foreign currency without having offsetting foreign currency assets often will want to take steps to defend themselves, or hedge, as the risk of the currency peg breaking increases. If firms start hedging by buying foreign exchange before the exchange rate peg breaks, they put further pressures on government reserves. If they wait until the peg breaks, they put additional pressure on the nominal exchange rate and can cause to the overshooting of the exchange rate. The net consequence can be very sharp and disruptive moves in the currency, enormous financial difficulties in the sectors with foreign currency debts, a severe banking crisis, a credit crunch, and a very sharp fall in economic activity. The same destabilizing dynamics can occur, though typically less virulence, if a floating exchange rate comes under unpredicted pressure. The steps private banks and firms take to protect themselves put more pressure on the exchange rates. In order to prevent disruptive crises, countries, whichever their exchange rates are, should follow prudential macroeconomic policies. Countries have to avoid accumulating large amount of liabilities, especially in forms of short-term and denominated in foreign currency that make them vulnerable to sudden stops and capital flow reversals.

3. MONETARY POLICY

The concept of monetary policy expresses the measures employed by governments, central banks, or monetary authorities to influence economic activity, specifically by manipulating money supply and interest rates, in order to attain a set of objectives oriented towards the growth and the stability of the economy. Although countries seek to attain different objectives through monetary policy, in recent years monetary policy especially concentrated on price stability. Price stability refers low and stable inflation that can be ignored by economic agents in the process of long-term decision making. In other words price stability is to find and sustain a price level which does not disturb the economic balance.

Implementation of monetary policies by central banks to provide price stability is very important issue for economies because it is obvious, countries are able to achieved price stability are relatively at a better position than others in terms of economic growth and income distribution. Developed economies are models to this situation in which monetary policies are implemented successfully and independently.

However, implementing an independent monetary policy in emerging economies is not as easy as it is mentioned, especially in a world of high capital mobility. Rapidly increasing financial integration has affected implementation of monetary policy in several ways. The discussion of monetary policy and capital inflows started with the "impossible trinity". Theory indicates that it is impossible for an economy to simultaneously pursue a fixed exchange rate, an independent monetary policy and an open capital account (Bernanke, 2005). Once policymakers have decided to liberalize cross-border capital movements, the choice then is to either fix the exchange rate or have an independent monetary policy. With a highly open capital account, monetary authorities lose independence in setting domestic interest rates. The effectiveness of monetary policy and its transmission would then depend on the exchange rate regimes in place. On the other hand, when the exchange rate is flexible, monetary policy will be effective in part through the exchange rate. A reduction in domestic interest rates, say to promote growth, would lead to capital

outflows. At the same time, it would depreciate the exchange rate, with expansionary effects (Bernanke, 2005).

World economy has experienced some combinations of these three features in different eras. In the 19th and 20th centuries international monetary transactions were based on the gold standard and thus, the international value of domestic currencies were determined by gold standard. In this system, countries domestic currencies were fixed to gold at a specific rate and gold was used to back up domestic currencies. Countries' international monetary transactions were carried out at this fixed rate and this system operated like fixed exchange rate regime. Gold standard was seen desirable since it reduced the risk of trading among countries. Under the gold standard countries enjoyed with free capital flows and fixed exchange rate, meanwhile they renounce the free monetary policy (Bernanke, 2005). During the interwar year, however, when hot money flows undermined the gold exchange system and thus caused to a breakdown of multilateral trade Breton Woods system was to be put on the agenda. The Bretton Woods currency system was built on the basis that stable convertible exchange rates were essential for restoring relatively free multilateral trade and long-term foreign investment, and that capital controls would be required as a permanent deterrent against currency speculation that threatened exchange rate stability. Under this system countries enjoyed fixed exchange rate and independent monetary policy, meanwhile they renounced free capital mobility. Now most countries abandoned fix exchange rate regimes in favor of free capital mobility and independent monetary policies (Bernanke, 2005).

However, this choice is not as easy for emerging economies as industrial economies. So called "fear of floating" and inflationary pass-through in emerging economies lead these economies to act with suspicion towards floating exchange rate. Emerging countries seek to limit exchange rate movements for these reasons. On the other hand, a sudden reversal in international capital flows may trigger a capital account crisis in these economies. Some argues that limiting capital flows can be a solution for financial crises which resources from sudden reversal of international capital. However, restrictions on capital mobility have serious costs for developing economies. Restrictions on capital flows prevent emerging economies to access international capital markets and debar from these economies to finance their

investments. This leads to inhibition of growth and economic development which creates serious problems for emerging economies. Although controls on capital flows has negative effects for emerging economies it can be a remedy if it is used for a limited periods as in the case of Chile (Bernanke, 2005).

During the transition to price stability Chile adopted a gradual approach. Chile introduced capital controls in 1991 for more independence in monetary policy and less variability in exchange rate. Along with the unremunerated reserve requirement (URR) Chilean government would be able to implement tight monetary policy in order to control aggregate demand while it would be able to minimize the effects of tight monetary policy on the exchange rate. Chilean government intended to discourage short-term capital flows with the implementation of URR while without affecting the long-term, especially, foreign direct investments. This was expected to reduce the volatility of international capital flows into the country and, then, exchange rate volatility.

In the medium and long run sound monetary and fiscal policies are essential for emerging economies to sustain financial stability. But this is not an easy process to implement. If emerging economies want to benefit from free capital mobility, then what kind of monetary policies should be followed in emerging economies in order to attain financial stability?

3.1. The Choice of Exchange Rate Regime

If an economy faces primarily nominal shocks – that is, shocks that arise from money supply or demand – then a regime of fixed exchange rates looks attractive. If a monetary shock causes inflation, it will also tend to depreciate a floating exchange rate and thus transmit a nominal shock into a real one. In this setting, the fixed exchange rate provides a mechanism to accommodate a change in the money demand or supply with less output volatility (Calvo and Mishkin, 2003; 6).

On the other hand, if the shocks are real – like a shock to productivity, or to the terms of trade (that is, the relationship between export prices and import prices shifts due to movements in demand or supply) – then exchange rate flexibility of some sort becomes appealing. In this case, the economy needs to respond to a change in relative equilibrium prices, like the relative price of tradable with respect to nontradables. A shift in the nominal exchange rate offers speedy way of implementing such

a change - thus, ameliorating the impact of these shocks on output and employment. On the other hand, if a downturn is driven by real factors in an economy with a fixed exchange rate, the demand for domestic money falls and the central bank is forced to absorb excess money supply in exchange for foreign currency. The result is that (under perfect capital mobility) the decrease in the demand for domestic money leads to an automatic outflow of hard currency and a rise in interest rates. In this case, the hard peg contributes to increasing the depth of the downturn (Calvo and Mishkin, 2003; 6-7).

After the financial and currency crises of the 1990s, economists need to check up their view about exchange rate systems. Pegged-but-adjustable -soft pegs- exchange rate systems were start to questioned by economists.

In the late 1980s and early 1990s exchange rate was at the agenda as a nominal anchor. Countries with high inflation have considered the exchange rate peg as a significant step in price stabilization. Fixed exchange rate imposed a "ceiling" on tradable prices and thus, this imposition could be helpful to reduce inflationary expectations. This view was particularly popular in the stabilization programs of Latin America, as in the case of Argentina, Mexico and Chile. In order to be successful in brought down the inflation under fixed exchange rate fiscal policy should have been put in order. However, supporters of this view were unable to anticipate that the inflation tended to have a substantial degree of inertia. Although nominal exchange rate had been fixed, domestic prices and wages continued to increase. Especially in Chile, backward-looking-wage indexation was a significant obstacle in chancing the expectations. Other countries have experienced a serious credibility problem as well (Edwards, 2000).

Another problem with fixed exchange rate was the external negative shocks. Negative external shocks have created costly adjustment processes for emerging economies. Negative external shocks have deteriorated external balances of these economies by worsening the terms of trade or a decline in capital inflows. To reestablish the external balances, these economies had to pursue tight fiscal and monetary policies. However, this was not an easy way for the politicians of these economies because these economies have highly suffered from high unemployment. Politicians in these economies have either denied an existence of a problem or postponed to take required measures (Edwards, 2000).

The problem in Russia and Brazil was the high fiscal deficits. Nominal fiscal deficits have reached to %7.4 and %8 of GDP in Russia and Brazil. This situation made these countries highly vulnerable to an external negative shock. On the other hand, Asian economies exchange rate regime was *de facto* dollar pegged. In the period of yen appreciation, until the mid 1996, these economies have enjoyed high growth. At the same time, dollar pegged and high interest rates led to large portfolio inflows towards these economies. Investors and borrowers misunderstood this situation and thought this would continue forever. However, in the mid 1996 the U.S. dollar began to strengthen relative to the Japanese yen, so did those currencies pegged to it. Asian economies' performance became less impressive when U.S. dollar began to strengthen relative to Japanese yen and it was followed by an economic crisis (Edwards, 2000).

After the Mexican "tequila" crisis, the economists came to the conclusion that an extended period of fixed exchange rate will ultimately result in an overvaluation of domestic currencies. Despite the fact that pegged exchange rate regime was a useful tool in disinflation programs by imposing a "ceiling" on tradable goods and breaking the inflationary expectations, it causes overvaluation problem if is applied for a long period of time.

According to many economists success of the pegged exchange rate system depends on abandonment of the system at the right time. Pegged exchange rate system implemented a long period of time will probably result in overdepreciation. Countries need to maintain more flexible exchange rate. Pegged exchange rate system helps to curb the inflation but if it is not wanted to be a source of vulnerability it needs to be abandon at the right time (Edwards, 2000).

Well then, what time is optimal for economies to abandon the pegged rate? Countries should give up pegged exchange rate system when capital inflows are abundant and fiscal and monetary policies are sound. It is easier for countries to exit an exchange rate nominal anchor when economic situations sound and credible than the weak and low economic situations. But countries generally exit from an exchange rate when credibility weak and low thus an overdepreciation is unavoidable, as has often been the case in the past. Chile serves a successful example in 1990s. We can

define optimal exit strategy as marginal benefit of maintaining a pegged rate becomes equal to the marginal cost of that policy (Edwards, 2000).

3.1.1. Exchange Rate Regime and Monetary Independence

After the Asian, Brazilian and Russian crises economists has started to evolve their thoughts about exchange rate regimes. “Middle of the road” regimes fell out of favor whilst extreme positions have gained popularity (Edwards, 2000).

Supporters of “bipolar view” have emphasized some limitations of soft pegs. According to this view emerging countries unable to borrow their own currencies. This view has been named “original sin” in the literature as mentioned before. “Original sin” force emerging economies heavily rely on foreign currency borrowing. Of course, some economists have disaffirmed this view. According to those economists, emerging countries unable to borrow with their own currencies because financial imperfections exist in these economies, it is not stemming from “original sin”, and it can be removed with prudential policies (Eichengreen, Hausmann and Panizza, 2003).

Economists, acted with suspicions towards soft pegs, have claimed that large devaluations have negative impacts on firms’ balance sheets. In a world of high capital mobility, emerging economies with uninformed market participants subject to rumors, runs and panics (Edwards, 2000). This situation arises from misinterpretations of global events by market participants in emerging economies. To abolish this situation emerging countries have to pursue more transparent policies and it can be achieved by either super-fixed or freely floating exchange rate regimes.

However, many emerging have economies preferred to limit the exchange rate movements; indeed they adopted a flexible exchange rate regime in principle (fear of floating). These interventions may have arisen from both low credibility of policy and institutions besides it may have arisen from high degree of pass-through of exchange rate change to prices. This situation is seen a reason for emerging countries that led them to soft pegs.

Notwithstanding different views have in existence, most recent discussions have tended to emphasize the need for more flexible exchange rate regime. This is

because fixed or semi-fixed exchange rate regimes lead to overvaluation in emerging countries currencies. This situation conduce banks and corporate sector towards short-term and foreign currency borrowing excessively. In the event of a capital reversal it increases the vulnerability. When exchange rate becomes highly overvalued, the interest rate required to stabilize the exchange rate rise to high level and it pave the way for currency attacks. An example for this situation was seen in Turkey by the collapse of the "crawling" exchange rate regime in 2001 (Ortiz, 2002).

Another reason needed for more flexible exchange rate regime is increasing trade openness. In the case of a negative external shock flexible exchange rate take the role of automatic stabilizer. In the event of a negative external shock, where prices and wages are rigid, fall in exchange rate alleviates the adverse effects of negative external shock which resources from a fall in external demand. At the same time, flexible exchange rate enables central banks to use independent monetary policies in the case of a negative external shock. Central banks are able to mitigate negative external shocks by influencing domestic spending.

In the event of a negative external shock in a fixed exchange rate regime, prices must fall to balance the existing disequilibrium. When considered from this point of view, fixed exchange rate may lead deflation in countries where large and frequent negative external shocks are seen. An example to this situation can be found in Argentina. Although Argentina went through a severe recession, it had to raise interest rates in 1999 and 2000 when Federal Reserve raised interest rates to stabilize the U.S. economy (Edwards, 2000).

In their paper "Monetary Independence in Emerging Markets: The Role of the Exchange Rate Regime" Eduardo Borensztein and Jeromin Zettelmeyer (2001) investigate the impact of U.S. monetary policies' effects on the domestic interest rate, and domestic currency in the emerging market economies. It also investigates the impact of increasing international risk premium on the Emerging markets' domestic currency and interest rates. To investigate how U.S. monetary policies' effect on different exchange rate regimes in emerging market economies Eduardo Borensztein and Jeromin Zettelmeyer (2001) focus on two extreme cases in order to find a sharper contrast in the implications of the exchange rate systems. . They contrast Argentina with Mexico in Latin America and Hong Kong with Singapore in

Asia, that is, the countries with the longest history in recent times of currency board arrangements and floating exchange rate systems, respectively.

Eduardo Borensztein and Jeromin Zettelmeyer (2001) found a significant impact of U.S. interest rates on domestic interest rates for both currency board countries and floating-rate countries. The effect, however, is significantly larger for the currency board countries Hong Kong and Argentina relative to Singapore and Mexico. According to the impact of U.S. monetary policy actions, the effect on Hong Kong rates is close to one for one, and even larger on Argentina's rates. The impact is much lower on the floating exchange rate countries; the estimated coefficient is less than 0.5, and it is not statistically different from 0 in various cases. The scatter diagrams in figure 3.1 and figure 3.2 display the relationship between the change in U.S. Treasury Bill rates (the impact of U.S. monetary policy actions) and changes in domestic interest rates in Hong Kong and Singapore on days in which the Federal Open Market Committee decided to change interest rates.

Another research subject was that, how does the increasing international risk premium effect Emerging Markets' domestic currency and interest rates. They measured risk premium as the average spread in emerging markets bonds. Increases in the international risk premium have a strong impact on domestic interest rates in Mexico and Argentina (of about the same magnitude) and in Hong Kong for the period after the Asian crisis. However, no such effect could be detected in Singapore, where the reaction is marginally negative, suggesting a safe-haven effect.

In summary, Eduardo Borensztein and Jeromin Zettelmeyer found a significant impact of U.S. interest rates on domestic interest rates for both currency board countries and floating-rate countries. The effect, however, is significantly larger for the currency board countries Hong Kong and Argentina relative to Singapore and Mexico. Changes in Emerging Markets Bonds Index spreads affect domestic financial variables significantly in both Argentina and Mexico, with roughly equal effects. However, Singapore seems to react much less to such shocks than Hong Kong.

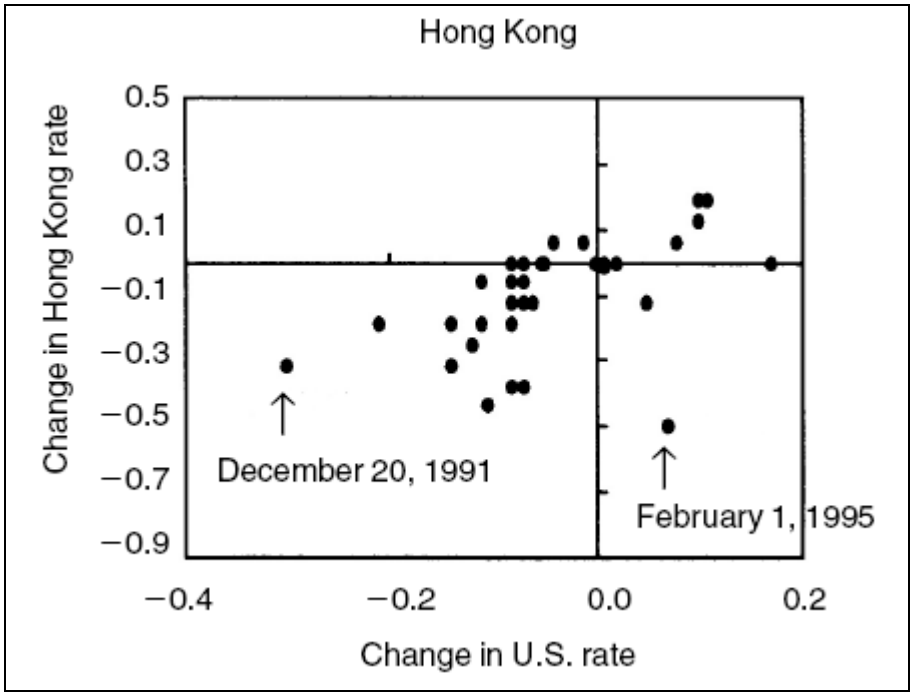

Figure: 3.1. The Relationship between U.S. Treasury bill Rates and Hong Kong Domestic Interest Rates

Source: Borensztein and Zettelmeyer, 2001, p: 64.

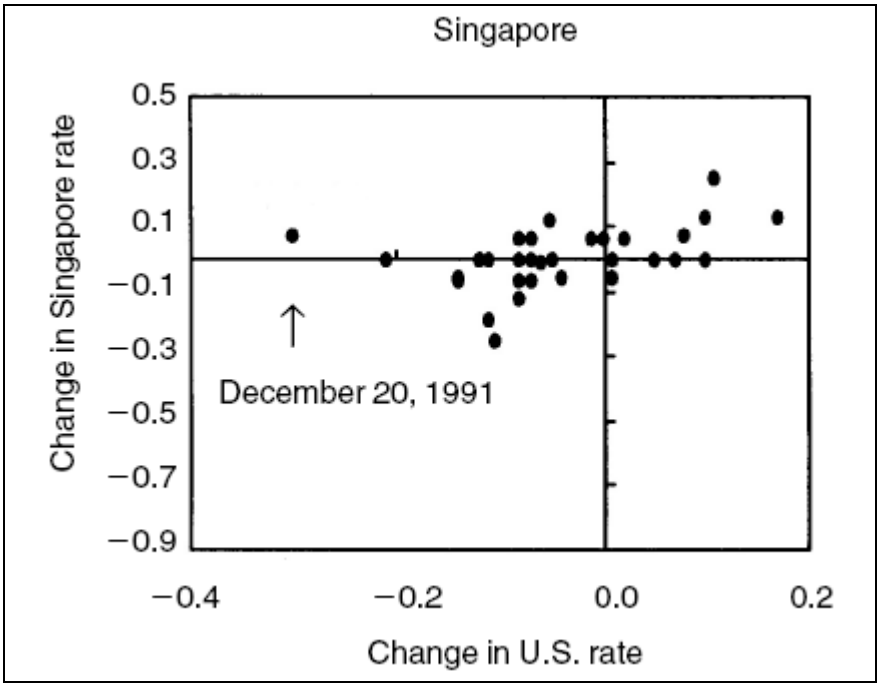

Figure: 3.2. The Relationship between U.S. Treasury bill Rates and Singapore Domestic Interest rates

Source: Borensztein and Zettelmeyer, 2001, p: 64.

3.1.2. The Recent Trend in Exchange Rate Regimes: Bipolar View

Recent emerging market crises (Mexico in 1994; Thailand, Indonesia and Korea in 1997; Russia and Brazil in 1998; and Argentina and Turkey in 2000) have warned the policymakers strongly against the use of pegged rates for countries with open capital account. These crises were to show intermediate exchange rate regimes between hard pegs and floating regime, namely soft pegs, are not appropriate and viable for emerging market economies. This view was named as "bipolar" or "two corner solution" view in the literature. In recent years "bipolar" or "two corner solution" view has gained serious popularity among economists (Fischer, 2001).

Fisher (2001) classifies countries into three main groups according to their exchange rate regimes. First group consists of economies with currency board or dollarized economies. Second group includes pegged regimes those with fixed pegs, crawling pegs, horizontal bands and crawling bands. And third group includes floating regimes which are defined as managed float and freely float. According to Fischer when financial integration is taken into account, the half of the two group of advanced and emerging economies use fixed exchange rate regimes whereas the other half adopt floating exchange rate regimes. Fischer (2001) emphasized that intermediate regimes are not practicable in the long-run.

As it is seen in figure 3.3 intermediate exchange rate regimes have been falling from favor while the number of emerging market economies that adopt hard-peg and floating regimes have been increasing. According to supporters of bipolar view, for countries open to international capital flows will be unable to carry on intermediate regimes and will have to choose one of the two extremes: either a super-fixed or a freely floating exchange rate regime.

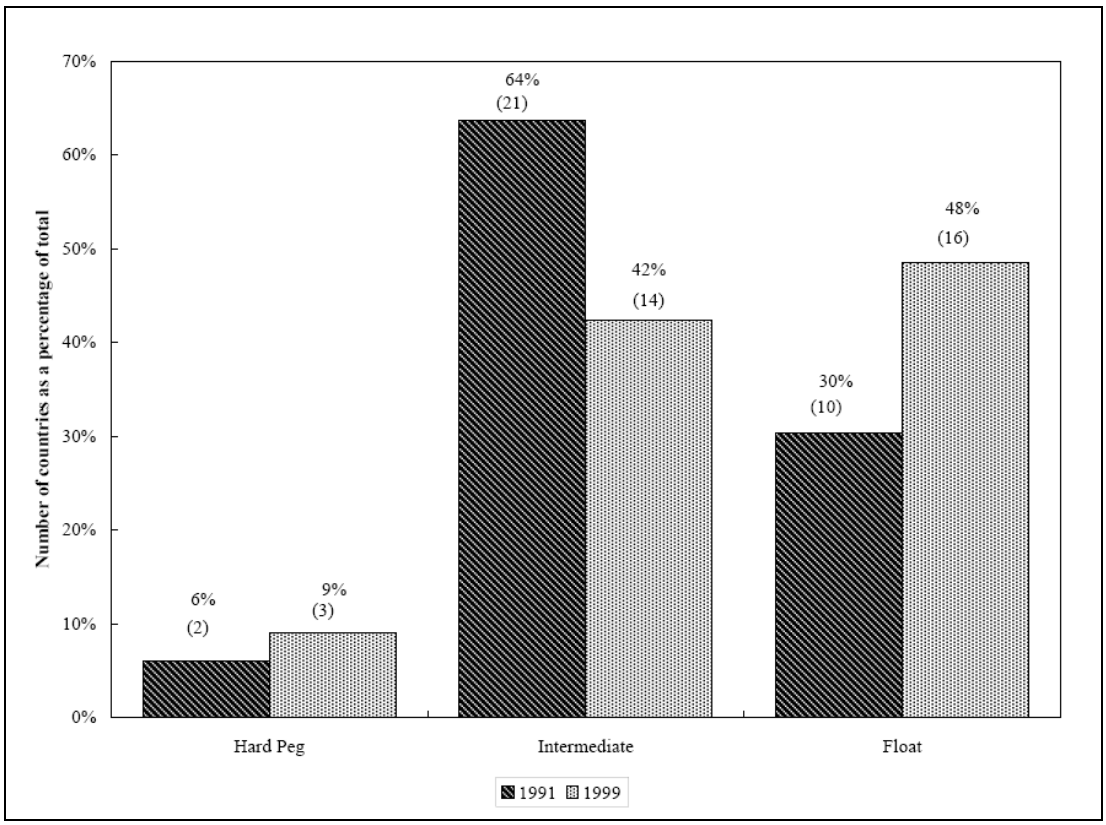

Figure: 3.3. Emerging Market Countries: Exchange Rate Regimes, 1991 and 1999

Source: Fischer, 2001, p: 34

3.1.2.1. Super-Fixed Exchange Rate Regime

According to the supporters of super-fixed exchange rate regime, this regime provides credibility, transparency, very low inflation and financial stability. Supporters of super-fixed exchange rate regime also allege that this regime reduces the risk of speculation and devaluation, thus interest rates will be low and stable than under alternative regimes (Edwards, 2000).

If, as Calvo (1999) has argued, external shocks are not independent of exchange rate regime, countries with more credible exchange rate regime can overcome the external shocks easily and less likely subject to "contagion" than the others. If currency risk *premia* are related with country risk *premia*, countries with more credible exchange rate regime will likely get off the external shock lightly. Low currency risk transforms low country risk and this situation brings about low interest rates and long-term growth.

However, according to Sebastian Edwards (2000), achieving credibility is not provided automatically. To achieve credibility, some key issues have to be addressed successfully. Fiscal solvency is the one of the most important matter has to be achieved. In order to be successful in super-fixed exchange rate regime fiscal soundness has to be accomplished. If necessary, governments are able to run counter-cyclical fiscal policies. As in the case of Argentina, where the fiscal pressures between the provinces and the central government were not solved by the currency board, hard pegs may be less effective at restraining fiscal policy than was previously believed. Hard pegs may even weaken incentives for governments to put their fiscal house in order, since the hard peg may make it easier for governments to borrow foreign funds, therefore allowing them to delay necessary reforms to fix fiscal imbalances.(Calvo and Mishkin, 2003)

The Lender of Last Resort function, which is provided by central banks under flexible and soft pegs, has to be entrusted another institution. It can be international institutions, or a foreign country with which a monetary treatise has been signed. In order to achieve a sustainable super-fixed regime domestic banking sector has to be a sound situation. This can be deal with in several ways, such as implementation of prudential supervision and the imposition of high liquidity requirements on banks.

For the sustainability of super-fixed exchange rate regime, especially in currency board, monetary authority should hold enough amounts of reserves. In the case of a financial panic country's international reserves must provide necessary liquidity to the markets and are able to hinder speculative capital movements (Edwards, 2000).

The Case of Argentina

Argentina provides one of the most outstanding examples of super-fixed regime. Period between 1975 and 1990, Argentina suffered from poor or negative GDP growth and hyperinflation. In this period Argentinean government and central bank faced with serious confidence loss. Successive currency crises in Argentina peaked inflation 5.000% in 1989. GDP was 10% lower than in 1980 and per capita GDP had fallen by over 20%. After a long history of hyperinflation and poor economic growth, Argentina decided to adopt the currency board. Along with the

adoption of currency board Argentina pegged its currency to U.S. dollar between 1991 and 2002 (Edwards, 2000).

Before the adoption of currency board which currency or currencies to peg the Argentinean peso against was a matter of debate. Some economists argue that Argentinean peso should be pegged to a basket which consists of Argentinean's major trading partners. According to other economists, U.S. dollar would provide greater international credibility and safety, thus Argentinean peso should be pegged to U.S. dollar. The latter argument, however, dominated the former argument. Argentina's currency board established a fixed pegging of one-to-one parity between the peso and the U.S. dollar. It also assured full convertibility of pesos into U.S. dollars. The government anticipated to establish local and international credibility in the peg and to limit the amount of local control over monetary and fiscal policy. The currency board regime planned to stabilize the peso, support both foreign and local investment, and encourage sustained economic growth (Hornbeck, 2002; Mishkin and Savastano, 2001).

After the adoption of currency board inflation was brought under control, which was brought down from more than 3,000% in 1989 to 3.4% in 1994. Another major achievement of the system was renewed economic growth. With the adoption of currency board GDP growth reached a level of 8% per annual between 1991 and 1995 until the Mexican crisis affected the emerging markets. Even after the Mexican crisis, Argentina was able to grow at a rate of 6% until the 1998. International trade also increased noticeably, reflecting the growing degree of openness of the country. Argentinean imports rate increased 278.44%, from $11.6 billion in 1991 to $32.3 billion in 2000. Similarly, exports rate increased 253.7%, from $12.1 billion in 1991 to $30.7 billion in 2000 (Hornbeck, 2002; Mishkin and Savastano, 2001).

Although currency board gained significant success in the beginning, it was ended up with failure due to important deficiencies in policy implementation. Government debt increased sharply. Unwilling or unable to raise taxes, and excluded from printing money by the currency board system, the government's only other alternative to finance its budget deficit was to issue debt instruments in the capital markets. Public debt increased almost twice from 29.5% of GDP in 1993 to 50.3% in 1999. Furthermore, this debt was in foreign currency, as the domestic private savings

remained low, and it took place despite large inflows of income from the privatization of formerly state-owned companies. Associated with the increase in public debt was an increase in the debt service ratio which increased from 22% of exports in 1993 to 35.2% in 1999, aggravating an increasing current account deficit (Edwards, 2000; Hornbeck 2002).

Negative external shocks highly contributed to the failure of currency board. Mexican crisis in 1994-1995 caused to a liquidity crunch that increased interest rates steeply. Sharp increase in interest rates engendered a deceleration in economic growth, and therefore surged unemployment rate. After the Mexican crisis, the following 1997 Asian and 1998 Russian crisis hit the Argentinean economy. After these successive crises Argentina had to raise interest rates further and hereby cost of borrowing for Argentina became very high. The Brazilian crisis of 1999 perhaps had the most severe effect, because Brazil is Argentina's largest trading partner, and the crisis was coupled with an appreciating U.S. dollar and a collapse in the world prices of primary products. Since the Argentinean peso pegged to the U.S. dollar, appreciation of U.S. dollar along with the sluggish demand from Brazil, which is the chief trading partner of Argentina, hit the Argentinean's competitiveness in world markets. As a consequence Argentinean economy crunched and contracted (Edwards, 2000).

Argentina's economic contraction and strong U.S. dollar drew all attentions towards peso U.S. dollar peg. Argentina was largely trading with Europe and Brazil and they did not have U.S. dollar as their currency. Argentinean peso was fluctuating according to U.S. dollar although euro and Brazilian real were a weak appearance and this situation was incompatible with Argentina's actual economic positions. Therefore, strong U.S. dollar reduced Argentina's competitiveness and caused to an increasing amount of current account deficit (Mishkin and Savastano, 2001).

In 2001 pressure on the currency board was on the top; however, it was not easy at all to find a way out. Because much of the debt was denominated in U.S. dollar, abandoning peg would be very costly for the country. Besides, breaking the peg would harm country's credibility in world capital markets. On the other hand, letting currency to float would improve country's competitiveness and help to reduce current account deficit and thus, reduce the foreign borrowing to finance this deficit.

Many solutions were proposed in order to find a way out from this difficult situation. Some proposed to peg the peso to euro besides dollar. Since euro was in a weaker position than the dollar, this meant a controlled devaluation of peso. Another solution proposal was to adopt U.S. dollar as the country's sovereign currency, namely dollarization (Mishkin and Savastano, 2001).

In December 2001, government restricted bank deposits withdrawals to a maximum of 1.000 pesos/dollars per month. This precaution unseated the government and Argentina suspended its external debt. New government readjusted the fixed exchange rate at a ratio of 1.4 pesos to 1 dollar. This means approximately %30 devaluation. Another measure was conversion of the entire bank' accounts denominated in dollars into pesos and its transformation in bonds. Consequently, government entirely relinquished from the peso dollar peg and allowed the peso to float freely. Letting the peso to float freely resulted in a sharp depreciation of peso (as it was anticipated) and peso lost 75% of its value with respect to the U.S. dollar in a couple of months (Hornbeck, 2002; Mishkin and Savastano, 2001).

3.1.2.2. Freely Floating Exchange Rate Regime

The Case of Mexico

It has been a long debate among economists that whether the emerging economies can successfully implement freely floating exchange rate regime or not. Two claims asserted by economists that emerging economies can not successfully implement freely floating exchange rate regime. Firstly, since emerging economies export largely "commodities and light manufactories" their exchange rates would be highly volatile. Second, because emerging economies are usually deprived of "institutional requirements", they can not sustain an effective monetary policy in a purely floating exchange rate regime (Calvo and Mishkin, 2003).

An outstanding example to floating exchange rate regime is Mexico whose authorities have strongly claimed that they have adopted a freely floating exchange rate after the collapse of 1994. The exchange rate in Mexico has been floating freely since late 1994. Nevertheless, at different stages since then, there has appeared for

different reasons, the need for the authorities to participate in the foreign exchange market. Due to these interventions some of the economists claim that Mexico has had a floating exchange rate regime since 1997. In the period of 1995 -1997 Mexico had a dirty/crawling exchange rate regime. In all of these cases, the rule that always has been followed is that the intervention of the authorities in the foreign exchange market should be completely transparent, and without defending a particular level of the exchange rate – thus preserving the main characteristics of a flexible exchange rate regime (Cartens and Werner, 1999).

Immediately after the acceptance of the floating exchange rate, the movements in the currency were irregular and considerable depreciations occurred. This behavior is completely explained by the ambiguity regarding the policy measures that were going to be implemented in response to the crisis and the severe international liquidity problem that the country was facing. Since April 1995, after the declaration of the IMF program and the international assistance package, the currency stabilized and the foreign exchange market was comparatively stable until October, when another incident of high volatility and large depreciations started. Again, the chief reason behind this incident was the ambiguity regarding the macroeconomic program for 1996 and the health of the financial system. When these doubts were cleared, Mexican exchange market has sustained long periods of stability. In addition, and on account of the Russian default, the currency suffered another incident of large depreciations and volatility from September to November of 1998. (Carstens and Werner, 1999)

The existence of an efficient foreign currency futures market has been of great use so as to reduce the volatility of the exchange rate. Along with the sales or purchases performed in this market, both importers and exporters and, in general, creditors and debtors of foreign currency are able to eliminate or considerably lessen the exchange rate risks they face and thus ease pressures on the spot market. Hence, Mexican central bank authorized banks to perform operations in foreign exchange futures in order to fulfill certain conditions those related to solvency (Cartens and Werner, 1999).

According to some economists, although it has been argued that by floating the exchange rate a country has a supplementary adjustment variable to tackle with

external shocks and hence the volatility of interest rates should plummet, this is not necessarily true. If a country adopts a floating exchange rate regime, this means that the country also abandon the use of its international reserves. Thus, we should think that when moving from a fixed to a floating regime a country changes its adjustment variables from international reserves and interest rates to the nominal exchange rate and interest rates. So, it is not obvious that interest rate volatility should decline when a country adopts a floating exchange rate regime (Carstens and Werner,1999). However, in order to get a feeling of the effects of different exchange rate regimes on interest rate volatility, we can compare Mexico with Argentina. Both countries have subjected to similar external shocks, but their exchange rate regime is one as far removed from the other. As can be seen from figure 3.4, Argentinean real rates seem to be more volatile and during the 1999 higher than Mexico.

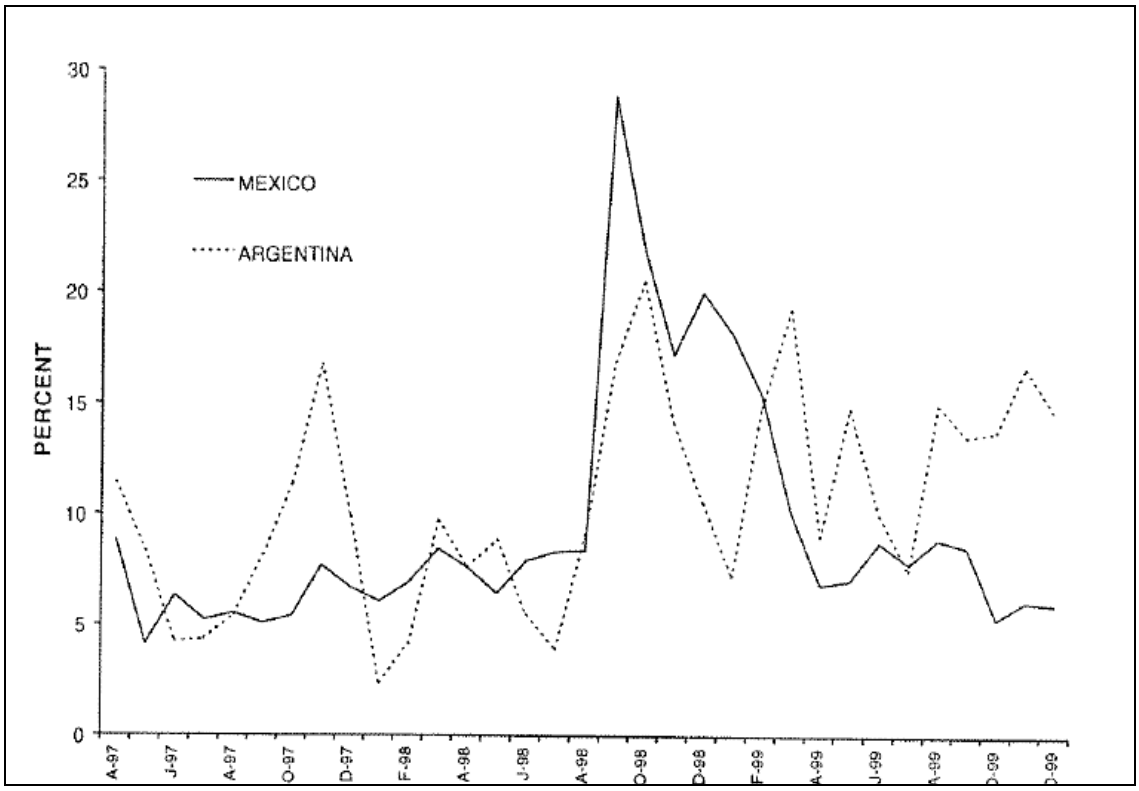

Figure: 3.4 Real Interest Rates for Mexico and Argentina

Source: Banxico and Bloomberg

* Based upon the 28 days Cetes Rate
** Based upon the 30 days BAIBOR Rate

In company with the adoption of a floating exchange rate regime Mexican financial markets were less exposed to speculative pressures. A very essential feature of this regime is that floating exchange rate discourages short-tem capital flows, owing to the large losses that can be incurred by investors in the short-run. As it is clear from figures 3.5 and 3.6, the recent Mexican experience highlights this incident, as the ratio of foreign direct investment to the current account deficit has increased significantly since the adoption of this regime. The reaction of the foreign direct investment to current account ratio deficit in Mexico has been larger than the one observed in other Latin-American countries that have not changed their exchange rate regime.

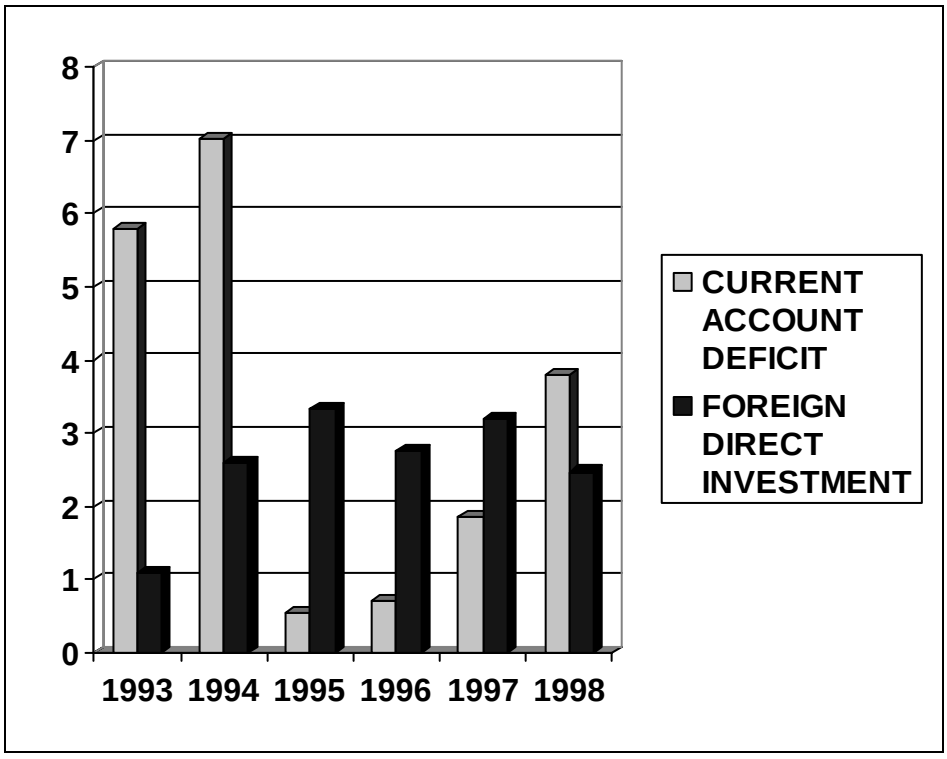

Figure: 3.5 Current Account and Foreign Direct Investment of Mexico (% GDP)

Source: Cartens and Werner 1999, p: 64

It is important to stress the stabilizing properties of the floating exchange rate system and the free determination of interest rates when the economy faces a capital outflow. Under these circumstances, the downloading of assets denominated in

domestic currency will cause a depreciation of the currency and an increase in interest rates. The instantaneous movements in these variables suppress asset prices and thus discourage deters further selling and prevents the capital outflows. The automatic movements in exchange rates and interest rates increase the cost of speculating against the domestic currency. Given the fact that, the levels that these variables reach during these episodes are incompatible with the fundamentals of the economy, the currency will recover ultimately, inflicting substantial losses to those who obtained the foreign currency at a high price and sold their domestic assets at nadir prices. In case of an external shock flexible exchange rate also helps the adjustment of real exchange rate towards its equilibrium level. When this adjustment process operating monetary authority does not feel the need to intervene in exchange rate market and this situation prevents to damage credibility of monetary authority (Fischer, 2001).

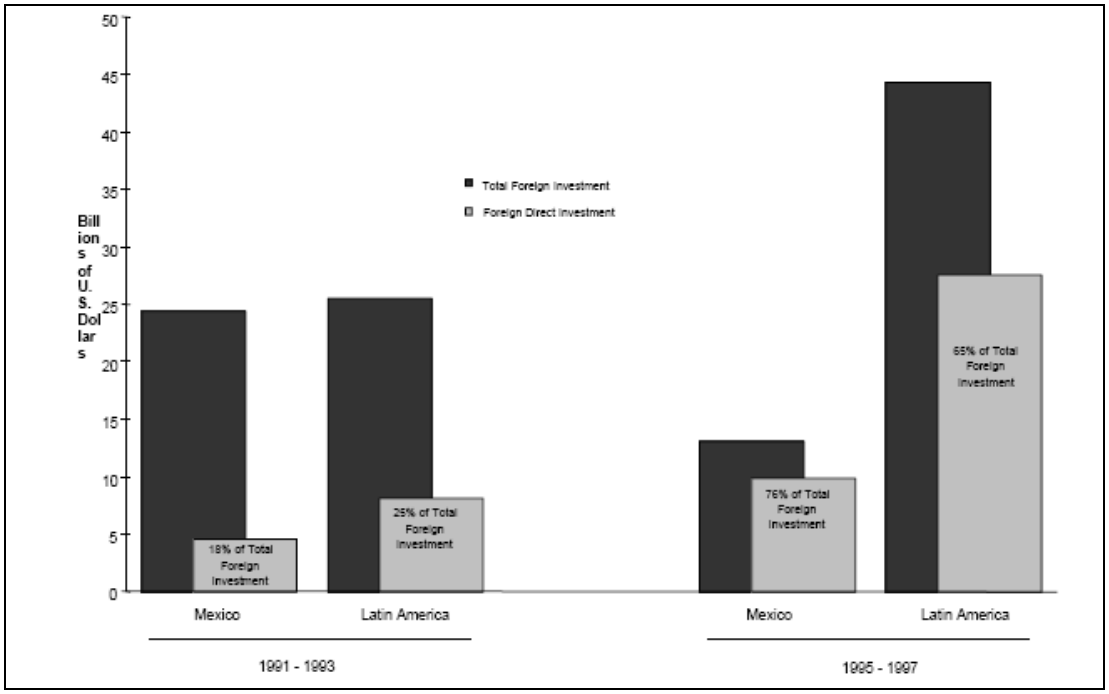

Figure: 3.6 Average Foreign Direct Investments for Mexico and Latin America

Source: Cartens and Werner, 1999, p: 65

* Excluding Mexico

** The data for Latin America from 1995 to 1997 is complete only for the following countries: Argentina, Brazil, Chile, El Salvador, Peru, Uruguay and Venezuela. From 1991 to 1993 the data is complete for all Latin American countries except for the Dominican Republic, Paraguay and Trinidad and Tobago.

Put in a nutshell, the discussion on exchange rate arrangements for emerging markets, Mexican experience has shown that the Mexican peso has been as stable as other floating currencies, in contrast to the original foretells of several analysts. As a result, this exchange rate regime has not represented an impediment in Mexican disinflationary efforts and it has contributed extensively to the adjustment of the economy to external shocks and to discourage short-term capital inflows. Thus, flexible exchange rate regime has become as a cornerstone of Mexican stabilization program (Cartens and Werner, 1999; Mishkin and Savastano, 2001).

3.1.3. Why Do Emerging Countries Limit Their Exchange Rate Movements: Fear of Floating

Policy makers may intervene to limit exchange rate movements. However, different from a fixed exchange rate, such interventions may not aim a precise level of the exchange rate but may influence its path or volatility. The reason for such an intervention may be stemmed from probable excessive volatility of the exchange rate and this phenomenon called as "fear of floating" in the literature. The term "fear of floating" was coined by Calvo and is used to describe a situation in which central banks are averse to excessive volatility in currency markets in emerging market economies. As stated by Calvo and Reinhart (2002), high dollarization ratios, high inflationary pass-through, low credibility and similar problems push the emerging economies are out of step with developed economies in implementing their exchange rate policies.

In the literature floating exchange rate policy is defined as a policy option in which authorities have no physical and/or verbal intervention to the level of the exchange rate. According to IMF, however, nonsystematic interventions to excessive volatility in the exchange rates are not inconsistent with freely floating exchange rate regime unless they aim a specific exchange rate level. Different economic and financial structures can create divergence in implementing floating exchange rate policies among countries. Economic problems that peculiar to underdeveloped and emerging economies, such as; assets and liabilities dollarization, high inflationary pass-through, low credibility, limited integration of financial systems to foreign

markets and shallow derivative markets are seen the outstanding difficulties in implementing freely floating exchange rate regime in these economies. Owing to these intricacies, monetary authorities in emerging markets have difficulty in implementing freely floating exchange regime and sometimes may intervene in markets directly or indirectly.

Such arguments are put forward for the explanation of intervention into exchange rate markets by emerging economies. For instance, the tradable sector's ability to adjust to sudden changes in the exchange rate may be limited. Therefore, unstable exchange rates can discourage exporters and importers from international trade. Currency mismatches, which raise the possibility of a quick fall in exchange rates, exposing banks and the corporate sectors with unhedged foreign currency liabilities to important balance sheet losses, can be notable for authorities. When governments have a large outstanding foreign currency debt or debt indexed to the exchange rate, large currency depreciations can endanger fiscal sustainability, increasing risk premium and sovereign spreads. For instance, in the recent Brazilian and Turkish financial crises, liability dollarization played a significant role. Another reason that emerging economies intervene in exchange rate markets is that emerging economies face a high degree of pass-through of exchange rate changes into inflation. This makes them particularly vulnerable to persistent exchange rate depreciations. Furthermore, some economists argue that because of their shallow markets emerging economies are more vulnerable to one-way expectations and herd behavior. In such situations, the possibility of overshooting is high because exporters and importers as well as foreign investors can quickly change their financing strategy (Hawkins, 2005).

Calvo and Reinhart (2002) analyzed the exchange rate regimes in three basic categories which includes freely floating, managed float and pegged exchange rate regimes and compared the international reserves volatility, exchange rate volatility and interest rate volatility. The main thought in this research was to demonstrate that the countries adopted managed float regime have less volatile exchange rate than the countries adopted freely floating regime and more volatile exchange rate than the countries adopted pegged rate. In addition to this, it was anticipated that changes in international reserves have more volatile in which countries adopted managed float

regime than the countries adopted freely floating regime and less volatile than the countries adopted pegged exchange rate regime. Another issue examined in this research was the interest rate response to the changes in exchange rate level. According to Calvo and Reinhart (2002) countries that afraid of high volatility in their exchange rate carry out counter interest rates policy in order to alleviate the volatility in the exchange rate movements. To examine this situation, Calvo and Reinhart (2002) took interest rates into consideration. According to Calvo and Reinhart even if countries adopted inflation targeting continue to intervene in exchange rate fluctuations, but by doing this they do not directly intervene in exchange rates but intervene in indirectly by changing interest rates.

> ...policy intervention to dampen exchange rate fluctuations is not limited to purchases and sales of foreign exchange. Interest rates in the United States, Japan, Australia, and other developed economies are usually set with domestic considerations in mind. Yet, in many of the other countries in our sample, the authorities who set domestic interest rates accord a much higher weight to the stabilization of the exchange rate— particularly when there are credibility problems or a high pass-through from exchange rates to prices. This is also the case for countries which have inflation targets and have a high pass-through from exchange rates to prices...this policy, coupled with credibility problems, may help explain the high relative volatility of interest rates in these countries...(Calvo and Reinhart, 2002; 391).

> ...when it comes to exchange rate policy, the middle has not disappeared. Yet, there is an apparent change in the conduct of monetary-exchange rate policy in many emerging markets—interest rate policy is (at least partially) replacing foreign exchange intervention as the preferred means of smoothing exchange rate fluctuations. This is evident in the high variability of interest rates in developing economies... ...(Calvo and Reinhart, 2002; 404-405).

What factors may eliminate fear of floating phenomenon in emerging market economies. For example, when hedging and forward exchange market have developed in an emerging economy, exporters and firms with large foreign currency debts may be better able to protect themselves against foreign currency risks. Moreover, the hedging behaviors of firms depend on the exchange rate system. When investors realize that authorities will resist against a sharp depreciation, they

may be less willing to hedge themselves against currency depreciation. If authorities let the currency to move both ways, it can encourage firms to hedge themselves against currency risks.

Developing domestic bond markets reduces the balance sheet mismatches. Such markets can lower the dependence of firms and governments on foreign currency debts and increase their access to long-term funding, helping to reduce both currency and maturity mismatches. Declining in the exchange rate pass-through to inflation is also a factor for adopting exchange rate flexibility. In recent years increasing shift to inflation targeting among emerging countries, leads to a more stable long-run inflation expectations. The increased inclination of the firms to absorb exchange rate changes into their profits and to switch to local currency pricing to keep market share may have also played an important role. A flexible exchange rate may have been a factor for lower inflation pass-through in some countries. If there is not an important currency overvaluation like in fixed exchange system, it is possible that firms may view exchange rate changes as temporary and for this reason will be more willing to absorb additional costs in their margins. Another explanation for lower pass-through is the participation of some countries into the global economy. China is the most outstanding examples to this phenomenon. Participation of these countries into the global economy, especially China, led to global oversupply and reduces inflationary pass-through (Mohanty and Scatigna, 2005).

3.2. Interest Rate Policy

The choice between monetary aggregates and interest rates has been a matter of debate among economists. Financial liberalization has deemphasized the importance of explicit intermediate targets in monetary policy implementations. Most central banks prefer to choose interest rates as a target rather than quantity based targets. Interest rate changes normally have a clear effect on the cost of credit, with bank loan interest rates often immediately following changes in the operating target.

According to classical view, adhering to money aggregate will stabilize the economy if shocks come from the real economy but adhering to an interest rate target

is preferable if shocks affect the demand for money. If there is a problem in determining the real interest rate or if shocks affect especially investment or exports, then a monetary aggregate is the preferred instrument; the same is true if it is hard to determine the equilibrium real interest rate. On the contrary, if velocity shocks are big then the interest rate is the better instrument (Taylor, 2000). According to the proponents of interest rate instrument on policy rules, velocity uncertainty has been the case in recent years. On the other hand, some economists argue that there are circumstances where real interest rate measurement is difficult and thus the over night nominal interest rate is not a very good guide as a policy instrument. These difficulties are frequently seen in emerging economies. Due to high and variable inflation rate and risk premium, the real interest rate is difficult to determine in emerging economies. Thus, due to these difficulties in determining the equilibrium real interest rate, the possibility of policy errors is high in emerging economies with an interest rate rule (Taylor, 2000). According to Taylor (2000) even if rules with the interest rate has become the proffered choice, policy makers in emerging economies might prefer policy rules with monetary aggregates.

In emerging market economies, intermediate targets for specific monetary aggregates continue to be implemented in several countries. Different from industrial countries in which the choice of operating target has almost been narrowed down to a short-term interest rate, in several emerging economies bank reserves or to some extent broader concept of the monetary base keep on to serve as the operational focus of monetary policy implementation. This may indicate a perception in these countries that bank reserves have a reliable and predictable influence on the broader monetary aggregates (i.e. that the money multiplier has remained stable or that the classical cash reserve system is still relevant). A second interpretation may be that price signals are less reliable than in more stable and well-developed financial systems. According to some economists, rapidly shifting level of interest rates in an unstable inflation environment or a financial crisis may damage the stance of monetary policy. The central bank may then prefer to achieve a quantitative target rather than a price target. Sometimes, money targets are seen as the most effective way of constraining government finances. Quantity targeting is often required by International Monetary Fund (IMF) disinflation programs. Because the critical items of the central bank's

balance sheet are more directly under control disinflation programs which are prescribed by IMF focus on these items (Mishkin and Savastano, 2001).

It may be used by central banks, at least as a transitional regime, where the lack of credibility is a major problem. Quantity targeting can also be useful when the overnight interest rate has been cut to zero. Nevertheless, many countries using money targets do so only in an indicative way, supplementing them with other variables such as interest rates, exchange rates and expected inflation (Taylor, 2000).

In contrast to the benefits of monetary aggregates which I mentioned above, many central banks have found that movements in the monetary base have been volatile and not always closely related to economic or broader monetary conditions. In addition, financial deregulation and liberalization have improved the role of the interest rate in the monetary transmission mechanism. For these reasons, many central banks have chosen to assign to a short-term money market interest rate at least an important supplementary role in their day-to-day policy implementation. Many central banks have chosen to assign to a short-term money market interest rate at least an important supplementary role in their day-to-day policy implementation. The most prominent exception is Mexico. In the aftermath of Mexican peso crisis, interest rates were not given an operational role in the policy framework. The central Bank of Mexico targeted a specific level of the sum of the daily positive and negative bank reserves (settlement balances) held by commercial bank at central bank. Interest rates and the exchange rate are thus allowed to move freely according to market conditions. Until the Russian crisis in 1998, Mexico's operating framework showed remarkable success. Rapid and significant price adjustments occurred in the event of marginal changes in the cumulative reserve target. Financial turmoil in 1998, however, weakened the signaling power of a "short" overall position imposed on the banking sector. If there is not evidence of speculative activity, the Bank Mexico's tolerance for fluctuations in interest rates has been generally great (Yacaman, 1999).

3.2.1. Which Interest Rate as Operating Target?

Which money market interest rate should the central bank focus on as the main operating target? Overnight interest rate, which is mostly determined in the

interbank market for settlement balances, is the main operating target in most developed and emerging economies. Since the overnight rate is usually the rate which the central bank can control easily, it is a practical choice for many central banks. Being the monopolist supplier of bank reserves (settlement balances) and being able to influence the demand for them through a system of required reserves and/or by determining the terms of interbank clearing and settlement, the central bank can in theory control the overnight rate with a high degree of accuracy.

But some central banks hesitate to focus exclusively on the overnight rate because short-lived fluctuations may be misunderstood as a change in monetary policy. First, because of the technical adjustments, such as; details of the system of reserve requirements, seasonal factors or errors in projecting the autonomous sources of liquidity, the overnight rate can be inclined to abrupt changes which the central bank may not want to neutralize. Central banks may worry about that their tolerance for short-term oscillates will be misunderstood as changes in the stance of monetary policy. Excessive volatility in money markets may cause ambiguity about economic fundamentals. Failure to keep overnight rates near the pronounced target may unfavorably affect the overall reputation of the central bank, especially if interest volatility is seen as a symptom of misallocation of liquidity among banks and doubt about monetary policy. Moreover, interest volatility distorts signals from the market (Hawkings, 2005).

Secondly, the structure and characteristics of the financial system may be such that the overnight rate plays a relatively modest role in the monetary policy transmission mechanism. As medium-term interest rates are sign of expectations of future movements in short-term rates, central banks have more control over medium-term rates when short-term rates give a clear signal. In regular market conditions monetary transmission mechanism may be faster and predictable. If interest rate changes are not transmitted precisely or predictably from the overnight market to the other segments of the money market, control of the overnight rate by central bank may not have the desired effects over the whole yield spectrum. Furthermore, more smooth and predictable market conditions make to assess and manage risks easier for financial institutions (Schabert, 2003).

Money market rates with longer than overnight maturities may be more relevant for the pricing of loans and deposits or as benchmarks for longer-term financing. If the cost of control of the overnight rate is more than the relevant maturities, overall monetary control could be conciliated. Because the ability to set interest rate objectives at more than one is fairly restricted, central bank may choose its operating target as the short-term interest rate with a longer maturity than the overnight interest rate. The choice of operating variable may also be related to the design of the central bank's instruments. If bank liquidity supplied by central bank is generally concentrated on a specific maturity, it is easier for central bank to influence the rates at the accommodating maturities and central bank may want to adopt these maturities as its operating target (Hawkings, 2005).

Focusing on longer-term rates, however, has its costs. First, control will be significantly less than in the market for bank reserves, given that the central bank is not likely to exert a dominant influence on either the supply or the demand side. Secondly, because the freely determined interest rates in these markets reflect the expectations of market participants, central bank may want to obtain information from these markets. Finally, concentrating on longer-term markets may greatly increase volatility of the overnight rate. Because the end-of-day settlement balances is the essential variable in bank's demand for reserves, adopting maturities different from overnight maturities amount to consenting large fluctuations in the overnight rate (Hawkings, 2005).

How much volatility should the authorities allow for in the key operating rates fundamental depend on their policy strategy? Central banks having an interest rate target want to keep short-term interest rates volatility in comparatively low. Under normal conditions, it is important for central bank to catch a smooth trend in operating short-term interest rates and central banks show tendency for reducing volatility. First, as already argued, volatile interest rates can obscure the policy signals. Secondly, more regular market conditions encourage more quick and more predictable transmission of monetary policy. Thirdly, less volatile interest rate conditions may help financial institutions better assess and manage (and reduce their exposure to) interest rate and market risks. Finally, stable interest rates in short-term markets are favorable for securities dealers because these dealers financed their

activities by borrowing short-term markets. Therefore, stable interest rates in the short-term market help to promote money market (Hawkings, 2005).

However, even if central banks have had perfect control over the market rate, some of the central banks do not want to eliminate overall interest rate volatility. There are reasons to allow interest rate volatility. First, rigid controls over the interest rates may discourage the development of money markets. Second, because fully eliminating the interest rate volatility blurs the market signals, central banks may want to allow short-term interest rates fluctuations in determining its policy stance. Finally, in crisis situations, quick and sharp adjustments in interest rates may be necessary. To restrict interest rates movements may postpone the authorities' ability to respond in the event of a crisis. Particularly in some countries monetary authority welcome quick and abrupt change in overnight rate that can react to exchange rate pressures. In fact, condoning volatility in the overnight interest rate could enable the central bank to protect stability in more crucial money market rates (Mishkin and Savastano, 2001).

In the market for bank reserves, the central bank could use a number of techniques to contain the volatility of interest rates. One technique used in several countries is the averaging of reserve requirements over the maintenance period. Changes in liquidity of a more technical nature could then be absorbed by adjusting the balance in the banks' required reserve account at the central bank without giving rise to interest rate changes. Another technique is to provide standing facilities in order for bounding the overnight interest rates. Classically, the ceiling of the corridor is a "Lombard-type" or "discount window" facility and sometimes restricted. The floor is a deposit facility and is not offer an attractive return in order to it being used too often (Hawkings, 2005). If no such deposit facility exists, a subsidized lending facility (e.g. a discount window at below-market cost) could serve the same function; banks would have an incentive to pay back these loans if excess liquidity pushed market interest rates below the initial level of the discount rate. Of course, the central bank could fine-tune its market operations to flat the movement of the overnight and other money market rates. Although a formal interest rate corridor is adopted, most central banks try to guide the overnight interest rate (Hawkings, 2005).

A related issue is the ideal size and frequency of interest rate adjustments. Much of the central banks in the merging economies have not adopted a formal position in this regard. A number of central banks prefer to make small and gradual adjustments at regular intervals on interest rates in order to support more regular market conditions. Of course there are reasons why central banks prefer to make small and gradual adjustments on their interest rate policy. It reduces the possibility of overshooting and therefore having backtracked. In the face of such a situation central bank in question would lose substantial credibility. Moreover, if the central bank is credible and transparent, changes tend to be infrequent as the market often moves in anticipation of a central bank initiative. On the other hand, it must be kept in mind that the external market conditions and the degree to which the inflation target being reached mostly determine the size and frequency of interest rate adjustments. Likewise, if a country adopted tight exchange rate peg, sudden jumps in the interest rates have to be accepted.

3.3. Foreign Exchange Interventions versus Interest Rates Responses

There is a growing consensus in emerging market economies that reference or policy interest rates implemented by central banks is a good system in normal times. When volatility is high, however, reference interest rate policy is replaced by other monetary instruments; especially foreign exchange interventions is the most favorite approach to be implemented (Calvo, 2006).

Foreign exchange interventions are no longer implemented by developed economies. There are several reasons why developed economies do not resort to foreign exchange interventions. Firstly, this instrument is only effective if it is seen as an indicator of interest rate or other monetary policy adjustments. Unless it has robust effect on the nominal exchange rate, foreign exchange interventions are seen as a provisional remedy to influence real exchange rate and competitive conditions. Secondly, major interventions may damage the credibility of monetary authority. Thirdly and the most important reason is that because the financial markets in developed economies are deep-scaled and well-matured, there is no need to guide the

exchange rate. Financial markets have adequate ability to absorb and deal with negative shocks (Moreno, 2005).

In contrast to developed economies, foreign exchange intervention, however, appears to be more common in emerging market economies. This is partly because the structural characteristics of emerging economies. Large-scaled exchange rate fluctuations are occurred in emerging economies with respect to developed economies and these fluctuations can have serious impact on real economy in these countries. Shallow foreign exchange markets, dominated by a small number of agents, will probably to be volatile if authorities do not provide some guidance and support. If country in question has a bad reputation in its macroeconomic policies that can decisively anchor market expectations about future monetary and exchange rate policy, the problem is worsened. Immature and incomplete financial markets also mean that hedging against exchange rate risk is costly and sometimes impossible, in order that the costs of exchange rate volatility can be significant for individual agents and for the economy as a whole.

A great variety of different goals behind intervention diverge across countries. In fixed exchange rate regimes, why central banks appeal to foreign exchange interventions is a comprehensible issue. Central banks intervened in foreign exchange market due to preserve their exchange rate pegs (Moreno, 2005). Because fixed exchange rate may lead to large current account surpluses and capital inflows led to upward pressure on currencies central banks intervened in support of the currency. In such cases, sending a signal to the markets is seen an effective way of stabilizing the foreign exchange market.

In flexible exchange rate, the incentives for intervention are mostly varied. In flexible exchange rate central banks allege that they do not target a specific level of exchange rate but they stated several reasons for intervention. In countries where inflationary pass-through is high, these interventions particularly aim to reduce exchange rate volatility. In some cases the reason for intervention can be to supply liquidity to the foreign exchange market; or to increase the level of foreign reserves (Moreno, 2005). Many central banks would argue that their chief objective is to prevent large swings in exchange rate rather than to meet a specific target for the level of the exchange rate. Yet others would oppose that it is better to avoid

intervention in the foreign exchange market. If investors know that central bank do not intervene in foreign exchange markets, they would endeavor to hedge their risks, and this would help the market in hedging instruments to develop. Such limitations can be temporarily lowered by forward market intervention, where the central bank commits to deliver foreign exchange at a future date (Mohanty and Scatigna, 2005).

3.3.1. How Do Foreign Exchange Interventions Affect Monetary Policy?

While considering about whether foreign exchange intervention is effective or not, exchange rate need to be appraised as an asset price. The value of the exchange rate, like an asset, depends on current and future fundamentals. Researches about exchange rate have stressed the vulnerability of exchange rate movements, especially in the short run, to non-fundamental factors such as herd behavior and speculation. From this point of view, intervention may have an impact on the spot exchange rate by means of current fundamentals, expectations about future fundamentals, or expectations not based on fundamentals. The literature has concentrated on three mechanisms that affect the exchange rate: the monetary channel, the portfolio balance channel, and the signaling channel (Moreno, 2005).

A great deal of the emphasis has been given in the literature whether interventions that are sterilized have any considerable effect. The distinction between sterilized and unsterilized intervention traditionally based on a quantity criterion, namely the impact on base money. Empirical studies suggest that foreign exchange interventions does not always sterilized in emerging economies. To increase the impact of foreign exchange interventions monetary authorities in emerging economies may be avoided from sterilization (Mohanty and Scatigna, 2005). When interventions in the foreign exchange market are small, maintaining the stance of monetary policy through sterilization operations will be relatively easy. However, when interventions in the foreign exchange markets are large or being implemented over and over again in the same direction, there will be a conflict between monetary and exchange rate objectives (Disyatat and Galati, 2005).

Another mechanism that affects the exchange rate is portfolio balance channel. In developed economies portfolio balance channel has not any significant impact on exchange rates because a typical intervention may remain diminutive comparatively to the total assets. Moreover, the degree of substitutability between domestic and foreign currency bonds is relatively higher than the emerging economies. However, such an intervention are likely to be more effective in emerging economies because they are more likely to have large foreign assets portfolio relative to domestic assets which can lead to a change in their returns. Moreover, the smaller degree of substitutability between domestic assets and foreign assets in emerging economies will increase the portfolio balance effect in these countries (Mohanty and Scatigna, 2005).

The third mechanism that affects foreign exchange markets is signaling channel. Central banks interventions to the foreign exchange markets could give signals to the markets about future monetary policy. Suppose central bank sales foreign currency to satisfy the higher demand for foreign exchange. This may lead investors to expect a tight monetary policy in the future, and may cause the appreciation of domestic currency (Mohanty and Scatigna, 2005). Monetary authority may try to affect exchange rate markets by verbal interventions, as well. However, this way is likely to be weaker in emerging economies because different from developed economies, central banks in these countries may not have enough policy credibility. To compensate this credibility problem central banks in these countries may have to undertake large and repeatedly interventions. Empirical studies suggest that monetary policy signals to the market do not have a significant impact on exchange rate volatility in emerging market economies (Egert, 2007).

3.3.2. Is Intervention Effective?

As mentioned above, there is a growing consensus in emerging market economies that reference or policy interest rates implemented by central banks is a good system in normal times. However, this is not always true in abnormal situations and interest rate policy may not yield expected results. Emerging economies embody some economic weakness arises from their structural characteristics. Different from

developed economies, “liability dollarization” and in various cases “domestic liability dollarization” is an endemic case in emerging economies. In countries where liability dollarization and domestic liability dollarization is high, central banks can not take an active role as a Lender of Last Resort (LORL). This situation may necessitate foreign exchange interventions in emerging economies (Calvo, 2006).

Consider, for instance, a sudden stop and reversals of international capital episode in which economy as a whole seriously suffers from decreasing international credit. On such an occasion, public debts have to be financed by printing money and central bank has to provide necessary liquidity for financial markets. In developed economies, where an effective LOLR in place, central banks can easily get a grip on the situation by extending necessary loans to banks in order for the run not to cause costly withdrawals of credit lines to the private sector. This action need not have any impact on prices because there is a higher demand for central bank liquidity. The situation, however, would be different in emerging economies since “liability dollarization” and “domestic liability dollarization” is prevalent in these economies. In such a case, providing domestic liquidity may not be neutral and will lead to an upward pressure on exchange rates and prices. Furthermore, if the domestic prices are sticky, the real exchange rate will further increase. It will drive the private sector to take precautionary actions such as withdrawing their bank deposits which, along with “domestic liability dollarization”, endangers the health of the banking and thus, payments system. Presumably, this will be reflected in higher and more volatile interest-rate spreads, having a negative impact on the credit market. In order to avoid such a scenario central banks in emerging economies have to directly intervene in foreign exchange markets (Calvo, 2006).

3.4. Reserve Accumulation

High level of reserve ratios is one of the most important policy implication that were strongly advised to emerging economies in order to avoid financial instability. Foreign exchange reserves held by emerging economies are at an unprecedented high level in relation to their incomes or trade, in so much that a multiple of those held by advanced countries. In the 1980s, monetary authorities in

both industrial and developing countries sustained comparatively stable and consistent levels of foreign reserves, about 4% of GDP. However after the 1990, this situation has significantly changed. Although advanced economies have still been sustaining a steady level of reserve ratio about 4% of their GDP, emerging economies has significantly raised their reserves at a level more than 20% of their collective GDP. Reserves start to rise stridently up just around 1990, the year that is generally known as the beginning of the epoch of financial globalization. Figure 3.7 clearly depicts the difference between the industrial countries' reserves and the emerging countries' .reserves. This boom in emerging countries' reserves is not related with real magnitudes, such as outputs or imports, but it is related with financial magnitudes.

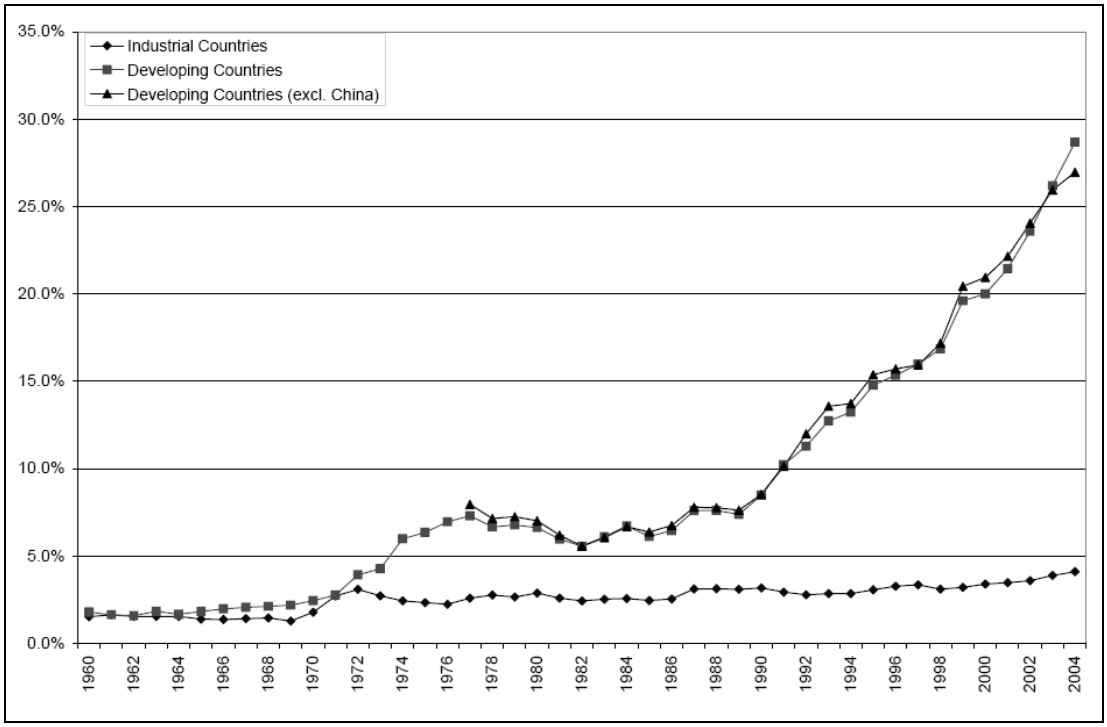

Figure: 3.7. Foreign Reserves as a Share of GDP

Source: Rodrik, 2006, p: 15

Why have the central banks of emerging economies accumulated such large amounts of reserves? There are some considerations to explain why emerging countries hold such large amount of reserves. According to one view, central banks'

demand for reserves depends on its perception about vulnerability. If an emerging country facing higher adjustment cost from an ultimate correction to a temporary external disequilibrium, it would tend to hold large amount of foreign reserves. Some economists argue that growing financial integration seriously increase this adjustment cost. Increased frequency of financial crises in emerging market economies is a strong evidence for this argument. Another view argues that, different from advanced economies, emerging economies may not have the enough opportunity to access international capital markets in the case of a negative external shock. This drawback leads emerging economies to hold large amount of reserves as a precaution. Another argument is that since the external borrowing cost associated with country risk premium, emerging economies hold large amount of reserves in order to reduce the solvency and country risk premium and thus cost of borrowing (Mohanty and Scatigna, 2005).

Although importance of holding foreign exchange reserve is widely accepted, there is a little agreement on the optimal level of reserves. It would also depend on whether reserve accumulation reflects the intention of reducing external vulnerability or restricting exchange rate movements. If reserve accumulation reflects the intention of reducing external vulnerability, the central bank's demand for reserves is expected to decline as reserves rise in relation to certain vulnerability indicators (Mohanty and Scatigna, 2005).

However, when the objective is to control the exchange rate movements it is difficult to determine the level of reserve ratio. In principle, countries adopting floating exchange rate need not hold large amount of reserves. On the other hand, holding large amount of reserves is an exigency for countries pegging their exchange rate. In practice, however, the demand for reserves seems to be high regardless of the exchange rate regime (Mohanty and Scatigna, 2005).

Why have the central banks of emerging economies, which claim that they are implementing freely floating exchange rate, accumulate large amount of reserves, and do not let the exchange rate do all the work. The answer is partly "fear of floating". In the case of sudden stop episode central banks in these economies take an active role in the foreign exchange market as the lender of last resort and intend to reduce excessive fluctuations in the exchange rate. During sudden stop episode

central banks prone to change their exchange rate regime to some form of fixed or pegged exchange rate. In his paper "Monetary Policy Challenges in Emerging Markets: Sudden Stop, Liability Dollarization and Lender of Last Resort" Calvo (2006) demonstrates this situation. According to Calvo (2006), central banks lost large quantities of international reserves regardless of their exchange rate regime. There is not a remarkable difference in loss of international reserves and exchange rate depreciation (see, table: 3.1.)

Table: 3.1 Media Test

EXCHANGE RATE	Maximum Loss of Reserves [a/]	Maximum Loss of Reserves/GDP [b/]	Maximum Nominal Depreciation [c/]
FLEXIBLE			
Mean	-15.435	-1.625	26.435
Standard Error	(3.512)***	(0.365)***	(7.162)***
Observations	30	30	30
FIXED			
Mean	-19.238	-2.267	20.495
Standard Error	(2.246)***	(0.326)***	(8.795)**
Observations	90	87	90
DIFFERENCE BETWEEN FLEXIBLE AND FIXED[d/]			
Mean	3.802	0.643	5.940
Standard Error	(4.388)	(0.595)	(15.816)

[a/] Percentage difference between the minimum level of international reserves during a Sudden Stop and the pre-crisis level.

[b/] Calculated using one-year lagged GDP.

[c/] Percentage difference between the maximum exchange rate during a Sudden Stop and its pre-crisis level.

[d/] Test t of difference in medias.

Note: The exchange rate regime correspond to 1-year lagged of Levy-Yeyati and Sturzenegger's (2005) three-way classification.

* significant at 10%, ** significant at 5%, *** significant at 1%

Source: Calvo, 2006, p: 7

* The sample covers all developing economies included in WDI
* The sample period spans from 1990 to 2004.

3.4.1. Optimal Reserve Ratio and the Cost of Holding Reserves

The outstanding rise of foreign exchange reserves has raised the question of whether foreign exchange reserves among emerging market economies have increased too large than the tone. It is oblivious that foreign exchange reserves among emerging economies have highly excess the traditional rules for reserve adequacy beyond what may be required for transactional needs. Traditionally, the literature has worked with three indicators: 1) reserves/imports; 2) reserves/M2 and 3) reserves/short-term external debt. The first indicator is justified by the possibility of an unexpected decrease in the demand for exports such that the country should hold adequate reserves to meet at least 3 months of imports. The second indicator means that countries should have reserves equal to 20% of their M2 in case of an unexpected capital outflow. The third indicator (known as the Greenspan-Guidotti rule) means that countries should have enough reserves to cover 100% of their short-term external debt (Rodrik, 2006).

When assessing the foreign exchange reserves with traditional indicators, it is seen that foreign exchange reserves of emerging economies have risen considerably beyond the amount needed to cover three months of imports or 100% of short-term debt (see figure: 3.8 and figure: 3.9). Another indicator that has been suggested in the literature to asses the adequacy of reserves is the stock of broad money supply (M2). It is an important indicator because in the case of a "sudden flight" the demand for foreign currency could reach to a considerable amount of domestic money supply. According to this indicator, however, foreign exchange reserves do not seem to be increased as high as the other two indicators (see figure: 3.10)

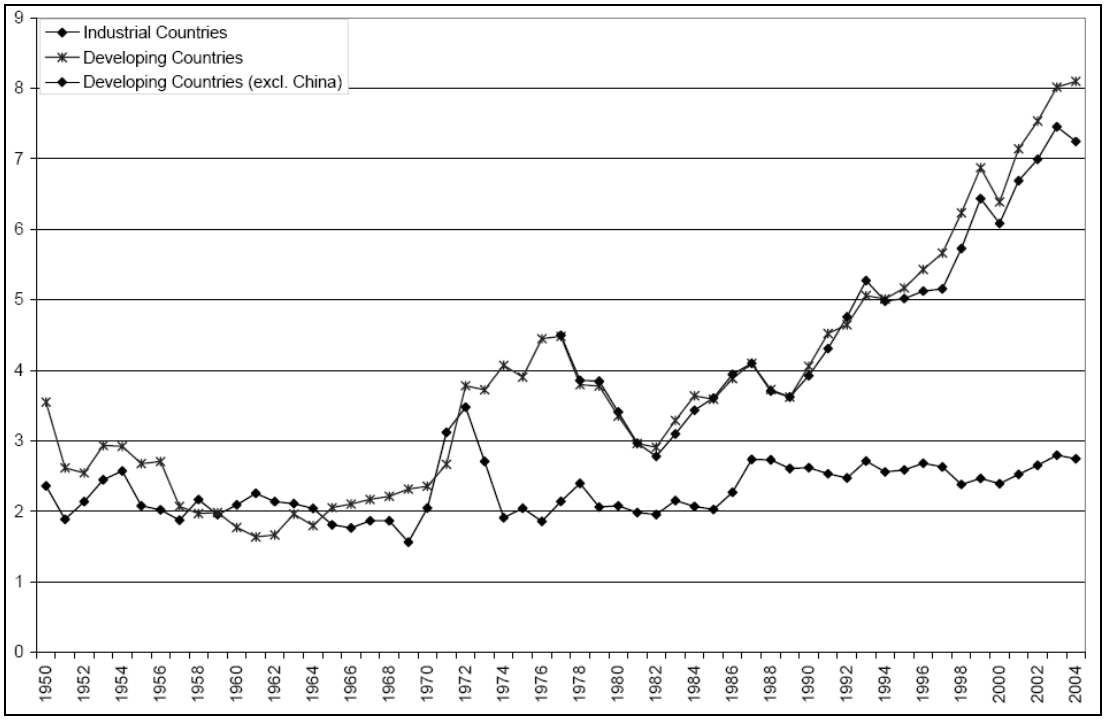

Figure: 3.8 Foreign Reserves (Excluding Gold) in months of Imports

Source: Rodrik, 2006, p: 16

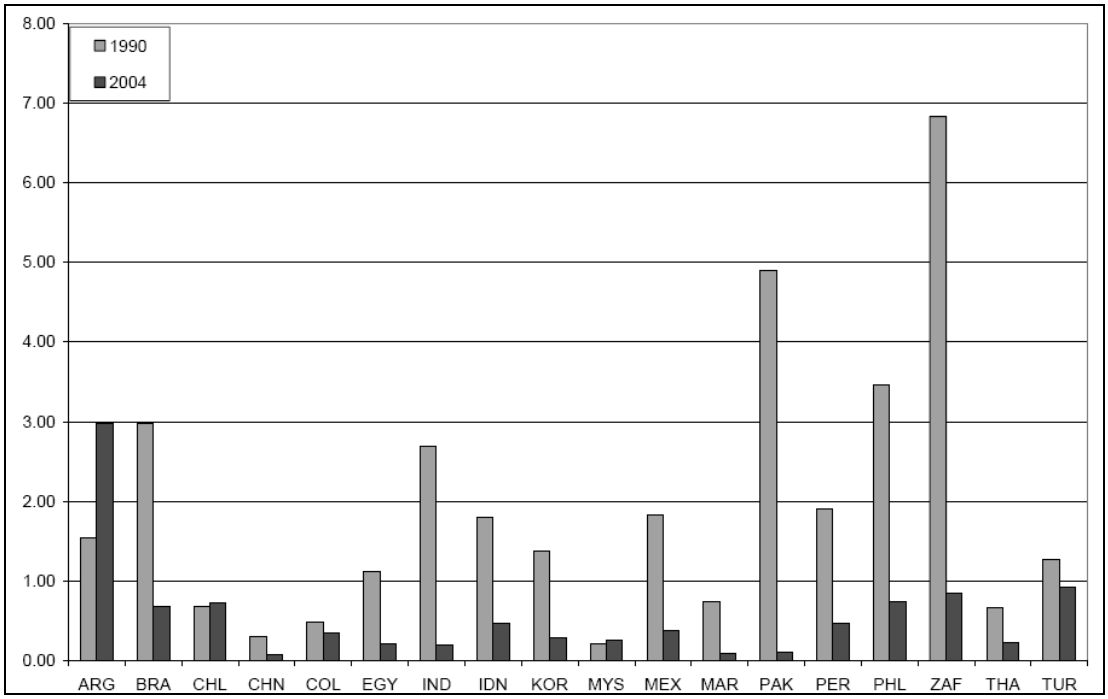

Figure: 3.9 Short-Term Debt/Reserves Ratios in Emerging Market Economies

Source: Rodrik, 2006, p: 18

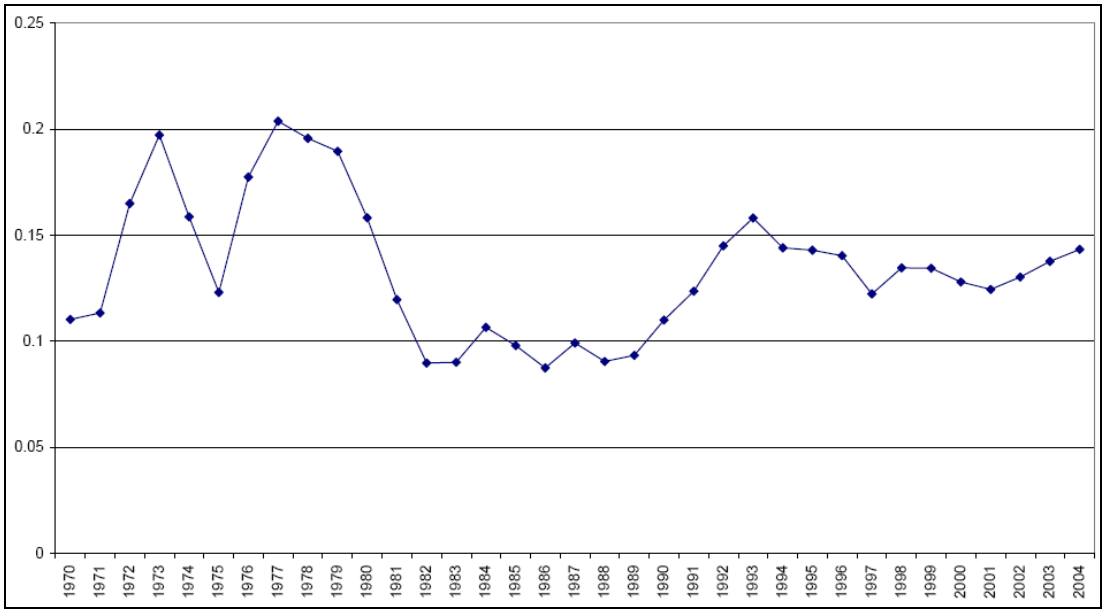

Figure: 3.10 Reserves as a Share of M2: Emerging Market Economies (Excluding China and Taiwan)

Source: Rodrik, 2006, p: 17

Large reserve accumulation can create some challenges for monetary policy. Large and continuous increase in reserves may leave the central banks in a difficult situation unless such interventions sterilized. Such interventions in order to increase reserve ratio may lead undesirable expansion in monetary growth, and thus demand and inflation (Mohanty and Scatigna, 2005; 30-35). Continuous reserve accumulation may create the expectation of future appreciation of domestic currency and it can lead a sharp decline in the long-term interest rate and easing of credit conditions. Furthermore, the expectations of future appreciation may lead investors to rely heavily on external borrowing and leave them unhedged to sharp currency depreciation (Mohanty and Scatigna, 2005; 30-35).

In order to asses reserve adequacy, costs and benefits of reserve accumulation should be evaluated carefully. Holding large amount of reserves can create considerable costs for countries in question. In assessing the fiscal costs of reserves, the spread between the interest rate paid on domestic government bonds and the return on foreign exchange reserves is an important benchmark. In order to equalize external borrowing central banks purchasing foreign assets from domestic investors

and sell them domestic government bonds. The difference between the return on foreign assets and domestic government bonds can be considered as the fiscal cost.

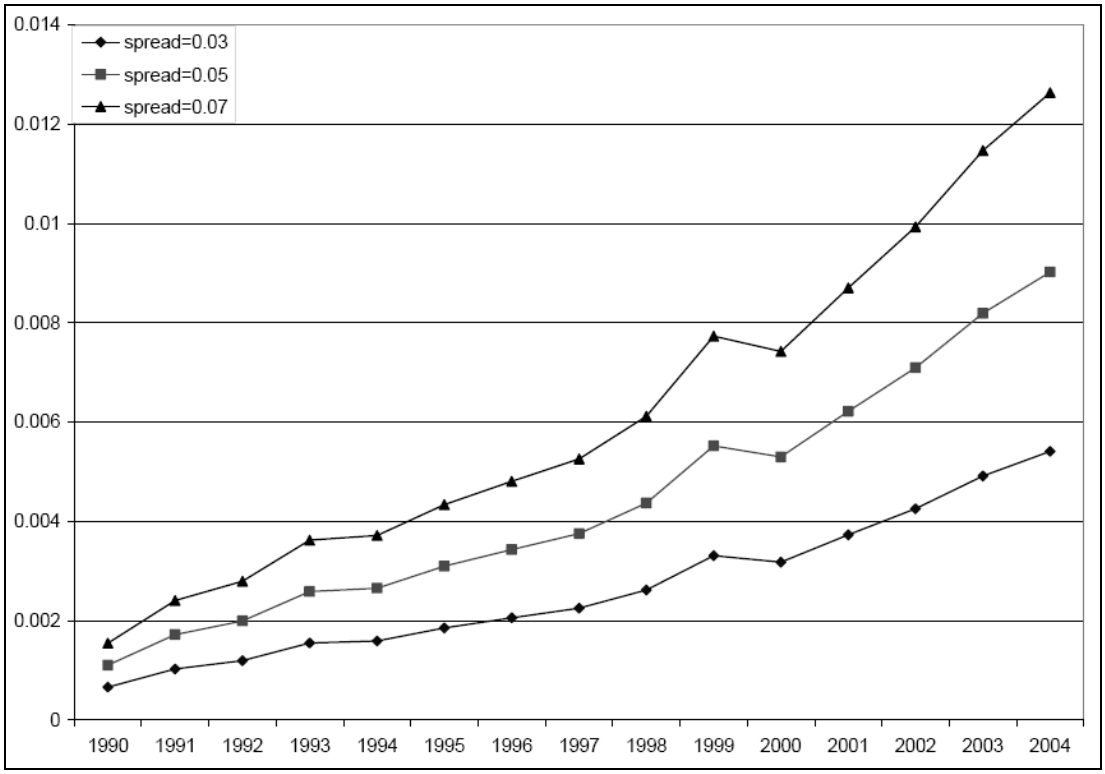

Figure: 3.11 Social Cost of Excess Reserves for Emerging Economies (percent of GDP)

Source: Rodrik, Dani, 2006, p: 20

* Based on the Rodrik's calculations.

The most important cost of holding of reserves, however, stems from the spread between the interest on private short-term external borrowing and the return on foreign assets. Some economists have also recommended that in assessing the actual cost of holding reserves that a country undertake as a whole, the opportunity cost of accumulating reserves in terms of not investing in the domestic economy should also be taken into consideration. However, one should not ignore the benefits of holding reserves. In calculating the cost of holding foreign exchange reserves it is to be weighted against the benefits of holding reserves. Therefore the real cost of holding reserves can be considered barely reserves in excess of what may be necessary for

transactional needs. In assessing the transactional needs we can use the traditional rule of thumb, the three-months-of imports rule (Rodrik, 2006). In regard to assessing the cost of holding reserves we can use the difference between the return on foreign assets and cost of borrowing from abroad. This assumption suggests that the cost of holding reserves may have reached to 1 % of GDP in emerging economies (see figure 3.11).

In his highly influential paper, "The Social Cost of Exchange Reserves", Dani Rodrik (2006) does not provide a number for the optimal level of reserves but argues against the massive accumulation of reserves that developing economies have been building since the 1990s. Developing countries lost 1% of their GDP by holding more reserves than the amount required to cover three months of imports. He argues that current levels of reserve holdings are excessive and this behavior (of accumulating reserves) is difficult to reconcile with rationality.

Rodrik (2006) points out that government reserve accumulation is often the counterpart of private sector flows, and argues that theoretically, the difference between the rate private lenders charge private sector borrowers for short-term external lending and the rate of return on the government's reserve assets offers the best measure of the social cost of holding reserves. Rodrik (2006) describes excess reserves as reserve holdings greater than required to cover three months of import. His round figures also suggest that protection against the sharp output swings associated with sudden stops in capital flows is also worth about 1% of emerging market GDP (Rodrik, 2006; 10). However, Rodrik argues that a decrease in the short-term external debt of emerging countries could reduce the risk of a sudden stop at a lower overall social cost than high levels of reserves. Hence, Rodrik suggests that emerging countries should reduce their short-term external debt in place of holding equal amount of foreign reserves to their external-debt (Greenspan-Guidotti rule). Rodrik has exemplified this situation as below.

> Consider a country that lives by the Guidotti-Greenspan-IMF rule. Suppose a domestic private firm or bank takes a short-term loan from abroad of $1 million. The Central Bank now has to increase its reserves by an equivalent amount. The usual strategy that the Central Bank will follow is (a) to purchase foreign currency in domestic financial markets to invest in U.S. government or other foreign

short-term securities and (b) to sterilize the effects of its intervention on the money supply by selling domestic government bonds to the private sector. When all these transactions are completed, the domestic private sector ends up holding $1 million of domestic government bonds balancing its foreign liability of $1 million, while the Central Bank has $1 million more in foreign assets and $1 million less in domestic government bonds.

Three consequences are noteworthy. First, the application of the Guidotti-Greenspan- IMF rule implies that, even when the process is initiated by borrowing from abroad, the home economy ends up with no net resource transfer from abroad. The increase in the private sector's foreign liability matches the increase in the Central Bank's foreign assets. Second, short-term borrowing abroad does not enhance the private sector's overall capacity to invest. This is because the private sector ends up holding additional government securities equal in magnitude to its borrowing abroad. And third, aggregating the domestic private and public balance sheets, the net effect is that the economy has borrowed short term abroad (at the domestic private sector's cost of foreign borrowing) and has invested the proceeds in short-term foreign assets (Rodrik, 2006; 6-7).

According to Rodrik, there are two important costs. First and foremost, the cost which the economy bears as a whole for every dollar of reserve assets. The economy pays a cost equals difference between the private sector's cost of short term borrowing abroad and the return that the Central Bank earns on its foreign assets. The difference between the interest costs of domestic government bonds and short term foreign borrowing is equal to a transfer from the public to the private sector in domestic economy. This process represents the fiscal cost of the holding reserves (Rodrik, 2006; 7).

Lipschitz, Messmacheer and Mourmouras (2006) also do not provide a number for the optimal level of reserves. The authors however argue that developing countries are not losing 1% of their GDP by holding reserves but are buying affordable insurance (for 1% of GDP) to reduce the risks of sudden stops. For them, Rodrik's analysis exaggerates the costs of holding reserves and therefore plays down the benefits that high level of international reserves provides to most emerging economies.

Their paper reviews three different methods of calculating the costs of holding reserves: 1) Rodrik's measure (difference between foreign interest rates at which the private sector borrows and the rate at which reserves are invested); 2) the difference

between the marginal product of capital and the return on reserves; and 3) the difference between the interest rate on domestic government debt and the interest rate on US treasuries and similar reserves assets (the fiscal cost of holding reserves). They argue that the actual cost of holding reserves is smaller than is usually estimated no matter which measure is used.

Lipschitz, Messmacheer and Mourmouras (2006) argue Rodrik overestimates the actual spread on short-term private sector external borrowing, at least for countries with high levels of reserves. Actual spreads on short-term debt for China, Korea, Mexico and Russia were between 50 and 100 basis points. They reject the second measure on conceptual grounds: since external assets cannot be used directly to finance domestic investment, the only real way to increase domestic investment is to lower domestic interest rates. This argument is effectively an argument that domestic monetary policy is too tight, not an argument about the cost of holding reserves. Finally, they argue that the estimates of the cost of holding reserves based on the difference between domestic and foreign interest rates tends to overstate the real cost of holding reserves, as most estimates ignore capital gains (and losses) from exchange rate changes. Since the currencies of most emerging markets have tended to depreciate over time, the costs of holding reserves are often overestimated. For example, once exchange rate changes are taken into account, the difference in returns on Mexican peso debt and US dollar debt between 1978-2005 falls from 26% to 2%.

They propose a new composite reserve indicator – 20% of imports, 10% of M2 and 100% of external debt service. The weights on the different components of the composite emerge from an empirical analysis of the level of reserves needed to avoid running out of reserves in the face of adverse shocks; the overall composite indicator is also set to limit the risk that the country's reserves would be depleted. The authors' note that they cannot easily use their methodology to assess what is the adequate value for the composite indicator – they end up setting thresholds relative to both the observed standard deviation of changes in emerging market reserves and the observed maximum loss. Their work generally implies many countries should be holding higher levels of reserves than implied by most traditional criteria – though some countries' end-2004 reserve holdings still seemed large even by their criteria.

3.5. Capital Restrictions

In recent years the most controversial argument in exchange rate regime is that: under free capital mobility pursuing an independent monetary policy depends on the adoption of freely floating exchange rate regime. A country does not pursue an independent monetary policy if the country adopts free capital mobility and pegged exchange rate regime simultaneously which is called "impossible trinity" in the literature. If a country wants to allow free capital mobility and to have an independent monetary policy, it should accept floating exchange rate regime. Some economists, however, claim that it is a policy dilemma since there is no reasons for emerging economies to allow free capital mobility. At the same time free capital mobility had led to currency crises in almost all emerging economies due to sudden capital flow reversals. Restricting the free capital mobility will also reduce the risk of currency crises in these economies (Bernanke, 2005).

However, restricting the capital mobility is still remains a controversial issue among economists. Some argues that restricting capital mobility may have some positive aspects for emerging economies on the basis of implementing independent monetary policies and preventing of currency crises; however, it should not be forgotten there are also serious drawbacks for emerging economies in using such types of policy choices. The form of restriction is an important issue, as well. There are different types of capital account restrictions. Emerging countries could use capital outflow restrictions, anti-speculative controls and capital inflow restrictions (which I will address in more detailed on the basis of Chilean experience) or some combination of these (Edwards, 2000).

Many emerging countries have used capital outflow restrictions in the past in order to prevent themselves against financial crises. The main objective behind these restrictions was to lower interest rates and revives economic growth. Emerging countries have also tried to create a wedge between domestic and foreign interest rate in order to gain control over monetary policy. Different types of capital outflow restrictions have been put into practice by emerging economies However, the most prevailing types of capital outflow restrictions are limiting corporate lending and investment abroad; and forbidding non-residents to borrow domestic currency.

China, Korea, Indonesia, Malaysia, India, and Hong Kong were the most outstanding examples for capital outflow restrictions. However, most countries have either abolished or attenuated the capital outflow restrictions so far (Mohanty and Scatigna, 2005).

Why have emerging economies abandoned implementing capital outflow restrictions? The high cost of maintaining capital outflow restrictions are notable for emerging economies. Capital outflow restrictions lead to a sub-optimal policy by reducing incentives for key reforms. It is also reduce investment opportunities for residents and support inefficient capital use. Another reason is increased trade and financial liberalization. Increased trade and financial liberalization improved the role of foreign direct investments and it leads emerging economies to liberalize their capital outflow restrictions. Implementing capital outflow restrictions became inefficient since the foreign direct investments have trivialized the distinction between residents and non-residents Third and most crucial point is large capital inflows in emerging economies. In recent years emerging economies have been facing with serious currency appreciation and sterilization problems. Therefore, on the one hand allowing capital inflows and on the other hand restricting capital outflows can cause difficulties for the exchange rate management (Mohanty and Scatigna, 2005).

Another type of control is restricting non-residents to access domestic currency. This type of control aims to prevent speculative attacks for domestic currency. In general, high inflation rate among emerging economies and inability to borrow at a lower rate like developed economies can lead a spread between emerging economies' and international interest rates. Thus, emerging economies have to raise interest rates in order to tame inflationary pressures and sustain their debt service. Therefore, high interest rate can cause speculative pressures on domestic currency. An expectation of a probable depreciation may lead investors to borrow domestic currency to buy dollars and may further aggravate these pressures. Since emerging economies' financial markets are shallow and vulnerable to swings in investors' sentiment, restricting non-residents to access domestic currency may help to lessen speculative pressures on domestic currency and it may give the chance of implementing more independent monetary policy to the authorities. However, such criticisms directed to

capital outflow restrictions are also valid for anti-speculative controls. Implementing anti-speculative controls may not give intended result since the foreign direct investments have blurred the distinction between residents and non-residents. Another criticism is that these types of restrictions strangle the domestics markets and helps to maintain weak regulations in financial markets (Mohanty and Scatigna, 2005).

The Case of Chile

Along with the "trade liberalization" program, Chile started to eliminate its capital account in 1974 and during this program Chile preferred to implement a fixed exchange rate regime. Chile, however, did not take due precautions while eliminating the capital restrictions. Along with weak regulations, government's support to the local financial institutions and insurance on banks deposits lead to serious moral hazard problems and therefore this gave rise to large amount of capital inflows to the country. This situation has created maturity and currency gaps between assets and liabilities of the country. Due to this vulnerable situation, Chile affected seriously from the international recession in the beginning of the 1980s which devastated all emerging economies. The deep financial crisis has drained country's international reserves, Chile had to abandon exchange rate peg and high devaluation was ensued indispensably which caused severe losses across all the sectors of the economy (Cifuentes and Desormeaux, 2005).

Proper policy choices went through by Chilean government helped to accelerate economic recovery. In order to address moral hazard and systematic risk issues, Chilean government made necessary regulations for banks and financial institutions. Besides all these, sound macroeconomic policies helped to strengthen Chilean economy and favored the return of the capital flows to Chile. This situation led to Chilean economy to came up against best-known economic dilemma. Chilean government either allowed to capital inflows and this brought about currency appreciation and hence external balance problem, or reduced interest rates and deter large amount of capital inflows but this beget inflationary pressures (Cifuentes and Desormeaux, 2005).

The policy options that could be followed against this situation is either to allowed exchange rate appreciation but limiting this appreciation with sterilized interventions and offsetting the cost of sterilization by tight fiscal policy, or restricting capital inflows and alleviating the controls on capital outflows. Chile followed the combination of these two options and as from the beginning of the 1990s started to eliminate the controls on capital outflows (Cifuentes and Desormeaux, 2005).

Chile followed a more gradual approach in capital inflows restriction and adopted unremunerated reserve requirements (URR) in June 1991. Chile's unremunerated reserve requirement is equivalent to a tax on capital inflows and the rate of the tax depends on the period during which the funds stay in the country. The rate of the tax is inversely related the duration of the stay of the funds in the country.

Table: 3.2 Capital Inflows (gross) to Chile (Millions of U.S.$)

Year	Short-Term Flows	Percentage of Total	Long-Term Flows	Percentage of Total	Total	Deposits*
1988	916.564	96.3	34.838	3.7	951.402	-
1989	1.452.595	95.0	77.122	5.0	1.529.717	-
1990	1.683.149	90.3	181.419	9.7	1.864.568	-
1991	521.198	72.7	196.115	27.3	717.313	587
1992	225.197	28.9	554.072	71.1	779.269	11.424
1993	159.462	23.6	515.147	76.4	674.609	41.280
1994	161.575	16.5	819.699	83.5	981.274	87.039
1995	69.675	6.2	1.051.829	93.8	1.121.504	38.752
1996	67.254	3.2	2.042.456	96.8	2.109.710	172.320
1997	81.131	2.8	2.805.882	97.2	2.887.013	331.572

Source: Edwards, 2000, p:51

*Deposits in the Banco Chile due to reserve requirements

In adopting these restrictions Chilean authorities have four goals in their mind. First of all, they intended to retard capital inflows and canalize these inflows to a longer maturity. Secondly, they aimed to prevent currency overvaluation arises from large capital inflows. Thirdly, they intended to allow the Central Bank to maintain high spread between domestic and international interest rates. The main purpose behind this was to help government to reduce inflation at a lower level. And the fourth, it was expected that the controls would reduce country's vulnerability to the international financial instability (Edwards, 1999).

Table: 3,3 Ratio of Short-Term Bank Loans to Total Bank Loans (percentage)

	Mid-1996	End-1996	Mid-1997	End-1997	Mid-1998
Argentina	53.4	56.3	54.2	57.7	57.4
Brazil	57.7	63.0	62.6	64.3	62.6
Chile	**57.7**	**51.2**	**43.3**	**50.4**	**45.9**
Colombia	45.9	39.3	39.4	40.0	39.6
Mexico	47.8	44.7	45.5	43.7	44.9
Peru	78.3	79.2	67.0	69.3	75.7
Indonesia	60.0	61.7	59.0	60.6	55.0
Korea	70.8	67.5	68.0	62.8	45.8
Malaysia	49.7	50.3	56.4	52.7	48.6
Taiwan	86.4	84.4	87.3	81.6	80.1
Thailand	68.9	65.2	65.7	65.8	59.3

Source: Edwards, 2000, p: 52

The important question is that: were capital inflows restrictions effective? Table 3.2 demonstrates that after the impositions of capital inflows restrictions, short-term capital flows declined sharply. On the other hand, after the imposition of restriction long-term capital inflows – that is, flows with more than a year maturity- increased steadily except the year 1993 and after that year total volume of capital inflows increased, as well. In fact, this situation provides support for the view that by the restricting capital mobility composition of the capital inflows can be affected. With regard to the debt composition, as may be seen from table 3.3, the ratio of

short-term loans to the total loans decreased significantly. However some critics have risen to this argument. In case of a financial turmoil capital restrictions do not make a sense since in such a situation investors want to be on the safe side irrespective of the tax they have to pay. However, as may be seen from the table 3.2 during the Mexican crisis in 1994 and Asian the crisis in 1997, long-term capital inflows to Chile tended to increase steadily. This is strongly proving the positive role of the capital inflows restriction on the basis of compositions of capital inflows (Edwards, 1999).

One of the alleged virtue of Chile-style capital controls, it was expected to enhance the autonomy of monetary policy. In combating with inflation monetary authority can implement tight monetary policy in order to control aggregate demand without the fear of exchange rate appreciation.

As may be seen from table 3.2 unremunerated reserve requirements discouraged short-term capital inflows and encouraged long-term capital inflows. This was expected to reduce the volatility of international capital flows into the country and therefore reduce exchange rate volatility.

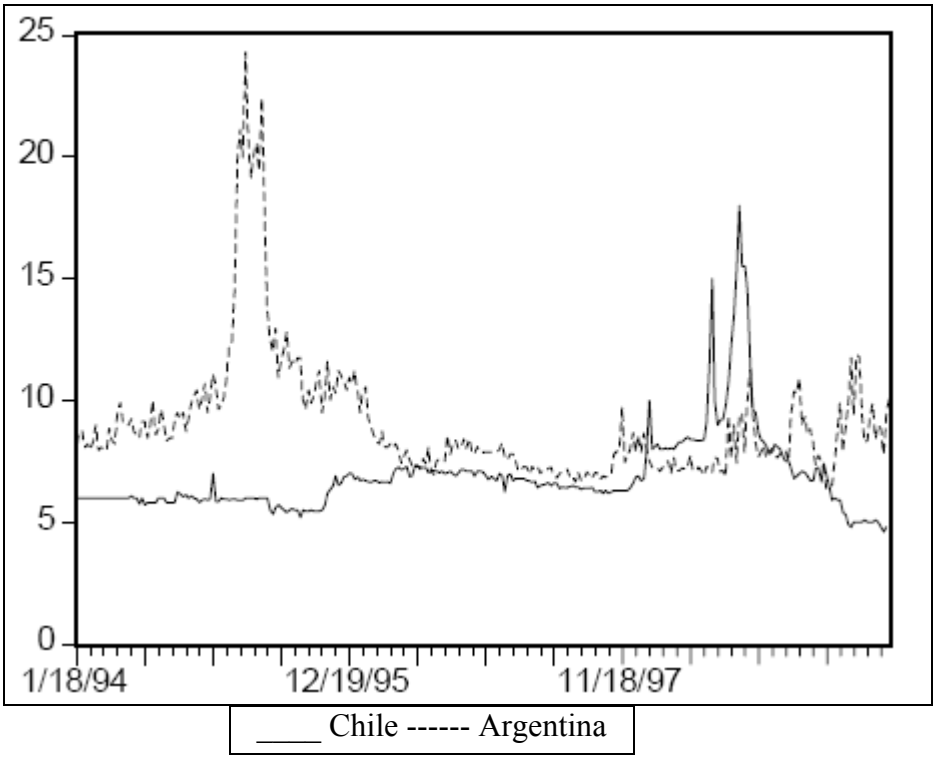

Figure: 3.12. 90-Day Deposit Interest Rates of Chile and Argentina

Source: Edwards, 2000, p: 61

Another indicator that demonstrates the financial stability in Chile during aforesaid period is the volatility of interest rates. Figure 3.12 depicts the comparative nominal interest rates between Chile and Argentina. As it is clearly seen from figure 3.12, during the period of capital restrictions the volatility of nominal interest rate of Chile is considerably low in relation to Argentina. This situation demonstrates that capital restrictions provide some degree of immune against the contagion and reduce the external vulnerability and thus provide independency on monetary policy.

After all, we can say that Chilean-style of controls may be useful for emerging economies; however, its effect should not be overemphasized. In countries followed sound monetary and fiscal policies, the capital controls may have positive effects. In contrast, countries followed bad policies; capital controls would not have remarkable effects. If capital controls were supported by sound macroeconomic policies, they would be useful in realization of some structural changes in the short-run.

The negative sides of capital controls, it discriminates against small and medium sized companies. The cost of the capital controls weighed heavily on the small sized companies and increased their financing costs. When it is considered small and medium sized companies take an important place in emerging countries, these controls can create an obstacle for economic growth. Another problem is that countries implementing capital controls the authority may be over-confident and this may lead them to follow reckless policies and may create big problems for their economies. Capital restrictions may produce some distortions in capital versus labor costs and may distort resource allocations. It may create bigger problems for emerging economies at social income distributions that have already a problematic issue (Mohanty and Scatigna, 2005).

CONCLUDING REMARKS

Financial deregulation accelerated at the beginning of 1990s has profound effects on the emerging market economies. Together with the financial liberalization, most of the countries have abandoned etatist policies, which have been seen as an obstacle in providing capital financing, and started to pursue liberal policies. Developed economies have deemphasized the role of government on their economies and this situation was seen as a practice for emerging economies. Inadequate domestic savings in emerging economies to finance their domestic investments caused emerging economies to see the international capital as a remedy. Together with financial deregulations, emerging economies would have easily accessed to international capital markets and seized their economic growth and development objectives.

Along with financial liberalization, capital flows became free across countries. However, over the few past decades, especially in 1990s, the world economy has experienced severe financial crises caused by sudden stops of capital flows and contagion effects. Generally, countries that opened their capital account encountered with an influx of capital flows. This situation started to challenge emerging economies' macroeconomic balances and to complicate managing exchange rate. Integration with international capital flows without strong institutions to manage the macroeconomics and regulate the financial system, left these countries vulnerable against negative external shocks.

Lacking strong institutions and effective supervision provoked to moral hazard, excessive external borrowing, maturity and currency mismatches, exchange rate misalignments, bubbles in asset prices and fiscal problems. Financial crises triggered panic, which in turn hindered emerging economies to access international capital markets. Therefore, inability to access international capital markets caused severe current account adjustments in emerging economies. At the same time, this situation brought about solvency problems and consequently gave rise to economic collapse and output loss.

In chapter I, I review the financial deregulation and the capital movements that arise from financial liberalization. In this chapter, I examine the factors that

determine capital movements into emerging economies and the sustainability of these movements.

In chapter II, I deal with the financial crises that happened in the 1990s. In this chapter, besides macroeconomic imbalances, which was classically held responsible for financial crises, I analyze the role of financial panic, herd behavior and contagion on the financial crises. Again in this chapter, developments in the financial crisis literature and the importance of "balance sheet analyses" are examined.

And finally in chapter III, I research the effects of capital mobility on the monetary policies of emerging market economies, to what extent capital mobility affects implementing independent monetary policies and what policies have to be implemented in emerging market economies in order to avoid financial crises. To the extant that, the role of exchange rate regime on implementing independent monetary policies and avoiding financial crises are illustrated with sundry samples. In this chapter, the importance of interest rate policies and reserve accumulation in stabilizing economies are emphasized. At the end of the third chapter, I evaluate the capital restrictions on the basis of Chile's experience. In this part, I scrutinize whether capital restrictions are effective in preventing financial crises, in what way capital restrictions influence short-term and long-term capital movements and to what extent it protects countries against sudden stops.

The discussion below presents important lessons that can be derived from my study:

- Financial liberalization has substantially increased the amount of capital flows towards emerging economies. These movements not only are determined by internal factors, such as countries macroeconomic performance but also are determined by external factors, such as interest rates in developed economies. Thus, sustainability of capital flows does not solely depends on the macroeconomic performance of emerging economies, it also depends on the developed economies' economic polices that is beyond control of emerging economies. For this reason, fluctuations in capital movements are always a risk for emerging market economies. Therefore, emerging market economies can barely minimize these fluctuations with strong policies.

- Besides macroeconomic imbalances, financial contagion and herd behavior play a crucial role on the emerging market crises.
- Balance sheet analyses shed light on the reasons of emerging market crises. As classically argued, the view that fiscal deficit is the main reason of financial crises have been widely changed. The importance of the mismatches at the private sector balance sheet's -such as accumulating large stocks of external liabilities, maturity and currency mismatches- have been understood and Asian crisis set a good example for this situation.
- Prudential supervision and strong financial institutions play a crucial role in eliminating such balance sheet mismatches.
- The effectiveness of soft pegs were started to question by economists and largely lost its validity. "Bipolar View", namely super-fixed and freely floating exchange rate has become popular among economists. Although super-fixed exchange rate regimes – currency board and dollarization- provide credibility and help for emerging economies to curb inflation, it increases the possibility of large external borrowing and speculative pressures on the exchange rate.
- Floating exchange rate regime operates like a safety valve in case of a crisis and removes the risks stemming from fixed-exchange rate regime. Floating exchange rate regime also enables the emerging economies to implement independent monetary policies. Inflation targeting helps emerging economies to tame the inflation. Floating exchange rate regime have increasingly being adopted by emerging market economies, nevertheless emerging economies directly or indirectly intervene in foreign exchange markets because of fear of floating.
- Like industrialized economies, most of the central banks in emerging market economies prefer to choose over night interest rates as the main target rather than quantity-based targets.
- Reserve accumulation is vital for emerging market economies to abstain from financial crises. Theoretically, although floating exchange rate

regime makes necessary adjustments, emerging economies should continue to hold large amount of reserves.

- Although there are some implications for accumulating reserves - such as sterilization problem, fiscal cost, and social cost- it insures emerging market economies against the risks of sudden stops and reversals of capital flows.
- Capital controls, especially Chilean style of controls, will be beneficial in realization of some structural changes in the short-run, if they are supported by sound macroeconomic policies. These types of controls are effective in discouraging short-term capital inflows and encouraging long-term capital inflows, like in Chilean case. However, these types of controls may create financing problems for small and medium sized companies which take an important place in emerging market economies.

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