AN ALTERNATIVE LOOK AT BALANCE-OF-PAYMENTS PUZZLE: STRUCTURAL DECOMPOSITION OF ACCOUNTS OF 16 EMERGING MARKETS

A Master's Thesis

by
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January 2006

To the memory of Fatma Us (1924 – 2004)

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The Institute of Economics and Social Sciences
of
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by

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In Partial Fulfilment of the Requirements for the Degree of
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in

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I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Economics.

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ABSTRACT

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Master of Economics

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The empricial evidence on pro-growth effect of capital account liberalization is inconclusive. I argue that, after liberalization, the link between structural finance needs of developing countries and debt flows lost its importance. Instead, the flight of resident capital and unproductive reserve accumulation have created new financing needs, limiting the augmentation of saving pools of developing countries and hence growth. I build four new components from balance-of-payments account that make it possible to track the new financing patterns. I investigate relationship between these components for 15 emerging market countries. I also make a case study for Turkey using vector autoregression technique to establish a causality link between dynamics of the new structural aggregates.

Keywords: Balance of payments, emerging markets, financial crisis

ÖZET

ÖDEMELER DENGESİ BİLMECESİNE YENİ BİR BAKIŞ: 16 YÜKSELEN PİYASA EKONOMİSİ HESAPLARININ YAPISAL AYRIŞTIRILMASI

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Tez Yöneticisi: Prof. Dr. Erinç Yeldan

Ocak 2006

Sermaye hesabının serbestleştirilmesinin büyüme üzerindeki etkisine ilişkin ampirik çalışmalar sağlam bir bulgu ortaya koyamamaktadır. Bu çalışmada, serbestleştirmeden sonra gelişmekte olan ülkelerin yapısal finansman ihtiyacıyla bu ülkelere olan sermaye akımları arasındaki ilişkinin önemini yitirdiği öne sürülmektedir. Bu ilişkinin yerine, yerleşik sermayenin kaçışı ve rezerv birikimi sonucu ortaya çıkan yeni finansman biçimi gelişmekte olan ülkelerin tasarruf havuzlarının büyümesini ve dolayısıyla büyüme oranlarında artışı önlemiştir. Bu yeni finansman biçimini gözlemlemek için ödemeler dengesi dört yeni bileşene ayrılmakta ve bu bileşenlerin ilişkileri 15 yükselen piyasa özelinde incelenmektedir. Ayrıca, Türkiye'ya dair bir vaka analizi yapılmakta ve vektör otoregresyon tekniği kullanılarak bu bileşenler arasındaki nedensellik ilişkisi de araştırılmaktadır.

Anahtar Kelimeler: Ödemeler dengesi, yükselen piyasalar, finansal kriz

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CHAPTER I

INTRODUCTION

The surge in capital flows to the so-called "emerging market" countries[1] has been impressive in 1990s. A basic triggering element for this surge has been capital account liberalization in those countries. It has been the argued that liberalization would be beneficial for growth by attracting the idle savings in the industrialized countries to the developing countries and thus narrowing the investment – saving gap in these countries at a low cost of capital.

However, that has not been the case. Instead, capital account liberalization brought volatility to growth and frequent crisis to emerging markets. Reviewing the extensive cross-country literature on the issue, Prasad at al. (2003) stated that "there is no strong,

[1] The countries which liberalized their capital accounts and attracted much capital inflows are called emerging markets. Although there does not exist a clear definition of an "emerging market" some reference lists may be informative: *The Economist* lists the following countries as "emerging markets": China, Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuella, Egypt, South Africa, Israel, Czech Republic, Hungary, Poland, Russia and Turkey. Meanwhile, *JP Morgan* lists Brazil, Mexico, Russia, Turkey, Philippines, Venezuella, Colombia, Argentina, Peru, South Africa, Ecuador, Panama, Poland, Ukraine, Bulgaria, Nigeria, Egypt and Morocco in its "Emerging Market Bonds Plus – EMBI+ Index." *Morgan Stanley Capital International* has a larger list: Argentina, Brazil, Chile, Chin, Colombia, Czech Rep., Egypt, Hungary, India, Indonesia, Israel, Jordan, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, Turkey, Venezuela.

robust and uniform support for the theoretical argument that financial globalization *per se* delivers a high rate of economic growth."

Attempts to identify the factors that link capital account liberalization to growth have created a vast literature. This literature generally focuses on information asymmetries and their negative results regarding attraction of more capital to emerging markets. Nevertheless, flight of resident capital from emerging markets after liberalization, and role of unproductive usage of capital flows as reserves in order to sustain capital flows did not attract much attention. Liberalizing under macroeconomic imbalances, inappropriate macroeconomic policies or poor management of capital account may result in these unfavorable circumstances that may limit the pro-growth effects of capital account liberalization even if the emerging market attracts much capital.

The structural financing needs of developing countries can be defined as current account deficits plus net foreign direct investments. Before capital account liberalization, capital inflows have traditionally been used to finance this structural need. I argue that after capital account liberalization this relationship lost its importance. Instead, the flight of resident capital and unproductive use of capital flows as reserves have created new financing needs. Consequently, the role of capital account liberalization in narrowing investment - saving gaps in emerging market countries have been limited.[2]

[2] I elaborate other factors in limiting the positive effect of capital account liberalization on growth in Section 2.2.3.

The thesis is structured as follows: In the second chapter I describe the surge in capital flows to emerging market countries in 1990s and its causes. I explain the case for capital account liberalization. Then I review the empirical effects regarding the growth effects of liberalization and I pinpoint some of the explanations for the failure of growth premise. I also explain the role of capital flight and productive reserve accumulation in this regard. In the third chapter, I describe my methodology. I give details about the traditional presentation of balance of payments and the new components that will be used in my analysis. The fourth chapter is the core of the thesis where I support my argument by investigating the balance of payments dynamics of fifteen emerging market countries. Lastly, in the fifth chapter, I provide a case study of Turkish financial liberalization, using the same methodology in a historical framework of Turkish economy in 1990s. I also provide vector autoregression results that establish a causality relationship between capital inflows and outflows in this chapter. I conclude in the sixth chapter.

CHAPTER II

MOTIVATION

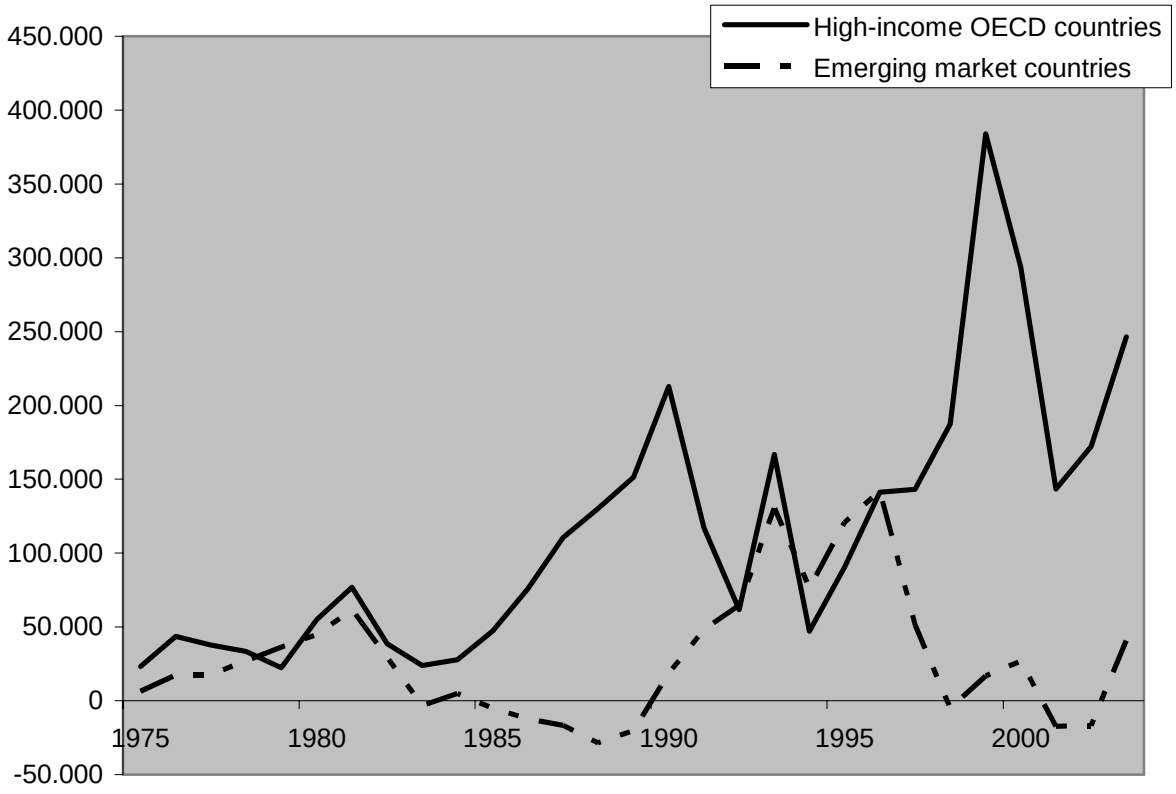
This chapter provides a literature review and framework for the following analysis. In the first section I overview the trends in capital flows in 1990s. In the second section, I first outline the case for capital account liberalization. Then I review empirical evidence regarding growth effects of it and lastly I outline some explanations on the non-existence of a robust relationship between capital account liberalization and growth. In the third section I turn the flip side of balance of payments and suggest that capital outflows and reserve accumulation may also have played a role in limiting the pro-growth effects of capital account liberalization.

2.1. Recent trends in capital flows and liberalization

The surge in capital flows to developing countries in early 1990s is a well-known fact. The size of the surge is impressive. According to Eichengreen and Mussa (1998) "net flows to developing countries have tripled from roughly $50 billion a

year in 1987 – 89 to more than $150 billion in each of the three most recent calendar years."

Figure 1. Capital flows to high-income OECD and emerging market countries



Source: IFS

High-income OECD countries: United Kingdom, United States, France, Ireland, Iceland, Netherlands, Japan, Norway, Switzerland, Sweden, New Zealand, Italy, Greece, Finland, Denmark, Germany, Canada, Belgium, Austria, Australia; **Emerging market countries:** China, Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuella, Egypt, South Africa, Israel, Czech Republic, Hungary, Poland, Russia and Turkey.

The figures are in million US dollars. Capital flows exclude foreign direct investment.

Figure 1 illustrates this magnitude of capital flows to developing countries in comparison to high-income countries. Apparently, capital flows to high-income

countries also increased in 1990s, but this increase is surpassed by the surge in capital flows to developing countries. For the countries represented in Figure 1, capital inflows attracted by developing countries has increased 3.2 times from 1975 – 89 period to 1990 – 97 period, whereas capital inflows to high-income countries was 10% higher in 1990 – 97 period compared to 1975 - 89.

The surge in capital flows today, albeit great, is not unprecedented in history. Global capital markets witnessed another integration process approximately in the 40-year period before 1914. The surge in the "first globalization wave" was larger than today when the capital flows are scaled by GDP. However, there are some major differences in composition of capital flows: The pre-1914 wave was dominated by claims on governments, infrastructure and mining companies of developing countries and those claims were mostly comprised of bonds. Conversely, today a larger set of financial instruments are traded and claims on developing countries involve equities as well as bonds (Bordo et al., 1998).

A similar comparison can also be undertaken with the expansion in capital flows in 1970s, largely thanks to the abandonment of Bretton Woods system. The 1970s rise in capital flows was smaller compared to the recent surge, but it is worth reviewing it to identify similarities and contrasts. The system through which capital flows was directed at developing countries was operated in the following way: The trade surpluses generated in oil-exporter countries were accumulated in banks of industrial countries. This accumulation led to an expansion in private credit in the form of

syndicated bank loans to developing countries. Official development assistance, which largely stemmed from cold-war politics, constituted the other way of capital flows to developing countries in 1970s. Nevertheless, the debt crisis of early 1980s in developing countries marked an end to this cycle. Commercial credit to developing countries collapsed. Together with the effect of the fall in revenues of oil-exporting countries in 1980s, this decade was characterized by a low level of capital flows to developing countries (UNCTAD, 1999).

The surge in 1990s is not only larger than the size of flows in 1970s, but in many aspects, it is structurally different. *Firstly,* private capital flows dominate official flows. 80% of capital flows to developing countries are private in 1990s compared to 50% in the first half of 1970s. *Secondly,* within private inflows portfolio inflows gained importance compared to the dominance of syndicated bank lending in 1970s. As of 1997, the portfolio flows constituted more than a third of total flows to developed countries whereas bank lending make up less than a third. In mid-1970s, nearly three quarters of capital flows to developing countries were bank loans, the remaining part being FDI. *Thirdly,* together with the switch to private flows from official flows, the distribution of flows within developing countries becomes uneven. Capital flows were concentrated towards some 20 countries, the so-called emerging

markets. The twenty countries[3] which attracted 50% of capital flows in 1970 – 90 period have been the target of 90% of capital flows to developing countries in 1990s.

There are various factors that have contributed to this surge in capital flows in 1990s. *Firstly,* the change in demographic structure in industrial countries has created a large savings pool to be directed at emerging markets. The accumulated savings of baby-boomers has been a driving force of the surge in capital flows to developing countries. *Secondly,* the development of institutional investors in industrialized countries has provided a source for capital flows. Pension funds, which accumulated the savings of baby-boomers, have invested to emerging markets where return was high. *Thirdly,* financial liberalization in developed countries in 1980s made possible for these institutional investors to diversify their portfolio to developing countries. With liberalization, the flexibility of banking system in investment and credit creation increased, leading to financial innovation and encouraging "securitization" – capital flows in the form of bonds and stocks. Competition in financial services brought by liberalization also provided an incentive to look for higher returns in probably more risky emerging markets. *Fourthly,* technological innovation has facilitated this process. Advances in information technology not only made it possible to access information on various types of assets in minimum time, but also paved the way for creation of a broad set of new financial assets such as options, futures, and swaps. Progress in information

[3] Argentina, Brazil, Chile, China, Columbia, Ecuador, Egypt, India, Indonesia, Malaysia, Mexico, Morrocco, Peru, Philippines, South Korea, Thailand, Tunisia, Turkey, Uruguay, Venezuella.

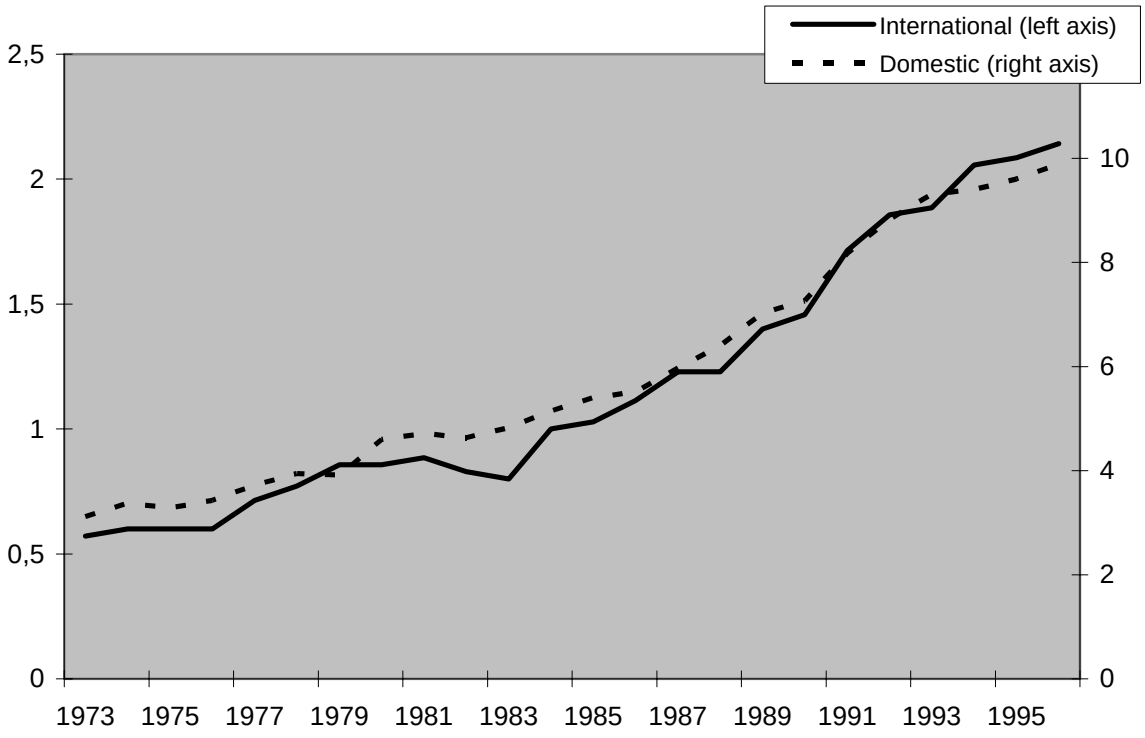
technologies made it possible to trade assets all over the world simultaneously and reduced information asymmetries to some extent by reducing the cost of getting knowledge about far-distant countries. *Lastly,* and probably most importantly, capital account liberalization in emerging markets has made possible for various types of flows to get into these countries (UNCTAD, 1999; Eichengreen and Mussa, 1998)

Capital account liberalization has been an obvious trend in emerging market countries since late 1980s. Capital account liberalization or international financial liberalization[4] has generally been part of a policy-package, which also includes domestic financial liberalization and has been implemented after or together with current account (or trade) liberalization. This policy package has sometimes included other measures for domestic economic liberalization such as privatization and deregulation.

In the literature analyzing financial liberalization, international financial liberalization has only been one dimension, the others being other reform packages targeted at domestic financial sector. Williamson and Mahar (1998) list elements of financial liberalization as follows: (1) elimination of credit controls, (2) deregulation of interest rates, (3) free entry into banking sector, or more generally, the financial services industry, (4) bank autonomy and (5) private ownership of banks, and lastly (6) international financial liberalization.

[4] I use the terms "capital account liberalization" and "international financial liberalization" interchangeably throughout the thesis.

Figure 2. Domestic and international financial liberalization



Source: Mody and Abiad (2005)

The figure illustrates the Average values for Mody / Abiad indexes for domestic and international reform categories. Mody and Abiad (2005) measures six dimensions of financial liberalization: (1) elimination of credit controls, (2) deregulation of interest rates, (3) free entry into banking sector, or more generally, the financial services industry, (4) bank autonomy and (5) private ownership of banks, and lastly (6) international financial liberalization. In their index 3 represents full liberalization and 0 represents full repression.. Domestic financial liberalization index is the total of the first 5 components, hence ranges from 0 to 15. International financial liberalization the sixth component and ranges from 0 to 3.

In many instances, reform in these six dimensions have been implemented together or with short intervals. Mody and Abiad (2005) provide indexes for these liberalization dimensions for 35 industrial and developing countries for the period of 1975 – 1996; where, in each dimension of reform "0" represents full repression and "3" represents full liberalization (henceforth *Mody / Abiad index*). A graphical illustration of averages of Mody / Abiad indexes of domestic and international

financial liberalizations in Figure 2 suggest that in general international and domestic financial liberalization go hand-in-hand[5]. Kaminsky and Schmukler (2002) also conform to this view.

In order to make the analysis clear, throughout the thesis, I differentiate international financial liberalization from domestic financial liberalization and I use capital account liberalization (or international financial liberalization / integration) as a set of policies which include[6]: (1) measures that allow foreign residents to hold domestic financial assets, either in the form of debt equity, (2) measures that allow domestic residents to hold foreign financial assets, (3) measures that allow foreign assets to be freely held and traded within domestic economy. It should be noted that these classification measures, from (1) to (3), represent an increasing degree of international financial liberalization; and there exist many countries which engaged in capital account liberalization but has not implemented some measures within these categories, especially in category 3.

It is hard to quantify international financial liberalization. Nevertheless, attempts to this end in the literature show a general liberalization trend in emerging market countries. In the most recent attempt, the average for Mody / Abiad index

[5] Mody and Abiad support the view that domestic / international financial sector liberalization is stimulated by liberalization in other economic dimensions. They also point out the importance of regional diffusion, shocks related to new governments, shocks that emanate from balance of payments crisis are other factors that increase likelihood of financial liberalization. They also argue that trade openness is a structural factor associated with more financial liberalization.

[6] This classification of reforms are due to Ghosh (2005).

(mentioned in the preceding paragraph) for the emerging market countries it covers rises from 0.62 from 1980 to 0.96 in 1990 and 1.85 in 1996.

Williamson and Mahar (1998) make an extensive review of liberalization episodes in various countries. They classify capital account regimes into four categories; namely repressed, partially repressed, liberal and largely liberal. According to their classification, of the 25 developing countries in their sample, from 1973 to 1996, 13 have stepped two or more steps up in liberalization, 5 stepped one step up in liberalization and 7 already had liberal capital account regimes in 1973.

Quinn and Inclan (1997) build an index from legal restrictions presented in IMF Annual Report on Exchange Arrangements and Exchange Restrictions covering restrictions on capital account, export proceeds and multiple exchange rates, in which "0" represents a closed economy while "12" represents an open economy. Their index, as cited in Eichengreen and Mussa (1998), averages constantly around 2.5 for emerging markets between 1960 – 80, then average rises to 3 around 1985 and over 3.5 in 1990s.

Kaminsky and Schmukler (2002) construct another index by reviewing liberalization chronology in 28 countries; and the average capital account liberalization index for the 14 emerging markets in their sample falls to 1.5 at the end of 1990s from a plateau over 2.5 in 1980s, where "3" represents full repression and "0" represents full liberalization.

It should be noted that in these quantifications of capital account liberalization, transition countries from communist regimes are omitted because no data is available for these countries when their capital accounts were repressed. When liberalization in transition countries is also taken into account, the quantitative liberalization trends will be strengthened.

Meanwhile, controls on capital flows have also been a hot issue in the literature. Some countries preferred implementing measures of control instead of full liberalization. The most important example is the unremunerated reserve requirements or *encaje* in Spanish, applied in Chile from 1991 to 1998. *Encaje* was basically a control mechanism on inflows. As it necessitated a certain portion of inflows to be deposited in non-interest bearing accounts at the Bank of Chile, it played the role of an implicit tax on inflows. A similar control was also applied in Columbia between 1993 – 97. Another sort of capital controls were implemented in Malaysia and Thailand in 1997 after Asian crisis. This time, the controls were directed on outflows of capital rather than inflows, and required portfolio outflows to be held at non-interest bearing accounts for a certain period. Nevertheless, these controls were measures against crisis and reversed in a period of one year. Literature on capital controls suggest that, they have limited effect in constraining size of the capital flows and gaining monetary policy independence to the countries where controls are applied. They have been effective, however, in lengthening the maturity of capital flows (Edwards, 1999 and de Gregorio, 2000).

The above review shows that capital account liberalization in developing countries has been a trend since late 1980s, and has been one of the stimulating factors for the other trend of the same era, the expansion of capital flows directed at emerging markets.

2.2. Effects of capital account liberalization on growth

As it was one of the major driving forces behind the surge in capital flows to developing countries, it is worth examining the motivation of those countries for international financial liberalization. In this section, I first outline the case for liberalization. Then, I review the empirical studies that investigate the effect of capital account liberalization on growth and conclude that there exists no ample evidence of a positive effect for emerging market countries. Lastly, I review some of the reasons offered in the literature for the lack of such a positive relationship.

2.2.1. The case for liberalization

The basic argument of the theoretical case for capital account liberalization is the augmentation of national savings via a more efficient allocation of world savings. The argument goes as follows: The developing countries are capital-scarce; hence they offer higher returns to savings. In the meantime, the rich countries are capital-

abundant; therefore they have lower returns on capital. With capital account liberalization, the savings of rich countries will flow to developing countries where they find high returns, and help them closing the investment – saving gaps (Laurent et al., 2002). This process enables investors to achieve higher risk-adjusted returns and income levels in recipient countries rise as a result of capital inflows. As Eichengreen and Mussa (1998) state, "higher rates of return can encourage saving and investment that deliver faster rates of economic growth."[7]

Another argument supporting liberalization is the risk-sharing premise, which basically states that capital account liberalization enables domestic agents in developing countries to diversify their risks and hence reduce unfavorable domestic cyclical effects. This better allocation of risk is expected to spur domestic investment and lead to high growth rates. Domestic agents can also borrow from abroad when incomes are low and lend when incomes are high and smooth their consumption.

[7] They draw on from Goldsmith (1969), McKinnon (1973) and Shaw (1973) when putting forward this argument. See also Lucas (1990) on the reasons deterring flow of capital from rich to poor countries. He suggests that the differences in returns to capital between rich and poor countries may disappear once the differences in human capital, external benefits of human capital, monopoly power on capital flows to certain jurisdictions and political risk associated to countries are taken into account.

It is also expected that with capital account liberalization, domestic financial sector will develop in emerging market countries. A deeper the financial sector will be another channel for international financial liberalization to enhance growth[8].

Lastly, more prudent domestic macroeconomic policies are expected to be implemented after capital account liberalization in order to sustain capital inflows. This policy discipline effect is also predicted to increase domestic investment and productivity, paving the way for higher growth rates (Eichengreen and Mussa, 1998).

Apparently, the case for capital account liberalization is very similar to the case for current account liberalization. Free movement of capital is efficiency-enhancing like free movement of goods, and hence promotes growth[9]. Although capital account followed current account liberalization in many countries, or happened hand-in-hand in some instances, the empirical results regarding the effect of the former on growth is different from the latter. Most studies report a positive and robust relationship between current account liberalization and growth, whereas the relationship of capital account liberalization with growth is *at least* mixed. I review this literature in the next section.

[8] See King and Levine (1993) for the positive relationship between financial development and economic growth.
[9] See Rodrik and Rodríguez (2001) for a skeptic view on association of growth and trade liberalization.

2.2.2. Review of empirical evidence[10]

In general, the significance of the effect of liberalization on growth is tested by adding liberalization as an independent variable to an equation where growth is the dependent variable and the other independent variables are standard variables in growth literature, such as initial per capita income to measure convergence, investment, population, secondary school enrollment rates and regional dummies.

Rodrik (1998) and Quinn (1997) are two pioneers of this literature who come up with differing results concerning the effect of international financial liberalization on growth. Rodrik uses a sample of one hundred industrial and developing countries for the period of 1975 – 89, he finds no explanative power of capital account liberalization on growth. Quinn, conversely, suggests that capital account liberalization is positively associated with growth in the period of 1960 – 89 in the 64 developed / developing countries in his sample.

There are various differences between methodologies of Rodrik and Quinn which also persist in the literature after them. Rodrik uses a *de jure* measure of liberalization compiled from IMF Annual Report on Exchange Arrangements and Exchange Restrictions. His measure of liberalization is binary, 0 meaning closed and 1 meaning open. On the other hand, Quinn builds a measure based on anecdotal evidence provided in IMF Annual Report on Exchange Arrangements which ranges

[10] I follow Eichengreen (2003) which makes an extensive review of cross-country studies investigating effects of capital account liberalization on growth.

from 0 – 4 with increments of 0.5. Many authors refer to Quinn's measure as "more informative." Nevertheless, the difference in methodology is not limited to liberalization measures. Quinn's sample is more favorable to provide positive evidence because it contains more industrial countries than Rodrik's sample; and it has a larger time span, lowering the weight of 1980s which developing countries struggled with crisis and low growth. Lastly, Rodrik uses levels of capital account liberalization, whereas Quinn uses changes in capital account liberalization. The extensive literature after Rodrik and Quinn, which has been reviewed by Edison et al. (2004), provide differing results concerning the effect of liberalization on growth. The differences in outcomes are due to varieties in the sampling of countries, time periods and forms of capital flows (FDI / portfolio / debt; public / private, etc.), and use of levels of differences when considering capital account liberalization, and other explanatory variables in the regression[11, 12].

The idea that capital account liberalization may be conducive to growth in some countries (developed ones) and not in the other countries (developing ones) has created another segment of literature pioneered by Edwards (2001). Edwards uses Quinn's measure of liberalization (his results are also robust when Rodrik's measure

[11] Bekaert et al. (2001) focuses on growth effects of equity market liberalizations and report a robust positive relationship between growth and liberalization. It should be noted that this study does not cover liberalization in the portfolio investments on bonds and other investment aspects of capital account.

[12] A non-econometric study by Gourinchas and Jeanne (2004), using a neoclassical growth model, predicts that switching from financial autarky to international integration is roughly equivalent to a one percent permanent increase in consumption, which is negligable compared to productivity gains that will stem from improving internal allocative efficiency.

is used) and reports that while capital account liberalization is positively associated with growth in high-income OECD countries, the relationship vanishes when a sample composed of emerging market countries is used. Edwards suggests that the non-linearity may be a result of financial development in developed countries. Yet, Arteta et al. (2001) criticize Edwards (2001) on methodological grounds; and instead of a threshold of financial development, they find out that the positive effect of liberalization may be associated with other measures of openness. Consequently, they argue that sequencing is important to reap positive effects of liberalization and current account liberalization should be accomplished before capital account liberalization. Meanwhile, Prasad et al. (2003) also report some evidence of a "threshold" effect, implying that the absorptive capacity of markets may have a role in reaping benefits of international financial integration.

More recently, institutional quality has also been investigated as the cause of non-linearity in the effect of capital account liberalization on growth[13]. Edison et al. (2004) extend the view of Rodrik (1998) that capital account liberalization may proxy for government reputation in a growth regression if the latter does not appear as an explanatory variable. Using both Rodrik's and Quinn's measures (and some other measures) they find that the positive relationship between capital account liberalization and growth vanishes when government reputation is added as a control variable.

[13] Hall and Jones (1999) and Acemoglu et al. (2001) are pioneers in the literature that relates growth to institutions.

Lastly, another paper by Quinn et al. (2001) investigates effects of three variables that may result in non-linearity: (1) economic states before liberalization in line with Edwards (2001) and Arteta et al. (2001); (2) political and legal states before liberalization with the suspicion that democratic regimes may have high compensation costs for the losers from liberalization that may overweigh positive effects; and (3) level of social development before liberalization. They find evidence that liberalization is positively associated with growth but not for emerging market countries with democratic regimes[14,15] .

To sum up, cross-country literature reviewed here provides no ample evidence of significant positive effect of capital account liberalization on growth. It is suggested that the positive effect, if any, is limited to developed countries rather than developing countries. Yet, the attempts to identify the causes of the threshold effect have failed to provide decisive answers up to now. In the next section, I review some of the reasons that are proposed to explain the absence of the link between capital account liberalization and growth in emerging markets.

[14] A recent paper by Alfaro et al. (2005) relates capital flows to the classical variables / instruments in institutions literature. They find capital flows are positively associated with institutional quality. Historical determinants of current legal institutions have a direct effect on capital flows. They also suggest that there is room for the role of policy in determining the level and volatility of capital flows.

[15] Meanwhile, Edison et al. (2002) relate various measures of international financial integration to growth. These measures include Rodrik and Quinn's *de jure* capital account liberalization measures and measures of capital inflows and inflows / outflows as a proxy for actual integration. They are unable to provide a robust link between growth and international financial integration even when they control financial, institutional and policy characteristics.

2.2.3. The reasons of the failure of the case for liberalization

The literature suggests various reasons why capital account liberalization did not deliver its premise of growth. The major explanation lies in the difference between the mechanisms through which capital markets and goods markets work. Unlike the markets for goods, financial markets are typically characterized by "information asymmetries."[16] The first outcome of this characteristic is the "adverse selection" problem which occurs when lenders have incomplete knowledge of borrower quality. Under adverse selection paradigm, lenders will lend at higher rates than the rates deserved by "good" borrowers, thus good borrowers will have an incentive not to seek loans, leaving the lenders with "bad" borrowers. The allocation of capital in this framework, obviously, will not be efficient.

The second outcome of information asymmetries is known as "moral hazard": The borrowers have a chance to alter their behavior after they borrow. If the project goes well, then the borrower will reap the benefits; but if the project goes bankrupt the lender will bear the costs. As a result, the borrower will engage in excessively risky behavior. This will cause the lenders to seek guarantees for their loans, and in many instances the outcome will be explicit or implicit government guarantees on private debt of emerging market countries. Consequently, with insurance on debt, the outcome will be excessive lending for risky projects. It is worth noting that, many emerging market financial systems are characterized by a mismatch between short-

[16] The further explanations of information asymmetries draw on from Eichengreen and Mussa (1998) and Rodrik (1998).

term liabilities and long-term assets as a reflection of intrinsic information asymmetries.

Lastly, information asymmetries may lead to "herding" behavior, where agents follow the lead of those whom they believe to be better informed. As international fund managers place too little weight to their private information, the likelihood of herd behavior increases. The mismatches that stem from moral hazard increase vulnerability of the system to runs[17], rendering herding behavior of international investors "rational." Herding amplifies the effects of both favorable and unfavorable shocks. The result of the former is excessive lending, whereas the result of the latter may be a crisis. Moreover, as many international fund managers treat emerging markets as a basket, rather than giving an individual treatment to each market, herding behavior raises contagion effect of a crisis in one market to another. Short-term nature of borrowing in emerging markets combined with herding behavior may trigger "sudden stops" of capital inflows despite good macroeconomic fundamentals[18].

It is also worth noting that the information asymmetries that are endemic to financial markets are amplified when financial transactions take place in international domain. Obvious reason for this phenomenon is the increasing cost of gathering and evaluating information with increasing geographic distance and cross-cultural

[17] Rodrik and Velasco (1999) show that distorted incentives typically cause excessive short-term foreign borrowing, which causes runs at the end. The larger the short-term borrowing, the larger its real consequences regarding reduced output and consumption.
[18] See Calvo (1998) for a detailed investigation of sudden stops.

differences. Moreover, enforcement of contracts is substantially harder when the lender and borrower are in different jurisdictions compared to financial transactions that take place in the same country.

The information asymmetries may hinder the pro-growth effect of capital account liberalization through several channels. *Firstly,* information asymmetries result in an inefficient allocation of capital. Consequently, market mechanism fails to provide an efficient allocation of capital to the developing countries.

Secondly, as a result of information asymmetries the capital flows become pro-cyclical, i.e., the funds are not available when there are weaknesses / there are more funds than you wish to borrow when economy is going well. The pro-cyclical nature of capital flows makes the risk-sharing and consumption smoothing channels ineffective. Indeed, this channel works in the opposite way than expected.

Thirdly, the positive effect of financial deepening channel on growth becomes flawed given volatile characteristics of capital flows. Financial deepening does not *per se* imply efficient allocation of resources and growth. Instead, given the information asymmetries elaborated above, financial deepening may result in inefficiencies. Typically, domestic investors will not finance long-term investments with the short-term borrowings available from international markets. As a result, the financial expansion is more likely to finance government deficits or consumption booms. In addition, typically most financial crises are preceded by a phase of financial deepening.

In a similar way, the effects of capital account liberalization may be limited or even welfare reducing in the presence of domestic distortions. A classical illustrative case is capital account liberalization before current account liberalization: If a labor-abundant country protects its capital-intensive industries, after international financial liberalization, the funds will flow to this protected sector, in which the country has no comparative advantage. Consequently, the misallocation of resources will be intensified after liberalization. This allocative efficiency effect is not limited to trade barriers but also will be present when there are other distortions such as macroeconomic imbalances.

Lastly, policy discipline may not be imported with capital accounts liberalization. With a typical surge in capital inflows after liberalization due to higher returns of the emerging market country, the governments are more likely to engage in irresponsible behavior, such as running larger fiscal deficits. The experience shows that no one cares about imbalances as long as they can be sustained through capital inflows, and this gives government to exacerbate imbalance. When a sudden stop of inflows occurs, the imbalances result in a crisis.

Moreover, in most countries that liberalize capital accounts, as a consequence of a surge in capital inflows, real exchange rate appreciates seriously, causing an incentive to invest in non-tradables, and discouraging investments in tradables. It is hard to manage the real appreciation effect and distortions caused by real appreciations can lead to deindustrialization in developing countries (Ghosh, 2005).

The reasons that we examined in this section, which also have been the major themes of the literature that explains the lack of association between capital account liberalization and growth, miss an important point: To what extent capital imported after liberalization has been offset by capital exported; and to which extent did the intrinsic risks of liberalization pave the way for unproductive use of capital imported. In the next section, I turn the flip side of the balance of payments accounts to shed light on some possible dynamics that further breaks the link between liberalization and growth.

2.3. The flip-side of balance of payments

In this section I will explain the outflows of resident capital and reserve accumulation in developing countries after they liberalized their capital accounts. I will outline the reasons, dimensions and costs of these two phenomena for emerging economies. This section provides a brief explanation for the reasons that capital outflows and reserve accumulation limited the growth promoting role of international financial liberalization.

2.3.1. Capital Outflows

Most studies reviewed in Section 2.2 concentrate on capital inflows. Failure to obtain any significant relationship between net capital inflows and growth in cross-

country regressions demonstrates the extent to which the financial market imperfections played a role in limiting the channels put forward by case for capital account liberalization. Nevertheless, when assessing the effect of capital account liberalization to close the investment – saving gap in a developing country, one should also consider outflow of resident capital. Put it in another way, a country that attracts inflows of non-resident capital as much as it encourages outflows of resident capital after the capital account has been liberalized will fail to augment its saving pool. One can argue, by focusing on capital inflows, that this country has not attracted capital after liberalization. However, in fact, the country has attracted non-resident capital, meanwhile it has also lost its resident capital and the balance gives zero. The policy implications for the two analyses are quite different: Focusing on inflows, one can give advice to implement policies to attract more capital inflows (perhaps by raising the interest rates). If one considers the inflows / outflow perspective, the advice will be taking measures to decrease outflows in order to reap benefits of inflows in closing investment – saving gap.

In an emerging economy, the risks faced by resident and non-resident investors are typically different. Resident investors face inflation and exchange rate risks; whereas the major risk that non-resident investors confront is the default risk. Both investors face taxes, which include not only explicit taxes on capital, but also include inflation (for residents) and default (for non-residents) taxes. For a government of a developing country with a fiscal deficit, an easy revenue generation source can be an unexpected increase in inflation. In this way, resident investors are taxed. If foreign-

currency-denominated assets are not available domestically, given chaotic monetary history in many emerging markets, it is very likely for residents to acquire claims on non-residents (Dooley, 1988). Moreover, lack of confidence in the enforcement of the residents' property rights may encourage them to diversify their portfolio to foreign assets.

Once the restrictions on outflows are eased, given today's high level of information technologies and financial sophistication, it has been easy for emerging country residents to diversify their portfolios to include foreign assets. According to Cornford and Brandon (1999), "around 300 banking entities from 10 leading developing countries were operating in OECD countries in 1996[19].

Arguably, capital outflows are beneficial for the home country, since the gross national product (GNP) is maximized as a result of portfolio diversification wherever the profits are earned. However, as Stiglitz (2000) argues, when there are positive externalities from domestic investments, such as taxes on capital (which are hard to apply to investments abroad), returns to scale or other spillovers, the utility of domestic investments is higher than investments abroad. In this case, the objective may be maximizing gross domestic product (GDP), not GNP. This case is especially applicable in early stages of development.

[19] cited in UNCTAD (1999: 107). The ideas on capital outflows are gathered from UNCTAD (1999) and Laurent et al. (2002).

2.3.2. Reserve accumulation

Investigations of net inflows or gross inflows have also limited power in demonstrating the effect of international financial integration balancing investment – saving deficit, when the end use of inflows is disregarded. As capital flows are characterized by sudden stops and reversals, emerging markets need to establish credibility to sustain them. The most important way to enhance credibility is to accumulate reserves. Official reserves are seen as insurance to pay the short-term debt of the country in case of a reversal in capital inflows; and ratio of reserves to foreign currency denominated short-term debt has been established as firm indicators of crisis in the literature (Rodrik and Velasco, 1999). When this ratio falls below one for an emerging market country, it is likely that the worried international lenders will exhibit a herding behavior in exiting from the country, culminating in a crisis. Therefore, emerging market countries has to use a significant amount of capital inflows to accumulate reserves.

This reserve accumulation motive to defend exchange rate and establish credibility is unique to the period after financial liberalization. In a closed capital account regime, as the capital flows are related to imports and current account financing, the need to maintain reserves only arises from the time lags between payments of imports and receipts of exports. According to UNCTAD (1999: 23), "traditionally, reserves covering on average three or four months' imports are considered as adequate for such purposes, and even smaller reserves would be needed to the extent

that governments are more willing to respond to current account disturbances by exchange rate adjustments." As a result of international financial liberalization, the number *n* in the statement "reserves cover *n* months of imports" has increased from 3.5 in 1980 to 5.5 in 1997 for developing countries.

The new standard of reserve level suggested by Alan Greenspan[20] is accordingly much higher than to cover several months of imports. As cited in UNCTAD (1999: 111), he tells "countries could be expected to hold sufficient liquid reserves to ensure that they could avoid new borrowing for one year with a certain ex ante probability, such as 95% of the time." Feldstein (1999) also conforms with this view. He put forward that "the most direct way for a country to achieve liquidity is to accumulate substantial amounts of liquid foreign reserves." He also adds "China's $140 billion in reserves sends a strong signal to investors"[21].

However, reserve accumulation has opportunity costs for the emerging market country. Reserves tie up purchasing power that could be used to import goods needed for investment and increase output. Therefore, reserve accumulation has a substantial effect in limiting the capital account liberalization's effect on closing

[20] Chairman of Federal Reserve Board. The citation is from his speech at World Bank conference on Recent Trends in Reserves Management, Washington, DC. 29 April 1999.
[21] A function of reserve accumulation different from the precautionary motive against financial crisis is to prevent appreciation of local currencies and thus promote export competitiveness. China's reserve accumulation, for example, is mainly explained by this motive. Nevertheless, when the general application in emerging economies is considered, the motive of accumulating reserves has generally been precautionary and maintaining competitiveness motive has not been important. See Aizenman and Woo (2005) for more detail.

investment – saving gap. Stiglitz (2000: 1081) explains the cost of holding reserves in a simple manner:

> ...consider a poor developing country. A company within the country borrows, say, $100 million from a US bank that charges him 20%. If the country has been maintaining what it views as minimum prudential reserves then it will have to add $100 million to reserves. For simplicity, assume it holds those reserves in US T-bills. Consider the implications from the perspective of the country's balance sheet and income flows: It has lent the United States $100 million and borrowed from the United States the same amount – it has no new capital. But it pays to the United States every year the $20 million in interest, while it receives from the US $5 million, the interest on the T-bill. Clearly, this is a good deal for the United States but it is hardly the basis for more rapid growth by the poor developing country.

Rodrik (2005) calculates the social cost of holding reserves for developing economies. Even when excluding the part of reserve accumulation due to the traditional current account management purpose, his estimate of annual cost holding reserves is around 1% of those countries' GDPs. In Rodrik's (2005: 9) words, "this is a large number by any standard. It is a multiple of the budgetary cost of even the most aggressive anti-poverty programs implemented in developing countries. Mexico's *Progresa* program, for example, cost around 0.2% of GDP.[22]"

[22] Rodrik (2005) moreover argues that the excessive reserve accumulation in 1990s has not been rational. The emerging economies increased their short-term liabilities together with reserves. According to Rodrik, an optimal policy should have been reducing short-term liabilities while increasing reserves.

In the remainder of the thesis, I will show the effects outflows of resident capital and reserve accumulation in emerging markets after liberalization. I will put forward that with the emergence of a new financing pattern after liberalization, capital outflows and reserve accumulation created new financing requirements for these countries apart from their structural financing needs.

CHAPTER III

METHODOLOGY

In this chapter, I will present the methodology that will be applied in the following chapters. The first section explains the balance of payments system and its traditional representation. I decompose balance of payments and build new components, which are explained in the second section. The third section is on data and sample selection issues.

3.1. Balance of payments accounts and the traditional representation

As defined in IMF (1996:1) balance of payments is "a statistical statement that systematically summarizes, for a specific time period, the economic transactions of an economy with the rest of the world." The balance of payments is concerned with transactions and accordingly it deals with flows rather than stocks. These include transactions in goods, services and income; transfers such as worker's remittances, and transactions related to acquisition or disposal of external financial assets.

The balance of payments statistics are collected by Central Banks in each country. The national statistics are gathered by the IMF and published in its Balance of Payments statistics and International Financial Statistics.

As balance of payments accounts reflect the economic transactions of an economy with the rest of the world, transactions between residents of a country and non-residents are tracked in these accounts[23].

The double-entry bookkeeping system is employed in the balance of payment accounts. In double-entry bookkeeping system, every transaction results in two entries – one for the giving side, one for the receiving side. Credit items reflect payments to residents by non-residents (inward the country) and debit items reflecting payments from residents to non-residents (outward the country). Examples of activities that give rise payments inward the country are exports, debt issuance and inward foreign direct investment; while examples of activities that give rise to payments outward are imports, investments by residents abroad and divestments by non-residents by selling shares or closing down facilities. Traditionally, credits are recorded with plus signs and debits are recorded with minus signs. Hence, the total balance of payments account is zero.

[23] Resident of a country must have a center of interest in that country. IMF (1995:13) states a unit has center of economic interest in a country "when there exists some location (dwelling, place of production, or other premises within the economic territory of the country) on, in, or from which the unit engages and intends to continue engaging (either indefinitely or over a finite but lengthy period of time) in economic activities and transactions on a significant scale."

The standard components of balance of payments are current account and capital and financial account. The transactions in goods, services, income and current transfers are grouped under current account. The capital transfers and transactions in country's external financial assets and liabilities are collected under capital account. The traditional representation is illustrated in Figure 3.

Figure 3. Traditional Representation of Balance of Payments

Credit	*Debit*
Trade in goods and services Transfers Income	
Current account balance	
Liabilities	*Claims*
Direct investment by non-residents (to Turkey)	Direct investment by residents (to abroad)
Portfolio investment bu non-residents (to Turkey) • Equity investment • Bond investment	Portfolio investment by residents (to abroad)
Other investment by non-residents (to Turkey)	Other investment by residents (to abroad)
Capital account balance	
Errors and omissions	
Overall balance	
Changes in reserve assets	
0	

It is worth presenting the recording mechanism of the balance of payments accounts with an example. Consider a Turkish firm importing goods from the United Kingdom for $10 million. The transaction is recorded as a debit item ($10M) in the current account. There has to be balancing entry: If Turkish firm pays with a check

drawn on a Turkish bank, the corresponding transaction in the financial account is recorded as an increase in Turkish liabilities to non-residents (a credit of $10M). If the payment is drawn against an account the Turkish firm has in a British bank, the corresponding transaction in the financial account is recorded as a reduction in Turkish assets (a credit of $10M).

Normally, the total of current and capital and financial account balances should sum up to zero. "In practice, however, when all actual entries are totaled, the resulting balance will almost inevitably show a net credit or a net debit. That balance is the result of errors and omissions in the compilation of statements." (IMF, 1995: 38) The difference between zero and sum of current and capital and financial accounts forms the net errors and omissions item in the balance of payments[24]. With net errors and omissions included, by construction, the three aggregates in balance of payments sum up to zero.

The current account comprises of four basic items: trade in goods, trade in services, income account and current transfers. The content of items in trade in goods and services are obvious and necessitates no further explanation. The transactions recorded in transfers are transactions "whenever an economy does not receive or supply recompense—in the form of real resources or financial items—for goods, services, income, or financial items supplied to or received from another economy."

[24] I will discuss to what extent the net errors and omissions are due to statistical approximations in the next section.

(IMF, 1996: 88) The current transfers include government grants and worker's remittances.

Items in income account, meanwhile, are earnings arising from the provision of the factors of production. As land is associated with residence, the factors of production whose earnings are recorded in balance of payments are labor and capital. Earning on labor are compensations for employees. The income of capital can be divided into two major groups: (1) the income from direct investment are the dividends that investor earns from its direct investments and (2) the income from portfolio and other investments, which includes dividend income earned from equities and interest income from bond investments and trade and other credits.

The capital and financial account has two major sub-accounts, capital account and financial account. Capital account includes capital transfers, i.e., transfer of ownership of a fixed asset or the forgiveness, by mutual agreement between creditor and debtor, of the debtor's financial liability when no counterpart is received in return by the creditor. Moreover, the country's transactions with non-residents in non-produced and nonfinancial assets (such as patents, copyrights, and licenses) are also included in capital account.

The financial account, broadly speaking, keeps track of transactions of financial assets. The credit items represent financial transactions that cause capital inflows to the country; whereas the debit items represent financial transactions that cause capital outflows. Functional classification of the items in financial account results

in four groups: *direct investment, portfolio investment, other investment*, and *reserve assets*. The credit and debit items in the direct investment category represent direction of investment: credit items are direct investments into the country by non-residents; and debit items are direct investments by residents abroad. In the portfolio and other investment categories the credit items are the transactions related to the liabilities of residents to non-residents; and debit items are transactions related to the assets of non-residents in the home country.

The direct investment category records transactions of investments "in which a resident entity in one economy acquires a lasting interest in an enterprise resident in another economy", as defined by IMF (1995: 86). This long-lasting interest is conventionally defined as a ten percent share or voting power. It should be noted that not only equity capital and reinvested earnings are recorded in direct investment account, but also the credits by the investor to the invested enterprise are recorded in this category.

The portfolio investment category keeps record of transactions in equities (not recorded under direct investment), other securities (debt instruments, i.e., bills, bonds and notes) and financial derivatives. "The essential characteristic of instruments classified as portfolio investment is that such instruments are traded or tradable. That is, the instruments offer investors the flexibility to shift, regardless of the underlying maturity of the instrument, invested capital from one instrument to another. Portfolio investors are more concerned than direct investors about rates of

return that are independent of any influence investors may have and about being able to move funds quickly if circumstances so dictate." (IMF, 1996: 124).

Other investment is a residual category that includes all financial transactions not considered direct investment, portfolio investment, or reserve assets. Other investment category can be divided into four sub-categories: (1) trade credits, (2) other loans, (3) currency and deposits, (4) use of at IMF credits and loans, and (5) other assets and liabilities. Trade credits are to assets and liabilities that arise from the direct extension, during the normal course of trading, of credit from a supplier to a buyer. Loans are financial assets that are created through the lending of funds by a creditor (lender) directly to a debtor (borrower); the lender receives no security evidencing the transaction or receives a nonnegotiable document or instrument. The currency and deposits include the currency issued by foreign governments and held by residents represent claims that holders have on issuing governments and notes and coins that are issued by the economy's government and held by nonresidents which represent an economy's external liabilities. The use of IMF credits and loans item is obvious and requires no further explanation.

The last functional category in the financial account is the reserve assets. They consist of financial instruments available to the central authorities for financing or absorbing an imbalance of payments or for regulating the size of such imbalances. As debit items relate to assets held by residents, a debit item (a negative entry) in

reserve assets account represents an increase in reserves. Similarly, a credit item shows a decrease.

3.2. A new structural decomposition

For my analytical purposes, I decompose the traditional components of the balance of payments and following Laurent et al. (2002), I build new aggregates. The salient feature of the new aggregates is the differential treatment of credit and debit entries in the financial account. I demonstrate the new aggregates in Figure 4 and explain them below.

Basic Balance (BB): Basic balance is defined as the current account balance plus capital account and direct investment category of financial account. It therefore gives a measure of country's debt-financing requirement.

Trade in goods and services, income account, current and capital transfers, and net foreign direct investments (FDI) are included in the basic balance. The capital transfers listed in the capital account are in their nature no different than the current transfers listed under current account, so consolidation of two accounts under one title is reasonable.

Similarly, direct investment category of the financial account is different from the other categories of the same account in two fundamental aspects: *First,* unlike most

other credit entries in the financial account (excluding equities in the portfolio investment category), credit items in direct investment category do not represent creation of debt to the rest of the world. *Second,* direct investment typically behaves differently than the other categories. It is less volatile and generally driven by explicit corporate strategies rather than short-term yield motivations or herd behaviors. Therefore, direct investments are also treated differently from other items in financial account and put into the basic balance component.

Figure 4. The structural components of the Balance of Payments

<table>
<tr><td>Credits / Liabilities</td><td>Debits / Claims</td></tr>
<tr><td colspan="2">Basic Balance (BB)

Current Account Balance
Direct Investment, net</td></tr>
<tr><td>Debt Flows (DF)

Portfolio investment

Other investment</td><td>Capital Outflows (KO)

Portfolio investment
Other investment

Errors and omissions</td></tr>
<tr><td></td><td>Change in Reserves (R)</td></tr>
</table>

Source: Adapted from Laurent et al. (2002)

Debt Flows (DF): The transactions that increase country's gross liabilities to the rest of the world are included in the debt flows component. These are the credit entries in portfolio investment and other investment categories, i.e., the entries on the

credit side of the capital account (other than FDI) are collected in debt flows aggregate.

The debt flows component provides a broad measure of the debt-generating capital inflows to the country. However, there are two caveats: *First,* equity investments in the portfolio investment category are in fact not debt-generating. Nevertheless, as a general fact, international investors' motive to engage in transactions with emerging market equities is gaining short-term gains, not long-term dividends. In this respect, investors' motive to buy or sell equities is not different than buying or selling bonds and other debt instruments in the portfolio investment category. Therefore, volatility of equity investments is similar to the other portfolio investments and structurally higher than direct investments. Lastly, data availability problems avoid a healthy break-down of some countries portfolio investment category into equity and bond, etc. sub-categories. Consequently, I opted for including equity investments into debt flows component rather than basic balance[25]. *Second,* as stated in the previous section, loans given by investors to their direct investment enterprises are included in the direct investment category. These transactions are in reality debt creating. However, because of practical reasons, in my analysis, these transactions are included in basic balance rather than debt flows.

Capital Outflows (KO): These are gross claims of residents on non-residents excluding FDI. These are the debit entries in the portfolio investment and other

[25] In this respect, my structural decomposition is different from Laurent et al. (2002)

investment categories of the financial account. The value of the net errors and omissions aggregate is regarded as a measure of "unrecorded capital flight" and also included in the capital outflows component.

Theoretically, "errors and omissions" are due to accounting errors from the approximation methods used. However, following Lane and Milesi-Ferretti (2002) and Laurent et al. (2002), I treat net errors and omissions as "unrecorded flight of resident capital" and hence include them in the capital outflows component[26].

The net errors and omissions measure net unrecorded transactions in the balance of payments. As Lane and Milesi-Ferretti (2002: 3) state "this item measures (net) unrecorded transactions that could reflect the mismeasurement of transactions in current account or financial account or both. If it reflects unrecorded trade transactions, we should adjust the current account accordingly. If it reflects unrecorded financial account transactions, we should add it to capital flows." Therefore the first assumption when treating net errors and omissions as unrecorded flight of resident capital is that the mismeasurement is in financial transactions not in trade transactions. The unrecorded financial transactions may either be capital inflows or outflows. So I further assume that all unrecorded capital inflows are reductions in the stock of assets held abroad by domestic residents.

[26] Dooley (1988), Dooley and Kletzer (1994), Claessens and Naude (1993), UNCTAD (1999) and Boratav (2003) also treat net errors and omissions as unrecorded flight of resident capital.

Given the capital flight phenomenon in emerging market countries, the assumptions seem reasonable. Laurent et al (2002: 12) argue that errors and omissions seem to be larger in emerging market countries. “Sixty percent of errors and omissions in the global balance of payments are due to the emerging market countries, whereas their combined GDP accounts for just over 20% of world GDP.” This may, of course, also be due to underdevelopment of these countries statistical systems. But it is worth noting that the significant improvement in data collections systems in the last 25 years has made no significant effect in lowering the size of net errors and omissions. After liberalization, possible lowering of uncontrolled capital movements is expected to result in a decline in this item, which did not happen.

It should be noted that for some countries which liberalized trade of foreign currency between residents, the net errors and omissions consist not only of uncontrolled capital flight, but also to some extent foreign currency movements from formal to informal economy. However, these movements are similar to the unregulated capital flight both in their causes and consequences, so that we may treat them together for our purposes.

Change in Reserves (R): This aggregate measures the change in country's official reserves. As they are claims on the rest of the world, traditionally reserves are placed in the financial account. However, the cost of holding reserves as explained in Section 2.3 makes treatment of them under another

component informative. In accordance with the traditional representation, a negative balance in this component represents an increase in official reserves. It is worth noting that the reserves in an emerging market economy are not limited to official reserves, banks and other resident agents also hold reserves, however these reserves appear in other accounts and it is only possible to treat official reserves as a separate component.

As balance of payments net out to zero, the new aggregates satisfy:

$$BB_t + DF_t + KO_t + R_t = 0 \qquad (1)$$

Dividing both sides of (1) to the previous years' external debt stock, we obtain the following:

$$\frac{BB_t}{D_{t-1}} + \frac{DF_t}{D_{t-1}} + \frac{KO_t}{D_{t-1}} + \frac{R_t}{D_{t-1}} = 0 \qquad (2)$$

$$\frac{DF_t}{D_{t-1}} = -\frac{BB_t}{D_{t-1}} - \frac{KO_t}{D_{t-1}} - \frac{R_t}{D_{t-1}} \qquad (3)$$

The contributions of basic balance, capital outflows and change in reserves to the change in the external debt stock at each year is demonstrated in (3). *Ceteris paribus*, external debt stock will rise, when there is a basic balance deficit, i.e., $BB_t < 0$; when capital outflows take place, i.e., $KO_t < 0$; and when official reserves are accumulated, i.e., $R_t < 0$.

Further decomposition of BB may be informative regarding the source of debt-financing requirements. The income account in BB, which records net interest and dividend payments, is characteristically negative for developing countries, as they generally have the burden of past debt or they are recipients of foreign investment. When this item is excluded, the remaining balance of BB will show the financing requirement that is not a result of historical factors. Moreover, the balance of income account is typically exogenous to policy decisions. Nevertheless, there is more policy control on the remaining items: trade flows can be adjusted using exchange rate adjustments or trade barriers and FDI can be attracted by regulatory measures to attract foreign investors and privatizations. Therefore, the remaining part of the BB from income account will be revealing about the country's efforts to correct disequilibrium in its balance of payments.

Consequently, I further decompose BB into net investment income (NI) and basic balance excluding net investment income components:

$$BB_t = NI_t + BENI_t \tag{4}$$

Now putting (4) into (3):

$$\frac{DF_t}{D_{t-1}} = -\frac{BENI_t}{D_{t-1}} - \frac{NI_t}{D_{t-1}} - \frac{KO_t}{D_{t-1}} - \frac{R_t}{D_{t-1}} \tag{5}$$

The interpretation of (5) is straightforward: Debt flows increase when there is a deficit in income account, i.e., $NI_t < 0$; or when there is a deficit in basic balance excluding income account, i.e., $BENI_t < 0$.

For a large time span, if one wishes to explore what was financed with debt flows then another equation may be useful. From (1):

$$DF_t = -BB_t - KO_t - R_t \qquad (6)$$

$$-\frac{BB_t}{DF_t} - \frac{KO_t}{DF_t} - \frac{R_t}{DF_t} = 1 \qquad (7)$$

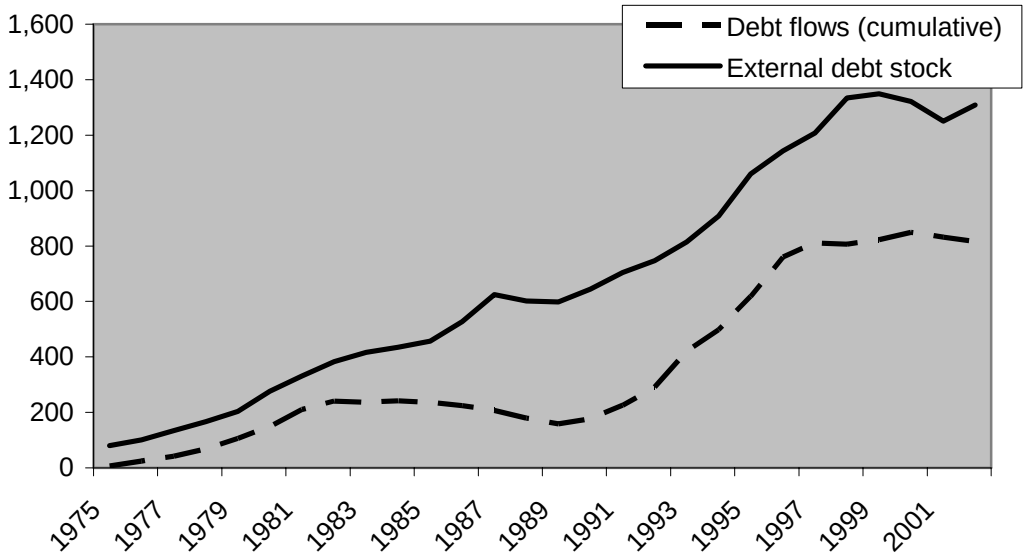
Equation (7) decomposes debt flows in a given period according to their usage. However one should be careful on the balance of debt flows. If debt flows gives negative balance in a certain period, that is, the country has not been a debtor but a creditor, than equation (7) will not be interpretative.

3.3. Data and sample selection

In my analysis, I calculate each of the new structural aggregate for each year for the countries in my sample. The data for the components come from the balance of payments statistics reported in IMF International Financial Statistics (IFS). For the calculation of equation (3) and (5) I use external debt stock data compiled by the World Bank and reported in the World Development Indicators (WDI).

In order to make comments on the relationships given in equations (3) and (5), a look at the relationship between debt flows aggregate and external debt stock is illustrative. The total of cumulative debt flows to the countries in my sample and total external debt stocks of these countries are presented in Figure 5. Apparently, the two series move with the same pattern. This relationship justifies the observation that DF_t / D_{t-1} provides a measure of the percentage increase in debt stock in the current year.

Figure 5. Debt flows and external debt stock for the sample countries



Source: IFS, WDI; figures are in billion US dollars.

The differences between two series stem from various reasons: (1) there exists an initial debt stock, (2) the volatility in exchange rate changes the total value of the debt stock since debt is denominated in various currencies, (3) the interest accrued

but not paid is added to the debt, but it does not appear in the balance of payments, (4) the two series are generated from different data sets by different institutions and naturally there exists difference between them.

The list of the countries that I will analyze is provided in Table 1. They can be grouped into three geographical categories: Asia, Latin America and East Europe. Several emerging market countries are excluded from my analysis. Among them, China and India are significantly larger than the sample countries and their approach to financial liberalization have been cautious. Singapore and Hong Kong have early liberalization stories, however as they are very small by size if not by the size of their financial markets and capital flows to these countries have different motives (they serve as hubs for financial capital) than the countries in the sample. Russia is again very large and its economy mostly depends on natural resources and as a result a very different balance of payments picture emerges.

Table 1. List of Sample Countries

Asia	Latin America	East Europe
Korea Malaysia Indonesia Thailand Philippines	Argentina Brazil Chile Mexico Peru Columbia Venezuela	Czech Republic Hungary Poland Turkey

The data for all the countries in the sample is not perfect. For transition countries, the data begins in late 1980s or early 1990s. For some periods in some countries in the sample, there exist missing data for some forms of capital flows. It is impossible to verify whether data is missing or it is equal to zero. However, I believe this missing data issues does not create a bias in the country analysis.

For each country, and for regional and general totals, I engage in three exercises. First, using equation (5), I graph the contributions of the new components of balance of payments (BOP), that is, net investment income deficit ($-NI_t/D_{t-1}$), basic balance excluding investment income deficit ($-BENI_t/D_{t-1}$), capital outflows ($-KO_t/D_{t-1}$) and reserve accumulation ($-R_t/D_{t-1}$) to increases in external debt stock (DF_t/D_{t-1}) (hereafter Exercise 1). Second, when it provides a useful interpretation, I use equation (7) to decompose usage of debt flows (hereafter Exercise 2). Third, where data are available and results are interpretative, I provide correlations between the components in equation (1) for different periods of a country (hereafter Exercise 3). I use quarterly data in Exercise 3.

As it is a point where data is available for most countries, the country tables start from the year 1984 and cover the period until 2003. Annual data is used when building the country tables. In the correlation analysis, quarterly data is used. For some countries and some periods quarterly data is not available while annual data is.

I begin the correlation period from the earliest date where quarterly data is available for each country and cover until 2003.

CHAPTER IV

LIBERALIZATION EXPERIENCES

This chapter contains the core analysis in my thesis, which uses the methodology presented in Chapter Three. In the first section, I make an aggregate analysis for all emerging markets and for Latin America, Asia and East Europe regions. In the second section I undertake individual studies for 15 emerging market countries. In the third section, I outline some similarities and differences in the 15 countries analyzed and make a synthesis of the liberalization experiences.

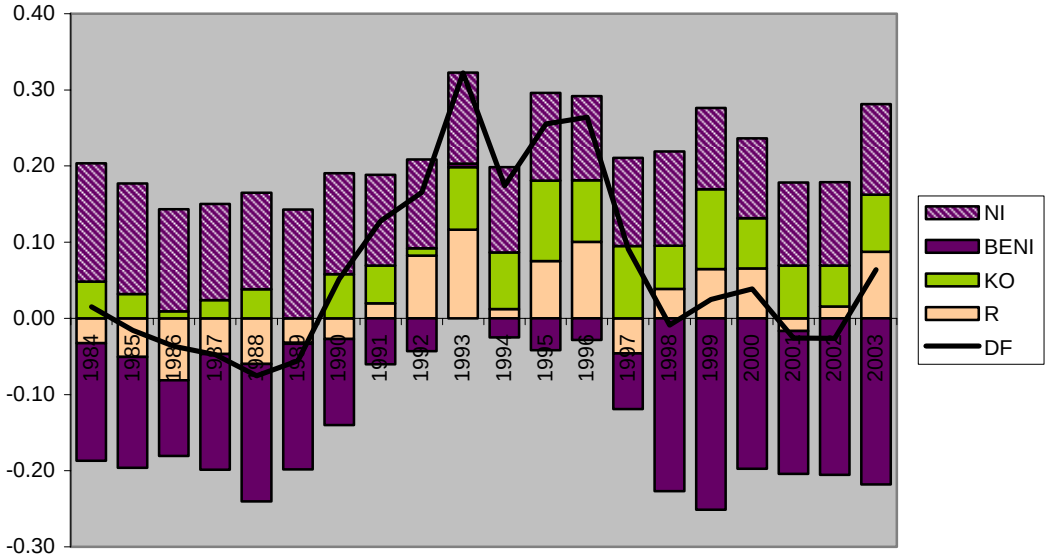
4.1. Some stylized facts

In order to provide a general picture of contribution of our new aggregates to increases in debt stock, I present results of Exercise 1 for the total of all countries in my sample in Figure 6. The surge in debt flows after 1989 is apparent in the figure. In some years, the emerging markets in the sample have got new total debt more than a quarter of their previous year's total debt stock. 1997 marks an end to the surge. Beginning with the Asian crisis in 1997, a series of emerging market crisis

have stopped debt flows to these countries. For the sample countries, debt flows fluctuate around zero after 1997.

Concerning the other components, investment income account has consistently gave deficits, while the other components of the basic balance were either in surplus or gave very small deficits. When, debt flows were abundant, the emerging market countries did not gave surpluses in the other components of basic balance. When debt flows stopped, they offset the investment income deficit with surpluses in the other components. It can be argued that, when the emerging market countries in the sample are treated in aggregate, investment income is the primary cause of basic balance deficits, when they are treated as a whole.

Figure 6. Ratio of BOP components to external debt stock: All countries



Source: author's calculations, IFS

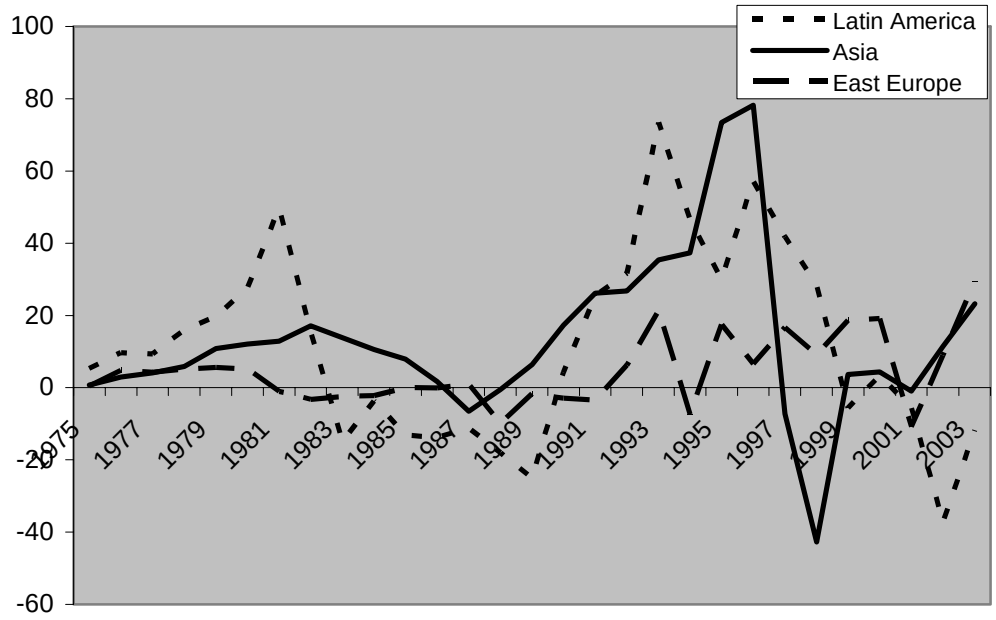
Capital outflows have consistently given positive balance after 1990. The capital outflows are consistently larger in 1990s when compared to 1980s. After liberalization, resident capital flight became a structural phenomenon in the sample countries.

Meanwhile, reserve accumulation accompanied the debt flows surge after 1990. In some years, reserves of up to 10% of previous year's debt stock were accumulated. The only negative balance in reserve accumulation is in 1997, where Asian economies lost a significant portion of their reserves in their attempts to protect exchange rate pegs.

Figure 7 shows debt flows to the sample countries in Asia, Latin America and Eastern Europe. Debt flows to Asia began to rise in late 1980s and reached its peak in 1996. Asian crisis of 1997 resulted in a sharp decline in debt flows to the region, and after 2000 a small recovery is observed. For Latin America, 1980s began with a debt crisis and a fall in debt flows. After negative balances in debt flows in 1980s, there has been an impressive surge in 1990s, which sustained until 1999. With contagion from Asian crisis, beginning with the Brazilian devaluation of 1999, a significant reduction occurred. After the Argentine default of 2001, debt flows began to give negative balance. Debt flows to East Asian countries was nil before 1990, when most countries in the sample was under communist rule, and Turkey had a financially closed economy. A surge similar to the other regions happened after

1990 when the countries acquired open capital account regimes. A fall in debt flows is observed after 2000.

Figure 7. Debt flows to Asia, Latin America and East Europe (bil. $)



Source: IFS

Data for several East European countries are not available prior to 1990. In these years, figures represent debt flows to countries whose data are available.

When the behaviors of our new aggregates are concerned, the contrasting positions of Asia and Latin America in some components are impressive. The behaviors are illustrated in the results of repetition of Exercise 1 for Latin America (Figure 8) and Asia (Figure 9)[27].

[27] The inter-regional capital flows are also included in the calculations. For instance, any flow from Korea to Malaysia is included both in the KO component (for Korea) and in DF component (for Malaysia).

First, NI is in negative balance in all periods in both regions; however the deficit has consistently been larger for Latin American countries. The legacy of past debt is the major reason. External debt stock to GDP ratios are given for sample countries in two regions in Table 2 In 1980, it was 36% for Latin America and 15% for Asia. Larger debt resulted in larger interest payments to the rest of the world. Moreover, rolling over the debt has been more costly for Latin America countries compared to Asian countries, because of the short term structure of the debt. Partly because of this reason, although the external debt stock to GDP ratios converged in 1990s, NI continued to give larger deficits in Latin America. Lastly, large scale privatizations to attract FDI has resulted in larger dividend payments to the rest of the world in Latin America, especially in some countries such as Argentina, further aggravating the imbalance in NI.

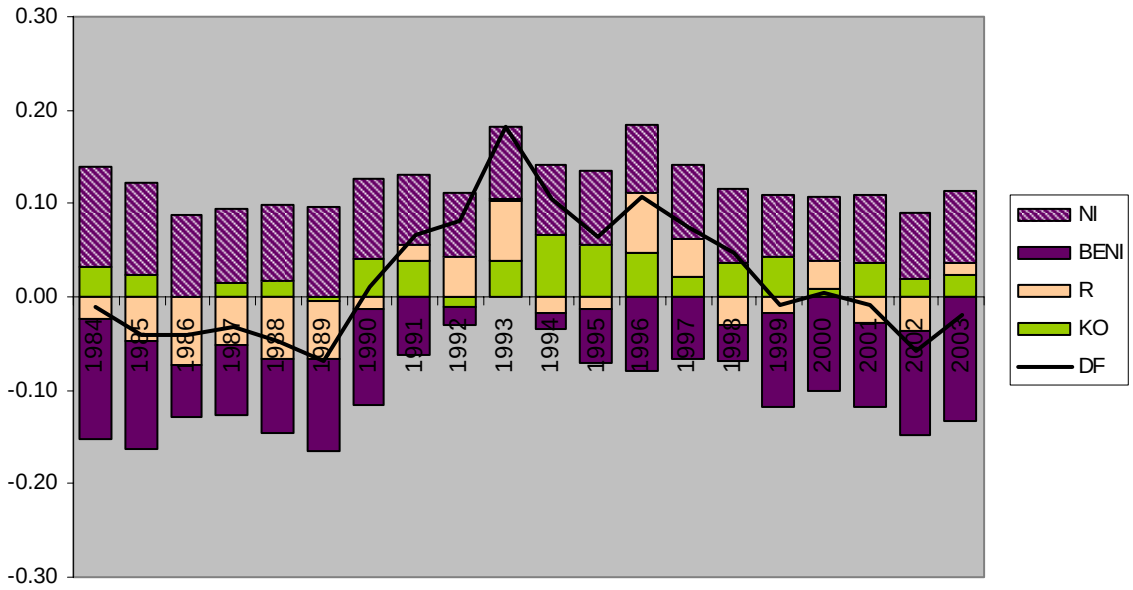
Second, Latin America gave consistent surpluses in BENI, whereas BENI surpluses were nearly not present at all in Asia for the period of 1990 – 97. An interpretation may be the necessity of giving trade surpluses in order to cover large NI deficits in Latin America resulted in this pattern. FDI attracted to large scale privatizations also had favorable effect on BENI surpluses while causing NI imbalances in turn.

Table 2. External Debt Stock / GDP ratios

	1980	1985	1990	1995	2000
Latin America	36%	59%	39%	37%	40%
Asia	15%	27%	27%	33%	44%

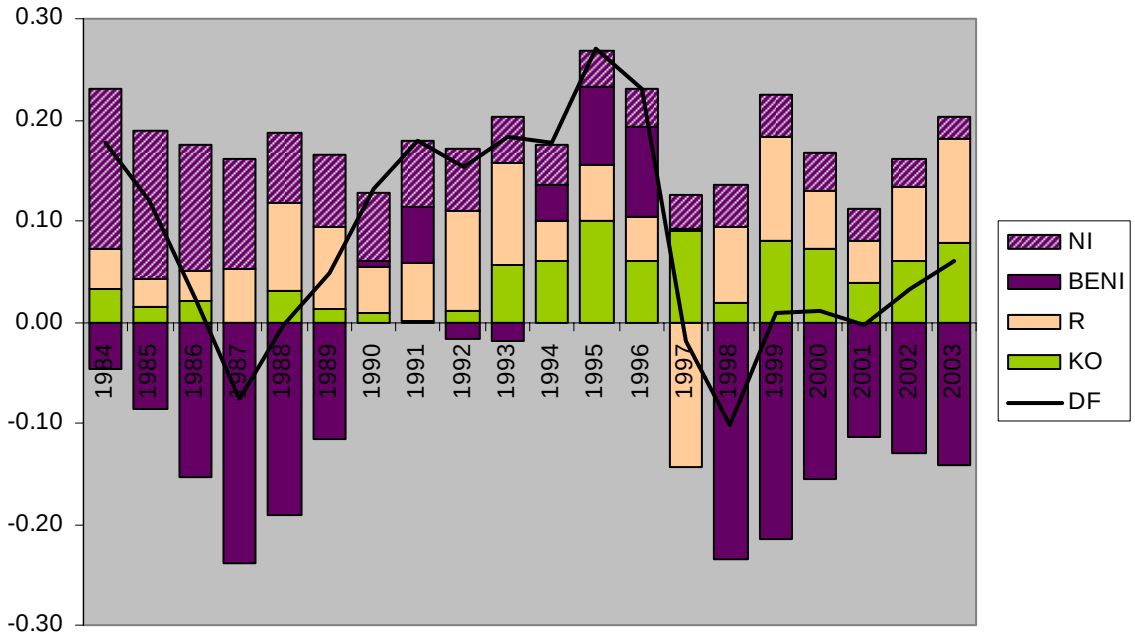
Source: WDI

Figure 8. Ratio of BOP components to external debt stock: Latin America



Source: author's calculations, IFS

Figure 9. Ratio of BOP components to external debt stock: Asia



Source: author's calculations, IFS

Table 3. Usage of Debt Flows in Sample Countries (1990 – 1996)

	Total	Asia	Latin America	East Europe
Basic balance deficit	37%	44%	30%	37%
Outflow of resident capital	34%	25%	46%	15%
Reserve accumulation	29%	30%	24%	48%

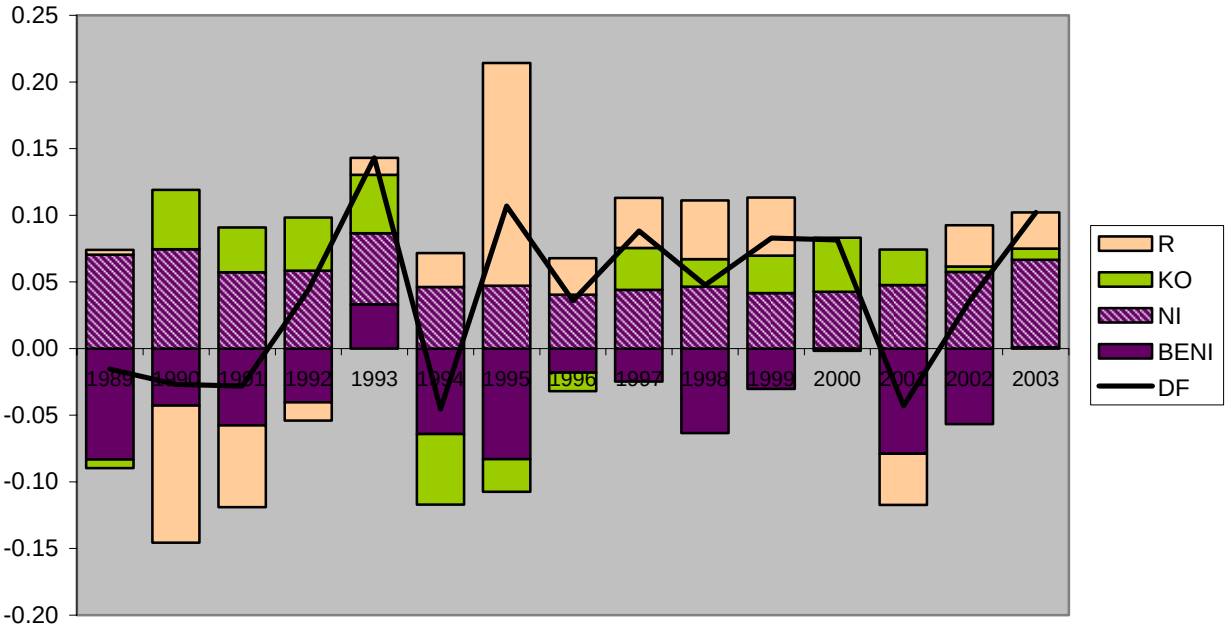
Source: author's calculations, IFS

Third, when the patterns of usage of debt flows are concerned, capital outflows dominates other aggregates in Latin America, whereas basic balance finance was more important than items in Asia. This phenomenon is obvious from the results of the Exercise 2 separately carried out for Latin America and Asia and illustrated in Table 3. The figures represent usage of debt flows between 1990 – 1996 in two regions. Such illustration is not interpretative for alternative periods, since debt flows give negative or very small positive balances. For the period of 1990 – 96, nearly half of the debt flows financed capital outflows in sample countries in Latin America. This ratio is a quarter for Asia, while basic balance deficit has a share of 44%.

Figure 10 demonstrates the contributions of the aggregates to increase in debt stock for East European countries in the sample. As the sample size is relatively small, the behavior of the aggregate values is partly dominated by Turkish figures, evident from negative values of DF in the crisis years of 1994 and 2001. After liberalization in 1990s, the surge in debt flows mostly financed reserve accumulation. NI gave deficit balances, albeit in low values. BENI has characteristically been in surplus

values except 1993. Capital outflows, although much lower than reserve accumulation has also been a major item financed through debt flows.

Figure 10. Ratio of BOP components to external debt stock: East Europe



Source: author's calculations, IFS

4.2. Country analysis[28]

In this section, I will make brief analyses of balance-of-payments components for each country in the sample. The analysis will be based on results of Exercise 1, i.e., figures representing contributions of our new components to external debt stocks of

[28] Readers who are not interested in country details may skip this section without loss of continuity. The next section summarizes the country experiences.

the countries. For the periods where debt flows are significantly positive, I also analyze their usage by carrying out Exercise 2[29]. I do Exercise 3 for Argentina, Mexico, Chile, Brazil, Korea, and Philippines[30]. A brief history of liberalization experiences for each country, together with references for historical explanations, is provided in the Appendix.

4.2.1. Argentina

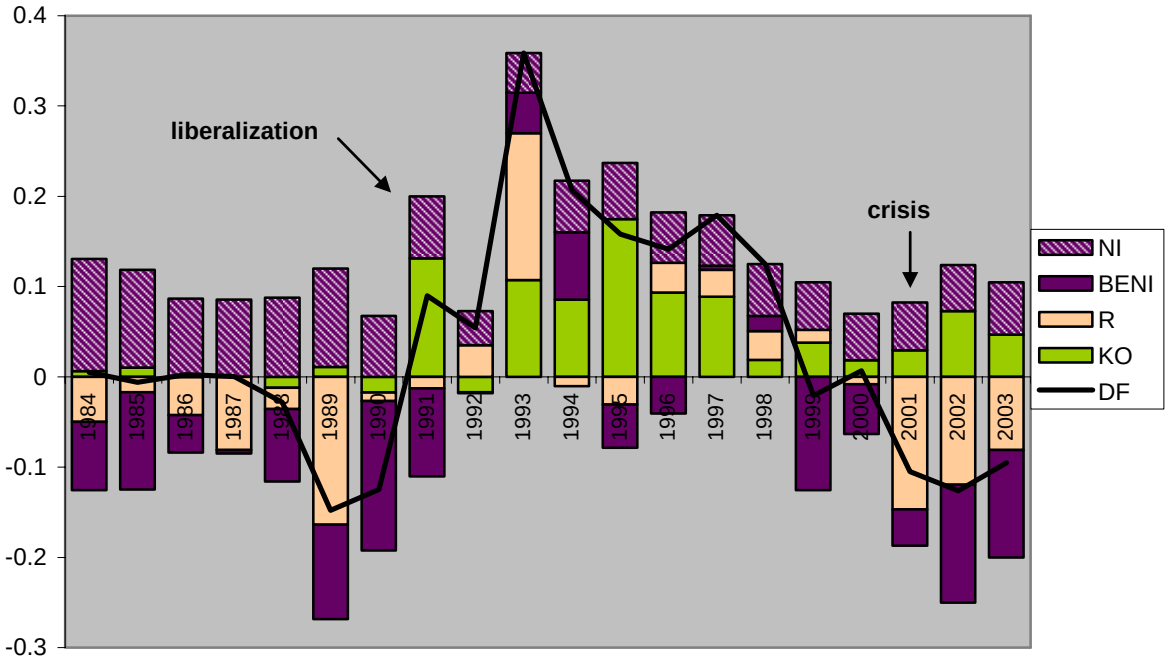
The decade of 1980s in Argentina was characterized by chronic high inflation and economic stagnation. An early capital account liberalization attempt in 1977, which was implemented without trade liberalization resulted in a significant capital flight. The liberalization decision was reversed in 1982 and Argentina repressed its financial system in 1980s. Argentina's capital account liberalization was a part of a large-scale reform package introduced by newly elected Menem administration in 1991 to achieve macroeconomic stability. Most important element of the package was the "Convertibility Plan," a currency board regime where the Argentine peso was tied to US dollar at one-to one parity. The package also included large scale privatizations to attract FDI. Capital account liberalization was one of the most

[29] I do not undertake Exercise 2 in some countries: In Venezuela, Malaysia, and Czech Republic, the periods that debt flows are consistently positive are too short for a meaningful decomposition. In Peru, capital outflows are negative. In some of the the countries which I do Exercise 2, pre-liberalization debt flows are negative rendering a comparison between pre- and post- liberalization periods impossible.

[30] For other countries either quarterly data are not available for pre-liberalization and post-liberalization periods and / or it is impossible to divide the period analyzed into different phases with meaningful differences in correlation values.

complete ones at that time, by easing all restrictions on capital inflows, outflows and allowing residents to hold foreign currency deposit accounts in domestic banks. Moreover, dollarization has been encouraged by the administration by making it legal to write contracts in foreign currencies.

Figure 11. Ratio of BOP components to external debt stock: Argentina



Source: author's calculations, IFS

Figure 11 demonstrates results of Exercise 1 for Argentina. A surge is observed in debt flows in 1991. The debt flows have consistently been higher after 1991, with a peak in 1993 at a level more than one third of the external debt stock. The contagion from Mexican tequila crisis has been very limited. Argentina had an external debt stock at the level of 85% of GDP prior to liberalization and had given negative

balance thought 1990s. FDI inflows have contributed to BENI, which has surpluses in some years, nevertheless, profit transfers from FDI investments further augmented NI deficit in late 1990s. Capital outflows have been encouraged by the "Convertibility Plan," as many contracts were denominated in foreign currencies, residents hedged themselves by acquiring foreign assets.

Meanwhile, inflation was virtually eliminated in mid-1990s. However, the relative macroeconomic stability was undermined by two major risk factors: (1) the overvaluation in peso which was tied to US dollar; (2) fiscal deficits of federal states which had constitutional right to issue their own debt instruments independent from the central government. The reduction in the capital flows to emerging markets after Asian crisis of 1997 has made these risks harder to manage. When Brazil devalued *real* in 1999, it has been a real loss of competitiveness for Argentina and the overvaluation in Argentine *peso* has become a serious impediment on economic activity. Given international investors' risk avoidance, debt flows have been reduced in 1999, while outflows of resident capital continued. In 2001, the capital flows were reversed, as international investors started to pull their money back from Argentine assets. A depletion of reserves made it impossible to defend the *peso* peg any more, and the currency board collapsed in December 2001.

The structural change in the pattern of debt flows and their usage after liberalization in Argentina is obvious. Before liberalization debt flows has been nil or negative, and they were associated with basic balance finance. Capital outflows were not

apparent. After liberalization, debt flows has mostly been associated with capital outflows. Correlation between capital outflows and debt flows, as demonstrated in Table 4, rises from 0.31 in 1980 – 1990 period to 0.76 in 1990 – 1998 period; while correlation between debt flows and basic balance deficit falls from 0.46 to 0.36. Reserve accumulations role in the usage of debt flows is limited although Argentina had a currency board regime. The decomposition of debt flows usage between 1990 and 1998, as seen in Table 5, shows that more than half of debt flows financed capital outflows. A third of debt flows were used to finance basic balance deficits and the remaining 20% was used to accumulate reserves.

Table 4. Correlation of DF with other components in Argentina

	1980 - 1990	1990 – 1998
BB	0.46	0.36
BB(-1)	0.40	0.15
BB(+1)	0.46	0.27
KO	0.31	0.76
R	0.37	0.26

Source: author's calculations, IFS

Table 5. Usage of Debt Flows in Argentina (1990 – 1998)

Basic balance deficit	31%
Outflow of resident capital	50%
Reserve accumulation	19%

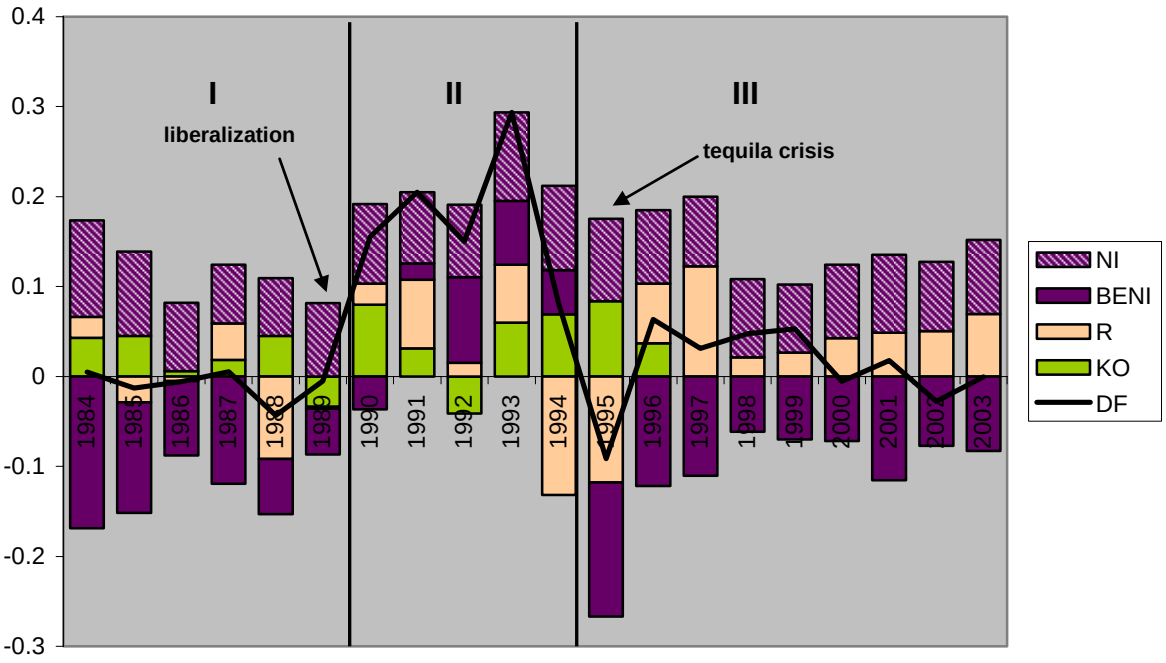
Source: author's calculations, IFS

4.2.2. Mexico

Mexico has begun capital account liberalization in 1989; and by 1992 international financial liberalization has been completed in Mexico. The behavior of components

of balance of payments can be analyzed in three phases. The first phase covers the pre-liberalization period. The second phase begins in 1990 and ends with the *Tequila* crisis of 1994. The year 1994 witnessed a reversal in debt flows. The third phase begins in 1995 and spans the years afterwards.

Figure 12. Ratio of BOP components to external debt stock: Mexico



Source: author's calculations, IFS

Figure 12 shows the results of Exercise 1 for Mexico. Debt flows fluctuate around zero in the pre-liberalization phase. The second phase is characterized by a high level of debt flows, reaching 30% of the external debt stock at its peak in 1993. The period also witnessed a reduction in inflation and restoration of fiscal balances. During this period, not only NI, but also BENI account has been in deficit. Major

source of finance need has been this basic balance deficit. Moreover, as the domestic investors used the opportunity provided by capital account liberalization to hedge themselves given the memory of high inflation in 1980s, the period has witnessed a consistent flight of resident capital. Reserve accumulation also had a role, albeit lower than the second phase, in the usage of debt flows. The financing need that stemmed from basic balance deficits and capital outflows culminated in the first emerging market crisis of the decade when debt flows reversed in 1994.

The third phase is characterized by a lower level of debt flows. Although NI deficit lasted in the second phase, BENI deficit was eliminated and BENI gave surpluses for most of the years. Annexation to NAFTA has provided an anchor for relative stability in the domestic economy. Capital outflows were reduced. In the third phase, reserve accumulation has been relatively higher than the second phase.

Table 6. Correlation of DF with other components in Mexico

	1980 - 1989	1990 – 1993	1995 - 2003
BB	0.68	-0.10	-0.14
BB(-1)	0.67	0.08	-0.05
BB(+1)	0.60	0.36	-0.14
KO	0.61	0.92	0.64
R	0.10	0.34	0.35

Source: author's calculations, IFS

Table 6 demonstrates correlations between debt flows and other components. The differences between pre-liberalization period and the two phases after liberalization are striking. Before liberalization, the debt flows were mostly associated with basic

balance deficits with a correlation of 0.68. After liberalization, although basic balance continued to give large deficits, the correlation between debt flows and basic balance deficits has virtually been eliminated. Rather, debt flows has been associated with capital outflows, especially in the second phase. Their correlation in the second phase is 0.92. Correlation between debt flows and reserve accumulation also rose, albeit to a lower extent, after liberalization.

Table 7. Usage of Debt Flows in Mexico (1990 – 1994)

	1990 - 1993	1990 - 1994
Basic balance deficit	63%	75%
Outflow of resident capital	15%	23%
Reserve accumulation	22%	2%

Source: author's calculations, IFS

As the second phase is the only period when debt flows have given a significant positive balance, it is meaningful to engage in the analysis of usage of these flows in this period. The analysis presented in Table 7 shows that basic balance deficits have been the foremost important item to be financed in this period. Capital outflows and reserve accumulation are head to head, subject to the inclusion of 1994 during which reserves were depleted.

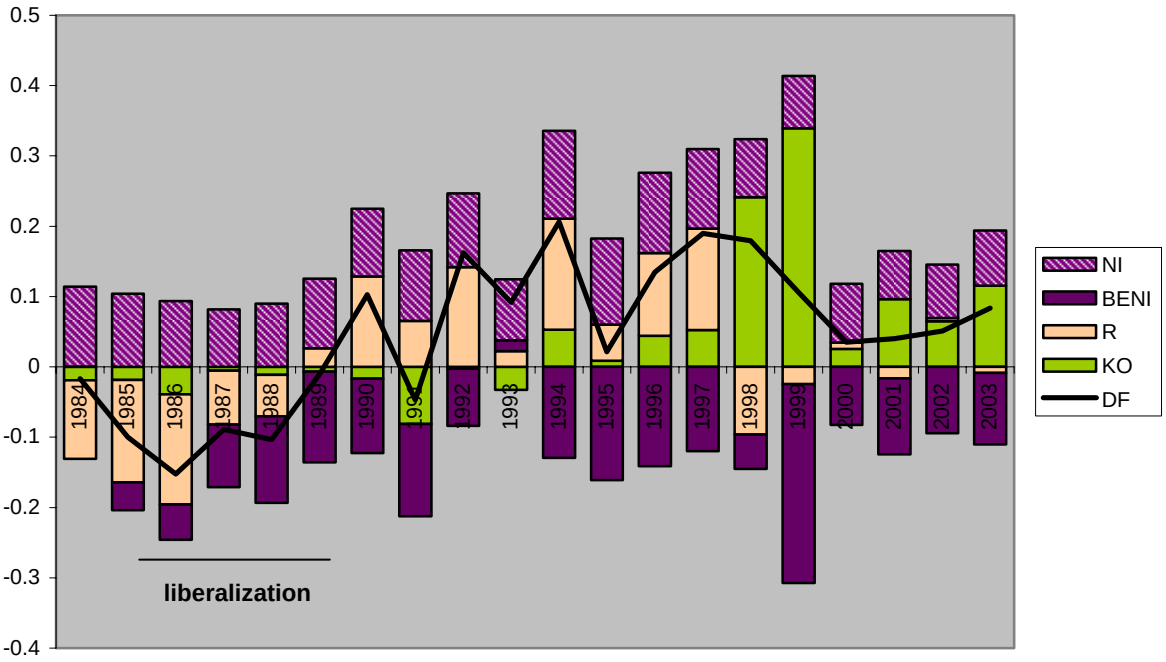
4.2.3. Chile

Chile had one of the most stable macroeconomic climates in Latin America in 1990s. This climate is partially a result of reduction in public debt after the debt

crisis of 1980s with prudent fiscal policies. Moreover, Chile's approach to capital account liberalization has been differentiated by most Latin American countries with the controls on capital inflows, *encaje*.

The capital account liberalization in Chile started in 1985 and gradually most restrictions were eliminated in the late 1980s. In 1991, Chilean authorities implemented unremunerated reserve requirements, *encaje*, on capital inflows.

Figure 13. Ratio of BOP components to external debt stock: Chile



Source: author's calculations, IFS

Encaje was an implicit tax on inflows as a certain portion (30% in the beginning) of capital inflows were obliged to be deposited at a non-interest bearing account in the Central Bank for a year. The role of *encaje* in limiting inflows is very much debated in the literature. Although its role in limiting inflows is not obvious, there is almost a

consensus in literature about its success in lengthening the maturity of debt flows. Figure 13 reveals results of Exercise 1 for Chile. The debt flows has consistently been positive in Chile in 1990s and contagion from all emerging market crisis, including neighbor Argentina, has been very limited. With commitment to attract FDI and large-scale privatizations and deregulations to this end, Chile has attracted large amounts of FDI. The NI deficit and BENI surpluses has been head-to-head, rendering almost zero basic balance in 1990s. Outflows of resident capital have been limited until 1998. Meanwhile, as a sign of a stable macroeconomic climate, Bank of Chile accumulated a large amount of reserves in 1990s.

Chilean authorities have virtually eliminated *encaje* in 1998. Partially because of this policy-change, debt flows have not been reduced sharply as it had been in many emerging markets at the end of 1990s. The large capital flight figures at the end of 1990s are due to the ease of restrictions on pension funds in acquiring foreign assets in this period. As the pension system is privatized in Chile, these funds administer a large portion of domestic savings and ease of restrictions has resulted in a one-shot surge in outflows. Nevertheless, stable macroeconomic climate seems to have avoided large scale outflows of resident capital in Chile.

Correlations presented in Table 8 reveal that most of the debt flows have been associated with reserve accumulation in 1990s. Correlation between debt flows and capital outflows rises after 1998. There is almost no meaningful association between debt flows and basic balance. Indeed, as seen in Table 9, more than 90% of debt

flows were used to accumulate reserves between 1991 – 1997. The remaining portion had been used to finance outflows and portion used for basic balance finance is nil.

Table 8. Correlation of DF with other components in Chile

	1991 - 1997	2000 – 2003	1991 - 2003
BB	0.03	-0.23	-0.08
BB(-1)	0.13	-0.18	0.00
BB(+1)	-0.04	0.22	0.15
KO	0.44	0.54	0.39
R	0.63	0.55	0.36

Source: author's calculations, IFS

Table 9. Usage of Debt Flows in Chile (1991 – 1997)

Basic balance deficit	1%
Outflow of resident capital	8%
Reserve accumulation	92%

Source: author's calculations, IFS

4.2.4. Brazil

Brazil's position regarding international financial liberalization has been more hesitant compared to its Latin American neighbors. Rather than implementing full capital account liberalization *a la* Argentina and Mexico or systematic controls on inflows *a la* Chile; Brazil opted for a modest opening of capital account with sporadic applications of capital controls. The liberalization degree varied according to domestic economic and political situation and international financial climate.

Nevertheless, it has been limited at all. For instance, it is still forbidden for residents to hold foreign currency deposits in domestic banks.

Brazil began 1980s with a debt crisis. Debt flows have been interrupted during this decade. Macroeconomic instability with three-digit inflation rates and public deficits over 10% as a ratio to GDP has been the major characteristic of 1980s. Brazil took first capital account liberalization steps in 1991 in this environment of macroeconomic stability. Debt flows immediately rose as a response to liberalization. *Real plan*, a macroeconomic policy package including an exchange rate peg has been successful in substantially reducing inflation. Restrictions applied in 1993 did result in a fall of debt flows as international investor's confidence in *Real plan* caused them to lend more. The controls were eased in 1995 to avoid contagion from *Tequila* crisis. Indeed, contagion effect has been very limited. In 1996, controls were applied again. Asian and Russian crises in 1997 and 1998 have affected capital flows to Brazil, lowering debt flows component significantly in these years. A subsequent ease of controls to attract more inflows was not successful. As reserves began to deplete and it has become impossible to sustain external balances, Brazil devalued real in 1999. After 1999, although non-residents are allowed to invest under the same rules with residents, debt flows have been very low.

Results of Exercise 1 for Brazil can be found in Figure 14. Three phases can be identified in the behavioral structure of balance of payments components during the

capital account liberalization experience of Brazil. The first phase covers the pre-liberalization period until 1991. The second phase spans the period of 1991 – 1999. The third phase spans the period after the devaluation of 1999.

In all phases, reflecting the debt burden of country since 1980s, NI has been in negative balance. In the first phase, debt flows are negative. The second phase is characterized by a positive balance of debt flows each year, reaching its peak in 1995 around 20% of the external debt stock. It should be noted that this figure is lower than some Latin American countries such as Mexico and Argentina. The BENI balance has been positive for the first three years of the first phase; however, surplus became very small or even negative after 1995. Therefore it offset the NI deficit only in the first years. Capital flight consistently rose after 1991, stopped in 1995 when the confidence was restored through *Real plan*, and then continued. Reserve accumulation has been high until 1996, but much of the accumulated reserves have been lost in order to defend the peg of real at the end of the first phase. According to the figures in Table 10, 44% of debt flows in this period has been used to finance reserve accumulation, 33% to finance capital outflows and the remaining 22% to finance basic balance deficits. If the analysis period is limited to 1991 – 96, in order to omit the effect of reserve depletion after 1997, the share used to finance reserves rises to 56%. In the third phase, as debt flows stopped, BENI adjusted to cover the deficit in NI. Capital flight continued, while reserve accumulation has been very limited.

Table 10. Usage of Debt Flows in Brazil (1992 - 1998)

	1992 – 1998	1992 - 1996
Basic balance deficit	23%	24%
Outflow of resident capital	44%	56%
Reserve accumulation	33%	20%

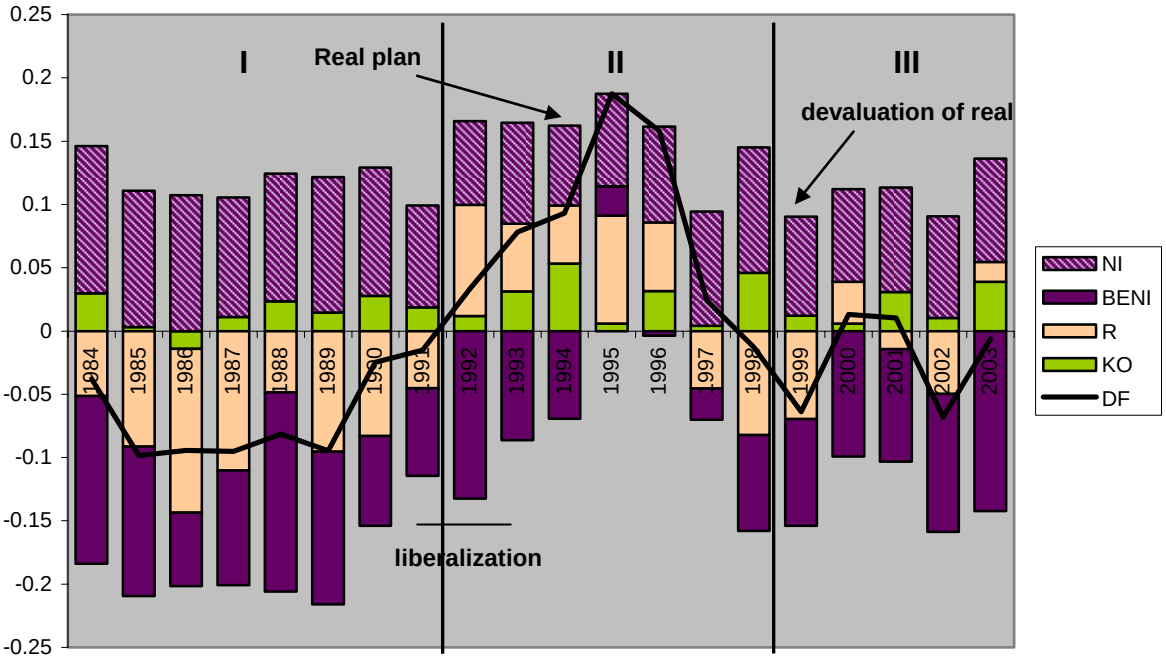
Source: author's calculations, IFS

Table 11. Correlation of DF with other components in Brazil

	1975 - 1991	1992 - 1998	1999 – 2003
BB	0.52	0.08	0.29
BB(-1)	0.55	0.32	-0.06
BB(+1)	0.33	0.00	-0.11
KO	0.23	0.29	0.18
R	0.24	0.91	0.88

Source: author's calculations, IFS

Figure 14. Ratio of BOP components to external debt stock: Brazil



Source: author's calculations, IFS

The break between the relationship of basic balance finance and debt flows after liberalization is evident from correlations presented in Table 11 The correlation between two components in the pre-liberalization period was 0.55. After liberalization, in the second phase it fell to 0.08. Meanwhile, correlation between reserve accumulation and debt flows rose from 0.24 to 0.91. Association between debt flows and capital outflows has been relatively stable. The analysis of the second phase, when debt flows were abundant, reveals that debt flows became a mean to finance reserve accumulation and debt flows rather than basic balance deficits after liberalization.

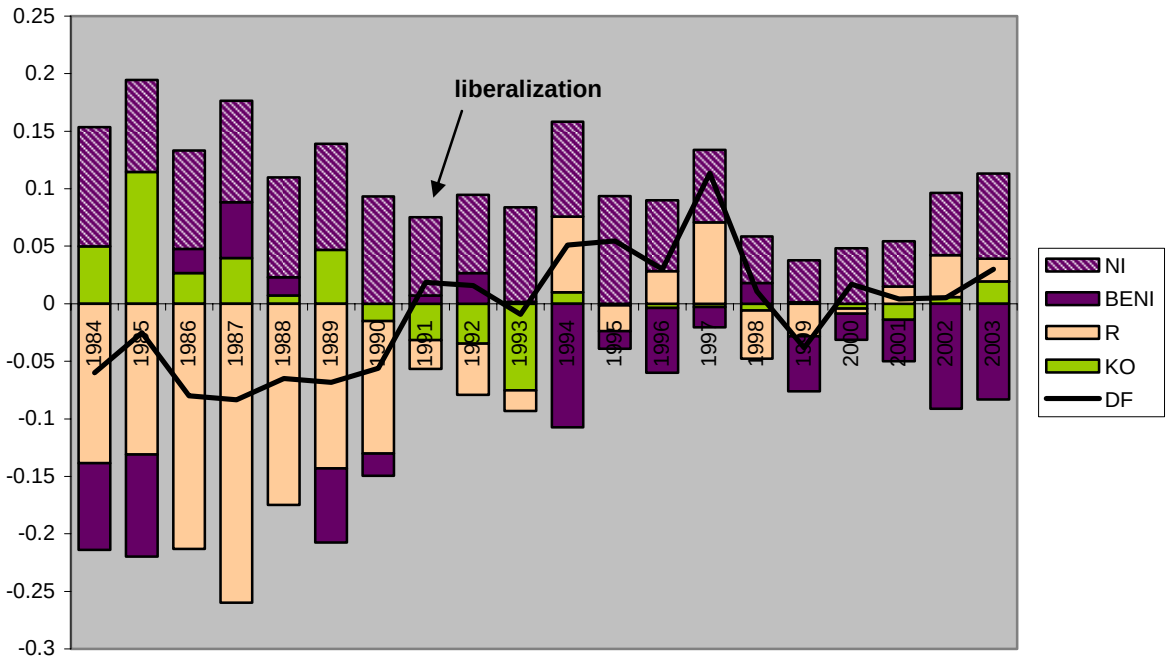
4.2.5. Peru

Peru is one of the members of the small set of emerging market countries which have successful liberalization experiences. It witnesses recurring balance of payments crisis in 1970s and early 1980s; high chronic inflation lasted until early 1990s. In 1990, Peru implemented an economic reform package which includes capital account liberalization. Other elements were restoring of fiscal balances, strong bank supervision and floating exchange rates. In 1994, differential treatment of residents and non-residents were eliminated.

Figure 15 demonstrates results of Exercise 1 for Peru. Debt flows began to give positive balance after 1990, and especially between 1994 – 1999, they have been

consistently positive. However, the magnitude of debt flows has been smaller as a ratio of external debt stock compared to other emerging market countries. Reflecting the debt burden of Peru, NI had always been in large deficit. BENI had been in deficit before 1994, and then it gave surpluses, albeit not large enough to offset NI deficits. Basic balance deficit had been the major financing need prior to 1998. It had been larger than debt flows and been offset by negative balance in capital outflows, i.e., residents switched to domestic assets to finance basic balance deficits. Capital flight has been small also after 1998. Reserve accumulation has also been limited, even negative before 1994.

Figure 15. Ratio of BOP components to external debt stock: Peru



Source: author's calculations, IFS

Debt flows to Peru mostly financed its income account deficits and to a smaller extent reserve accumulation. As capital flight has been low, even negative, the financing need has been small. The relatively low level of debt flows combined with prudent policies avoided large reversals and financial crisis.

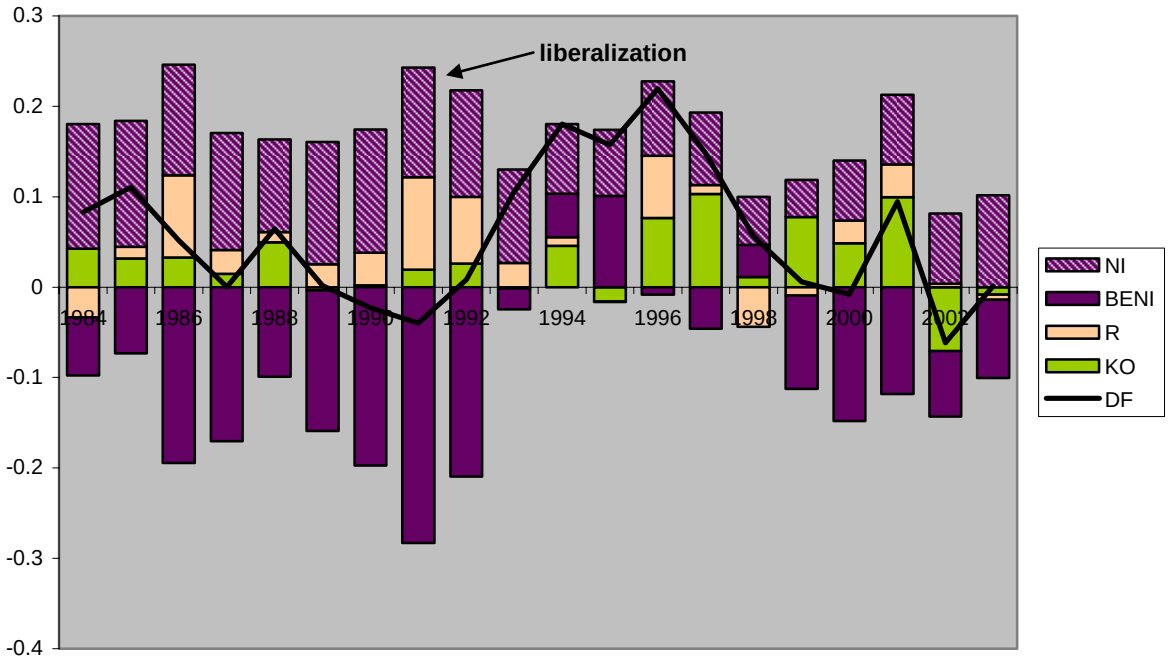
4.2.6. Columbia

Columbia's *Apertura Program* implemented in 1991 included international financial liberalization along with other standard measures of such economic reform programs. However, Columbia also used Chilean style unremunerated reserve requirements between 1992 – 2000. The rate of the URRs was raised after 1994 and substantially lowered in 1998. Nevertheless, the effects of these controls are mixed in limiting debt flows as it is the case in Chile.

Figure 16 displays results of Exercise 1 for Columbia. NI is consistently in deficit after 1990. BENI has also been in deficit for many years before 1999. Consequently, more than a half of debt flows are used for basic balance deficit finance between 1993 - 1999. This can be observed from Table 12, which reveals financing patterns in Columbia. The remaining part mostly financed capital flight (41%) and to a small extent reserve accumulation. After 1999, debt flows are reduced and they have small negative balances in some years. The fall in debt flows was offset by BENI adjustment to give positive balances. Columbia did not manage to eliminate inflation and fiscal deficits in 1990s. The NI deficit continued to constitute a financing need

after 1999; however BENI adjustment and small scale of debt flows reversal avoided a large scale financial crisis.

Figure 16. Ratio of BOP components to external debt stock: Columbia



Source: author's calculations, IFS

Table 12. Usage of Debt Flows in Columbia (1993 - 1999)

Basic balance deficit	55%
Outflow of resident capital	41%
Reserve accumulation	5%

Source: author's calculations, IFS

4.2.7. Venezuela

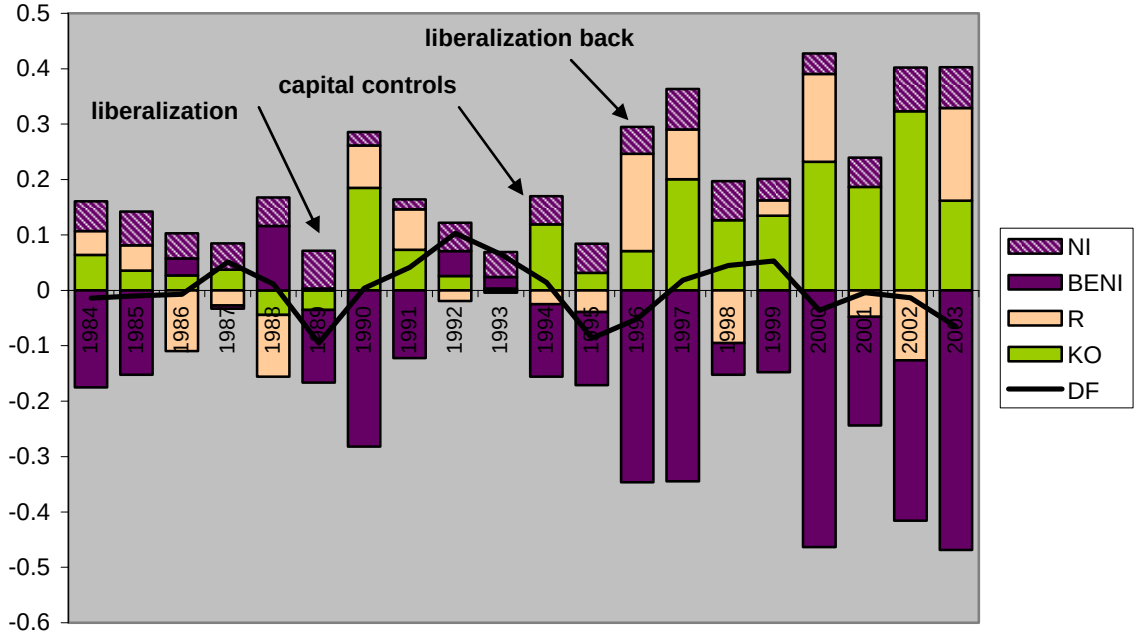
Venezuela's capital account liberalization history is mixed. 1990s witnessed large-scale liberalization attempts and implementation of sharp restrictions. As an oil

exporter country, Venezuela consistently gives positive current account balances. These two properties make Venezuela a special case among the emerging market countries in the sample.

Figure 17 demonstrates results of Exercise 1 for Venezuela. The first phase of liberalization is between 1989 and 1994. A small surge in debt flows happened in this period. Extensive controls on both inflows and outflows were implemented between 1994 – 1996, when parallel market premium in exchange rates reached 40 – 100%. Debt flows reversed in this period; however, it is not possible to observe the same reversal in capital outflows. Rather they increased and stayed high when capital account has been liberalized with IMF supported stand-by program in 1996. Surge in debt flows was smaller in this liberalization period and ended in 2000 in accordance with global reversal of capital flows to emerging markets. Capital outflows stayed in deficit. Capital account is again repressed in 2003.

In Venezuelan experience, large BENI surpluses stemming from oil revenues offset NI deficits and resulted in large positive basic balances. Debt flows have been very small compared to basic balance surpluses. Nevertheless, in Venezuela, major financing need comes from capital flight, which is consistently large even in repression periods. The lack of confidence in domestic institutions and frequent regime changes may be root causes of this behavior. Venezuelan experience shows that given a certain level of financial development and initial liberalization, it is hard to limit outflows by repressions in certain periods.

Figure 17. Ratio of BOP components to external debt stock: Venezuella



Source: author's calculations, IFS

4.2.8. Korea

Korea has been one of the most rapidly growing countries in the world in 1980s. This growth was fulfilled with a relatively closed financial system. Directed lending has been used as an active instrument of industrial policy. Foreign direct investment was also restricted. The industrial scene was dominated by *chaebol*s, large conglomerate firms supported and protected by the state.

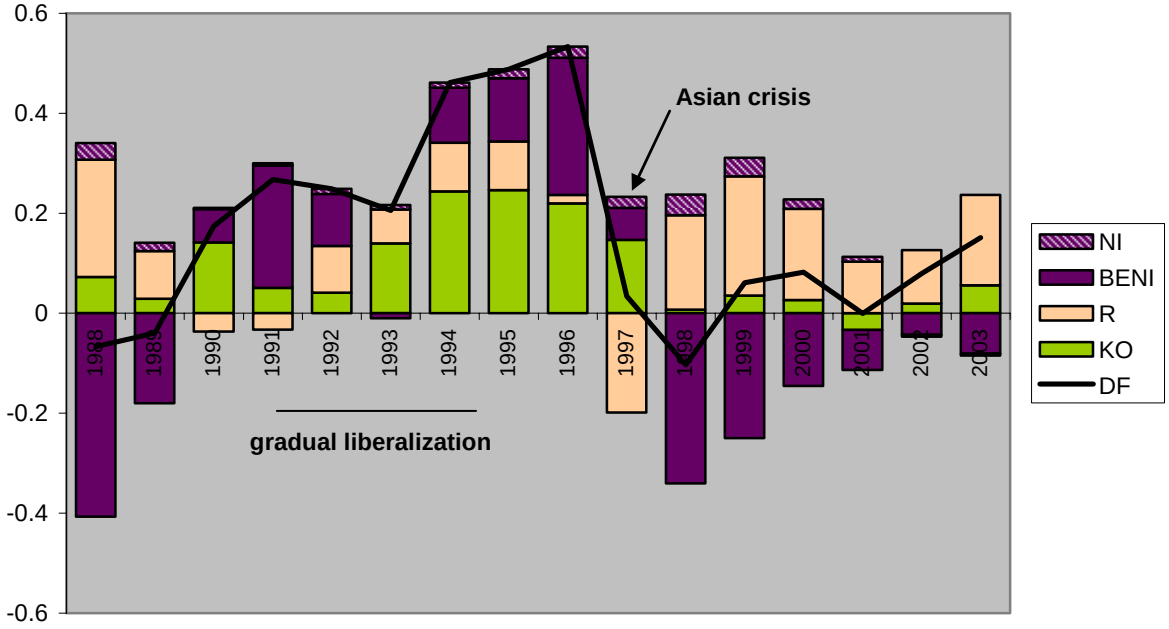
Figure 18 demonstrates results of Exercise 1 for Korea. First minor capital account liberalization attempts have been undertaken in late 1980s. Portfolio and other

investment inflows were liberalized rapidly between 1991 – 93, while controls on outflows remained. Korea also has been reluctant to liberalize direct investments; foreign ownership in Korean firms was still limited to 12% in 1995. Outflow liberalization has been gradual and international financial liberalization was completed with the OECD membership of Korea in 1996.

Debt flows poured into Korea after 1990 with rapid liberalization of inflows. Unlike Latin American markets, low debt burden of Korea prior to liberalization has resulted in very low NI deficits during this period. However, as a result of its industrial structure, large outward direct investments by *chaebols* and currency peg to US dollar, Korea gave consistent current account deficits. As foreign direct investments were restricted, current account deficits translated into large and negative BENI numbers. Therefore, low NI values did not avoid basic balance deficits in Korea.

Although restrictions on outflows were eased in a gradual fashion, capital flight has been very rapid especially after 1993. The period until 1997 was characterized by a relatively low level of reserve accumulation. The pour of debt flows ended in 1997 with Asian crisis. After the crisis, debt flows reduced sharply. BENI has adjusted to this reduction, as devaluation induced current account surpluses. Capital outflows also fell, as more domestic capital was needed when external debt flows are not available. Meanwhile, reserve accumulation gained dominance after 1997, probably as a result of the lessons taken from the crisis.

Figure 18. Ratio of BOP components to external debt stock: Korea



Source: author's calculations, IFS

Korea's capital account liberalization has the effect on association of debt flows with other components of balance of payments in two stages. In the first stage, from 1990 to 1997, debt flows association with basic balance deficits prior to liberalization persisted, but debt flows also been associated with capital outflows and reserve accumulation. After Asian crisis, in the period of 1999 – 2003, as basic balance deficits were eliminated, the association between basic balance and debt flows reduced significantly. Correlation between debt flows and reserve accumulation increased, and association of debt flows with capital outflows also continued. These relationship patterns can be observed from the correlation figures in Table 13.

Table 13. Correlation of DF with other components in Korea

	1977 - 1989	1990 – 1996	1999 – 2003
BB	0.81	0.71	0.25
BB(-1)	0.72	0.72	0.22
BB(+1)	0.75	0.77	-0.04
KO	-0.04	0.86	0.62
R	0.04	0.44	0.66

Source: author's calculations, IFS

Table 14. Usage of Debt Flows in Korea (1990 – 1996)

Basic balance deficit	42%
Outflow of resident capital	46%
Reserve accumulation	13%

Source: author's calculations, IFS

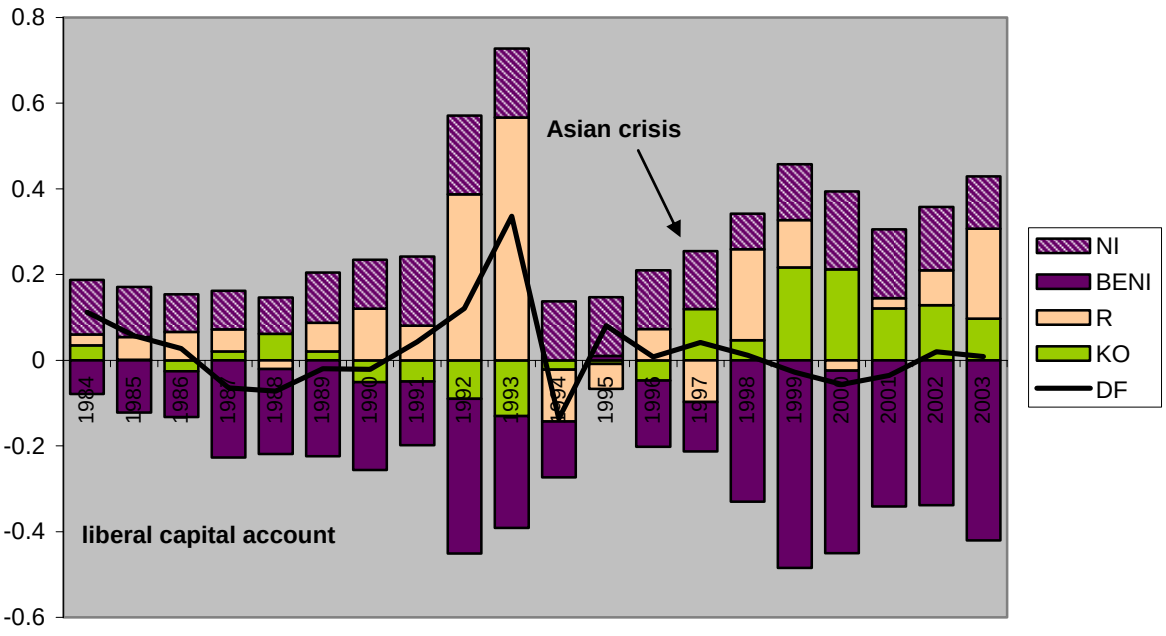
Korea's usage of debt flows, when they were in very high values in the period of 1990 – 97 are shown in Table 14. Consistent with the correlation figures, Korea has used almost half of the debt flows to finance outflow of resident capital. 42% of debt flows financed basic balance deficits. The portion of debt flows used to finance reserve accumulation is relatively low at 13%.

4.2.9. Malaysia

Malaysia has been an early liberalizer of the capital account. International financial liberalization had mostly been achieved in late 1970s and further restrictions were eliminated in mid-1980s. Nevertheless, early liberalization did not bring an early surge in debt flows.

Results of Exercise 1 can be found in Figure 19 for Malaysia. The surge in debt flow to Malaysia happened parallel to surge in other emerging market countries, after 1990. Authorities responded this surge, when debt flows peaked at more than 30% of the external debt stock in 1993, with imposition of temporary controls on inflows in 1994. They were abolished in 1995. Indeed effect of capital controls had been temporary, only a year-long fall in debt flows in 1994. However, recovery has not been significant and debt flows have been very small until 1997. After Asian crisis, they become negative. Malaysia responded the crisis with imposition of controls on capital outflows which lasted from 1998 to 1999.

Figure 19. Ratio of BOP components to external debt stock: Malaysia



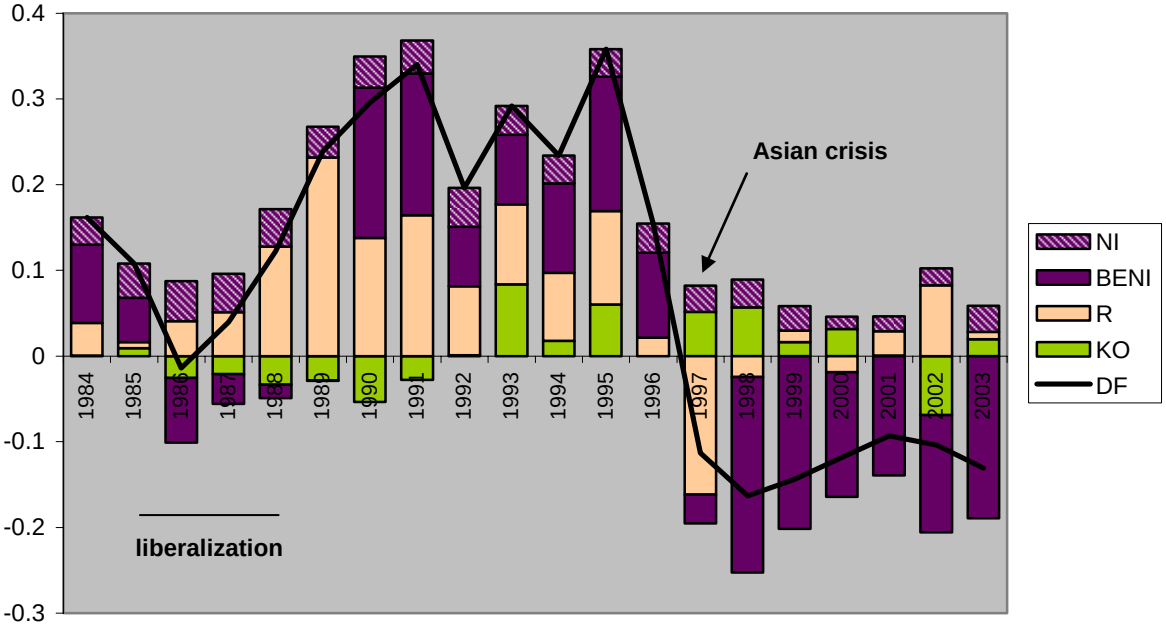
Source: author's calculations, IFS

The total of debt flows in the period of 1990 - 96 is very small making an analysis of their usage meaningless. Yet, some characteristic regarding the patterns of the components of balance of payments are worth examining. The NI component gave consistent negative balances, which were generally offset by positive value of BENI. In a different pattern form many of the other emerging market countries, 1990s did not witness capital flight in Malaysia. The value of outflows of resident capital was negative in many years. On the other hand, parallel to other emerging markets, even more than them, Malaysia used debt flows and basic balance surpluses to accumulate reserves. However; after the Asian crisis, capital flight gained importance. More basic balance surpluses were needed to cover this flight. As NI deficits continued, surplus in BENI has increased after 1997.

4.2.10. Thailand

Thailand is one of the second-generation Asian tigers and at the end of 1980s it had growth rates around 10%. Financial liberalization first targeted inflows. Restrictions on inflows of portfolio investment were eliminated between 1985 – 87.

Figure 20. Ratio of BOP components to external debt stock: Thailand



Source: author's calculations, IFS

Figure 20 shows results of Exercise 1 for Thailand. Ease of restrictions on capital outflows began in 1991. The establishment of Bangkok International Banking Facility, which originally aimed strengthening of domestic financial sector by fostering its linkages with other Southeast Asian financial sectors, induced more external borrowing and eased outflow of resident capital. Authorities responded to huge rises in debt flows by imposing reserve requirements on inflows in 1995. These controls, however, have been ineffective. The debt flows fell sharply in 1997 when Asian crisis began in Thailand. Authorities responded the crisis with Malaysian style controls on outflows. Lending to non-residents in local currency was restricted. Yet, controls are lifted a year later.

Reflecting the low level of debt burden of Thailand, NI deficit was small compared to debt flows throughout the period. However, like Korean case, large current account deficits, given low values of foreign direct investment culminated in BENI deficits. Consequently, large values of basic balance deficits constituted a major financing need in Thailand. Meanwhile, Thai authorities accumulated significant amount of reserves after liberalization. This reserve accumulation has been consistent until the attacks on reserves in the Asian crisis. Capital outflows were negative before 1992, when they were restricted. With the establishment of Bangkok International Banking Facility, capital flight has become another item that required financing with debt flows.

Table 15 presents share of each balance of payments component in finance through debt flows. Values are given for three periods. The first column covers all the debt flows pour period. The second column covers the period after the opening of Bangkok International Banking Facility when the capital flight gained importance. The last column cover the period 1990 – 96 and given to provide comparison opportunity with the analyses of the other Asian countries. Large basic balance deficits constitute the most important financing item after liberalization. More than a half of debt flows were used to finance basic balance deficits. The second important item has been reserve accumulation. 38% of debt flows were used to accumulate reserves between 1987 – 1996. The importance of capital outflows increase after 1993, as explained above.

Table 15. Usage of Debt Flows in Thailand (1987 – 1996)

	1990 - 1996	1993 – 1996	1987 – 1996
Basic balance deficit	60%	59%	57%
Outflow of resident capital	7%	13%	5%
Reserve accumulation	32%	27%	38%

Source: author's calculations, IFS

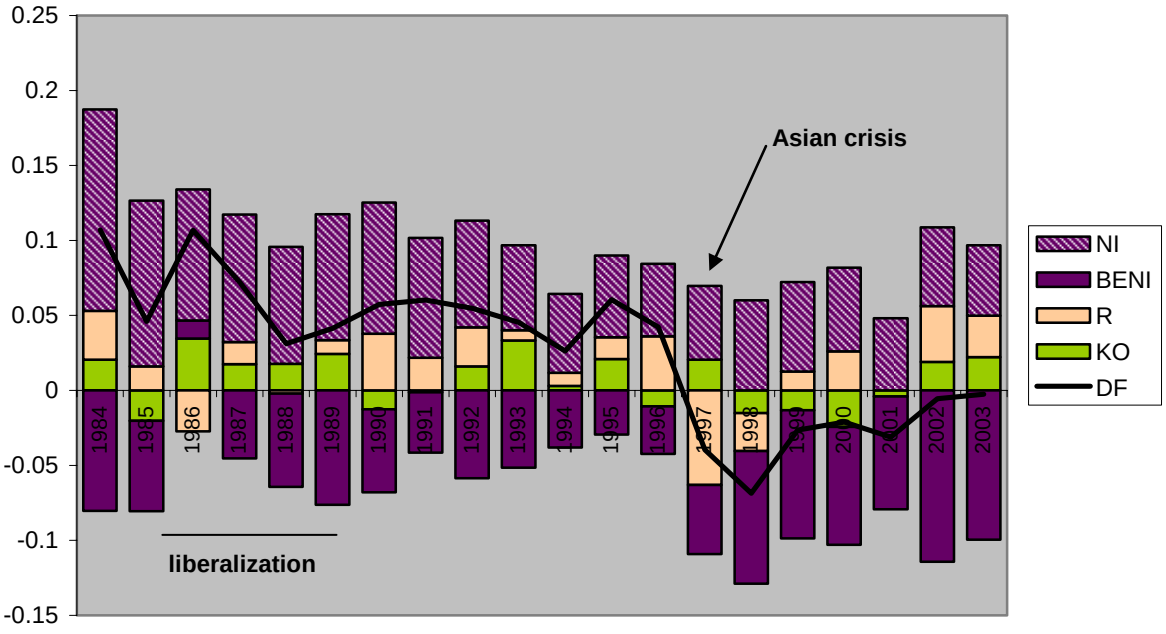
After 1997, debt flows give consistently negative balances. With devaluation, BENI values adjusted to give surpluses. Capital flight continued after the crisis. Reserve accumulation has been much lower than the pre-crisis period. In the post-crisis period, large basic balance surpluses were used to finance capital flight and debt repayments (negative values in debt flows).

4.2.11. Indonesia

Indonesia has been one of the second-generation Asian tigers. The growth rates have been high in 1980s. Financial liberalization attempts began in late 1980s and completed to a large extent by 1989.

Figure 21 demonstrates results of Exercise 1 for Indonesia. Debt flows have been consistently positive until the Asian crisis of 1997. However, level of debt flows as a proportion of external debt stock is below 10%, which is lower than the value of many emerging markets. NI balance was negative and positive BENI values was not enough to offset them resulting in a basic balance deficit throughout the period.

Figure 21. Ratio of BOP components to external debt stock: Indonesia



Source: author's calculations, IFS

Nearly half of the debt flows attracted in the period of 1990 - 96, as demonstrated in Table 16, were used to finance this deficit. Capital flight and reserve accumulation also had significant portions in debt financing, 19% for the former and 32% for the latter. Sharp fall in debt flows in 1997 and negative values afterwards, resulted in a rise in BENI surpluses. Consequently, basic balance adjusted to positive values. After 1997, most of the capital outflows were reversed, while reserve accumulation continued.

Table 16. Usage of Debt Flows in Indonesia (1990 – 1996)

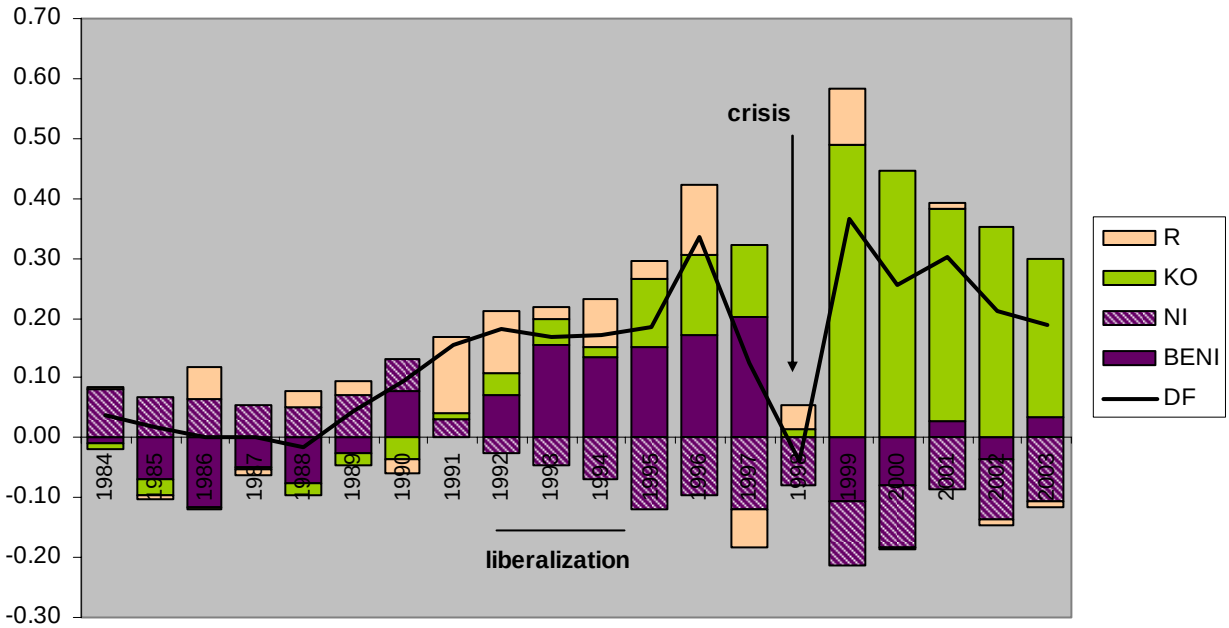
Basic balance deficit	48%
Outflow of resident capital	19%
Reserve accumulation	32%

Source: author's calculations, IFS

4.2.12. Philippines

Philippines began its capital account liberalization attempts in early 1980s, but significant liberalization was accomplished between 1992 – 95.

Figure 22. Ratio of BOP components to external debt stock: Phillipines



Source: author's calculations, IFS

Figure 22 discloses results of Exercise 1 for Philippines. Surge in debt flows accompanied this liberalization. As a different case from other emerging market countries, basic balance deficits of Philippines stemmed from negative BENI values, not NI deficits. Capital flight was small at the early years of liberalization; however it has increased after 1995. Reserve accumulation has also been a financing need throughout the liberalization period. The effect of Asian crisis on Philippines has been short-lived. Debt flows recovered after a temporary reduction in 1998. Yet,

after 1998, capital flight surged and resident capital outflows overweighed debt flows. Philippines, therefore, gave basic balance surplus to finance this capital flight.

Table 17. Correlation of DF with other components in Philippines

	1978 - 1990	1991 – 1997
BB	0.59	0.15
BB(-1)	0.58	0.10
BB(+1)	0.52	0.23
KO	0.53	0.64
R	0.33	0.66

Source: author's calculations, IFS

Table 17 illustrates usage of debt flows between 1989 and 1997. The figures in the second column are presented to provide comparison opportunity with other Asian emerging market analysis. Basic balance deficit and capital outflows have nearly the same weight around 40%. The remaining portion of debt flows financed reserve accumulation.

Table 18. Usage of Debt Flows in Philippines (1989 – 1996)

	1989 - 1997	1990 – 1996
Basic balance deficit	39%	33%
Outflow of resident capital	37%	29%
Reserve accumulation	22%	33%

Source: author's calculations, IFS

Table 18 shows correlation values between debt flows and other components before and after capital account liberalization and surge in debt flows. The correlation between debt flows and basic balance falls from 0.59 to 0.15. On the other hand,

correlation values between debt flows and capital outflows / reserve accumulation increases. These values suggest a break-up in the relationship between basic balance finance and debt flows after liberalization.

4.2.13. Hungary

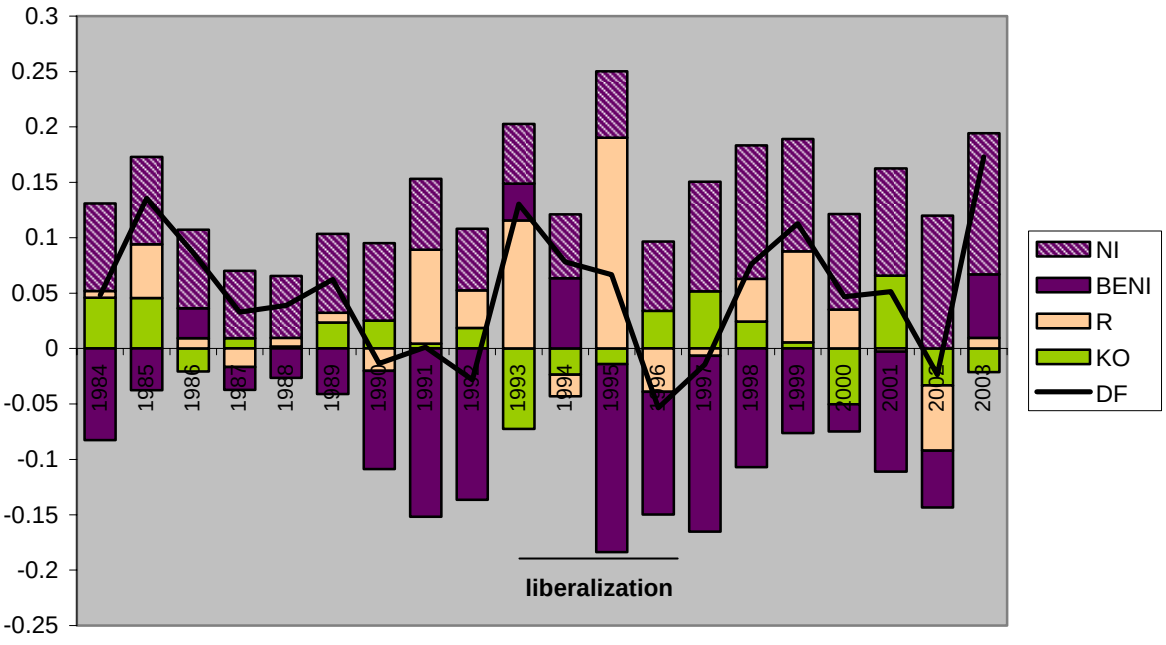
Hungary has rapidly liberalized its current account and foreign direct investments after the fall of iron curtain in 1989. Nevertheless, liberalization of portfolio and other capital flows has been more gradual. First attempts date back to early 1990s, but the significant liberalization came with OECD membership in 1996. Even after OECD membership, some transitional clauses applied for some OECD codes on capital flows and liberalization completed in 2001.

Results of Exercise 1 for Hungary are shown on Figure 23. Opening up of Hungarian market has resulted in a surge in debt flows, in accordance with other transition countries, in early 1990s. This surge ended in 1996. The other heavy debt flows period began in 1998 and lasted until 2002. In this period, debt flows were attracted not only by larger liberalization measures, but also relative confidence provided by the EU accession process, which began in 1996.

The income account of Hungary has consistently gave negative balance, as it had a large debt burden and it is traditionally an attractive point for foreign direct investment. After 1997, with EU accession process, attraction of more FDI resulted in surpluses in BENI, partially covering deficit in NI. In both periods of surge in

debt flows, Hungary accumulated large amounts of reserves. Capital flight has been positive between 1996 – 1999. As demonstrated in Table 19, in the debt flows surge after 1996, 53% of debt flows financed reserve accumulation, 15% financed capital outflows and 32% financed basic balance deficits. If the whole experience after 1993 is considered, the portion used for reserve finance rises to 82%. After 2001, current account deficit widened making BENI negative, although FDI inflows continued. With NI also in deficit, basic balance gave large negative values crowding out the finance provided to other components by debt flows.

Figure 23. Ratio of BOP components to external debt stock: Hungary



Source: author's calculations, IFS

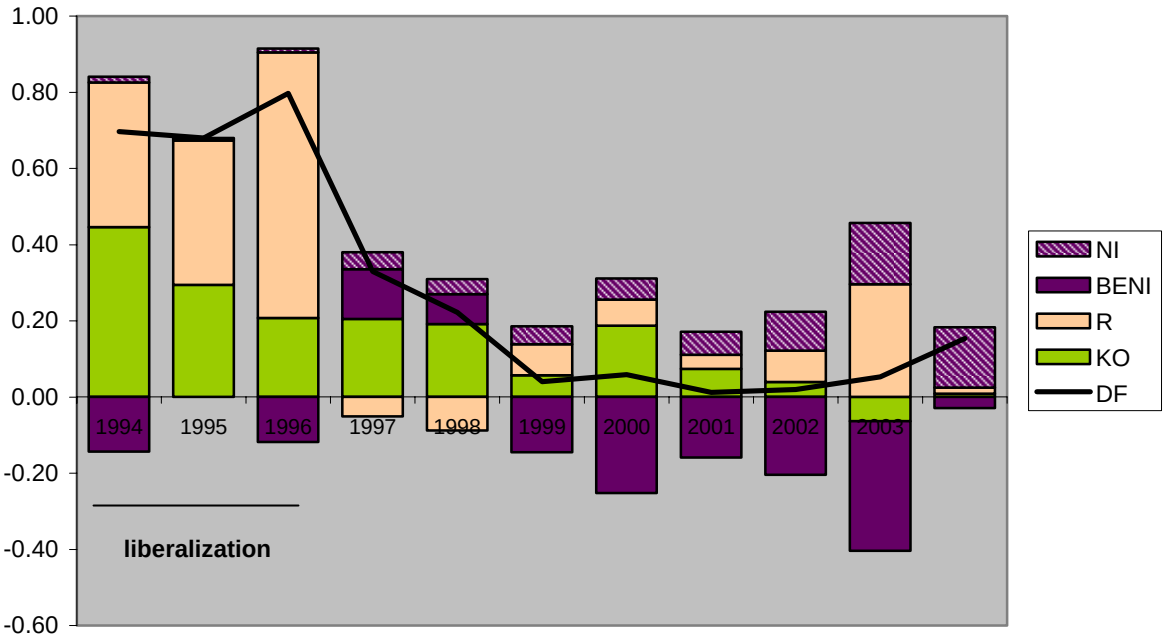
Table 19. Usage of Debt Flows in Hungary (1992 - 1998)

	1993 - 2001	1998 - 2001
Basic balance deficit	9%	32%
Outflow of resident capital	9%	15%
Reserve accumulation	82%	53%

4.2.14. Czech Republic

Czech Republic adopted a rapid liberalization strategy for its capital account, after communism ended and the former Czechoslovakia broke up into two nations. Restrictions on inflows were eliminated between 1993 – 1995. Some restrictions on outflows remained however, and those were mostly eased in 2001.

Figure 24. Ratio of BOP components to external debt stock: Czech Republic



Source: author's calculations, IFS

Figure 24 demonstrates results of Exercise 1 for Czech Republic. Debt flows poured with liberalization after 1993. Czech Republic used most of the debt flows to accumulate reserves. As the investor confidence in property rights have not yet established early liberalization period witnessed flight of resident capital, although they were legally restricted. A slowdown in capital inflows resulted in a currency crisis in 1997. Debt flows have been reduced after the crisis and remained stable in low levels.

A unique feature of Czech Republic has been the low level of burden of past debt. Consequently, unlike many emerging market countries, the deficit in NI has been very low. Moreover, this deficit has been surpassed by positive BENI balances. The BENI surpluses rose significantly after 1998, when EU accession process began and Czech Republic has become one the most FDI-attracting countries as a proportion of the size of its economy in the world. Consequently, throughout the liberalization period the basic balance has a positive balance. Capital flight also declined as domestic investors restored confidence to the country. A significant portion of the basic balance surplus, thus, used to accumulate reserves.

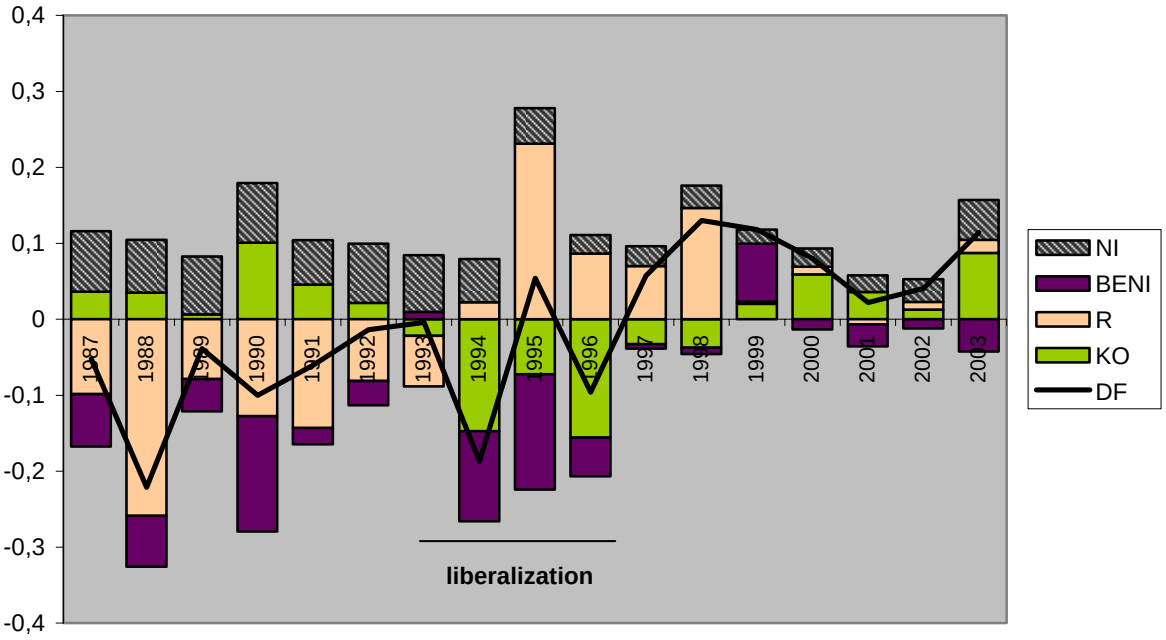
4.2.15. Poland

Poland's capital account liberalization has been parallel to the developments in country's relationships with the EU, IMF and OECD. Poland adopted the Article

VIII of IMF agreement in 1995. It has been a member of the OECD in 1996. With these developments, most restrictions on capital movements have been removed. Poland's capital account regulations have been conformable with EU when it became a member in 2004.

Figure 25 shows results of Exercise 1 for Poland. The surge in debt flows to Poland take place after 1996. In the first tow years, nearly all debt flows finance reserve accumulation. Except 1999, the BENI always gives positive balances, in contrast with the deficit values of NI. After 1999, capital outflows constitute and important financing need while the role of reserve accumulation becomes small.

Figure 25. Ratio of BOP components to external debt stock: Poland



Source: author's calculations, IFS

Table 20. Usage of Debt Flows in Poland (1997 – 2003)

Basic balance deficit	29%
Outflow of resident capital	35%
Reserve accumulation	36%

Source: author's calculations, IFS

In Poland, the surge in debt flows mostly financed capital outflows and reserve accumulation. The figures in Table 20 demonstrate this phenomenon. The share of capital flows and reserve accumulation within finance created by debt flows are almost the same at 35%. The remaining portion of debt flows financed basic balance deficits.

4.3. Concluding Remarks

Some observations on country analyses presented in Section 4.2 are worth noting. The analyses suggest that, when the behaviors of the new structural components are concerned, Asian and East European countries are more homogenous compared to Latin America. Comparing the end use of debt flows; roughly speaking, in Asian countries basic balance finance and in East European countries (after 1995) reserve accumulation has been important. Latin American countries provide different pictures. Capital outflows dominate other items in Argentina, Chile and Brazil; whereas basic balance finance is important in Mexico and Columbia. Meanwhile, outflows of resident capital in aggregate give negative balance in Peru, i.e., residents imported their capital back to country. An inter-regional comparison, on the other

hand, shows that the dominant item in the end use of debt flows had been outflows of resident capital in Latin America, basic balance deficits in Asia and reserve accumulation in East Europe.

Capital outflows, when aggregated for all the period after liberalization, gave positive balance in all countries, except Peru. Liberalizing capital account rapidly or gradually does not create much difference in this sense. A simple comparison of rapid liberalizer Argentina with gradual liberalizer Brazil; or rapid liberalizer Thailand with gradual liberalizer Korea suggests that the outflow of resident capital is due to domestic imbalances or inappropriate management of capital account rather than the pace of liberalization. Even in Venezuela, which had sporadic repression periods in its capital account, a high amount of capital flight was recorded.

Moreover, a careful examination of patterns of capital outflows reveal certain triggering events play an important role in raising the amount of capital outflows. These events can be one-shot liberalization of outflows (like Argentine liberalization in 1991) or some other regulatory decisions. The examples of the latter are allowance for pension funds to invest abroad in Chile (1998) and establishment of Bangkok International Banking Facility in Thailand (1993). Capital outflows increase sharply with these triggering factors and then they "fade out."

In each country analyzed, with the exception of Chile, we observe sudden stops in capital flows. In these crisis years, capital flows fell to negative values, i.e., the emerging economy concerned became a net creditor. The adjustment of other

components to falls in debt flows is worth analyzing. In almost all instances, except Indonesia (1997) and Hungary (2002), no reversal in capital flight occurred. Put it in another way, residents did not take their capital back to country to pay back their external debt. Instead, debt was paid either from the reserves, or by adjusting BENI to surplus values.

Noting the exceptional circumstances elaborated in Section 4.2[31], the reviews of country experiences offer a general picture after capital account liberalization: Immediately after liberalization, debt flows increase dramatically. Then, first capital outflows and sequentially reserve accumulation increase. A deficit in the NI balance accompanies this process. When debt flows stop, as NI is typically exogenous and resident capital rarely returns, after an initial loss in reserves, BENI starts to give surplus balances.

After liberalization, significant portion of debt flows has been used to finance capital outflows and reserve accumulation. A structural income account deficit constituted most of the remaining part of the basic balance deficit financed. As a result, the emerging market economies, on average, did not run deficits in the remaining parts of the basic balance, i.e., they have not been able to borrow to buy investment goods that may be used to enhance their productive capacities.

[31] Some notable exceptional circumstances are absence of capital outflows in Peru, very low NI deficits and atypical BENI deficits in Korea, large BENI surpluses in Venezuela after 1995 due to oil revenues.

CHAPTER V

A CASE STUDY: TURKEY

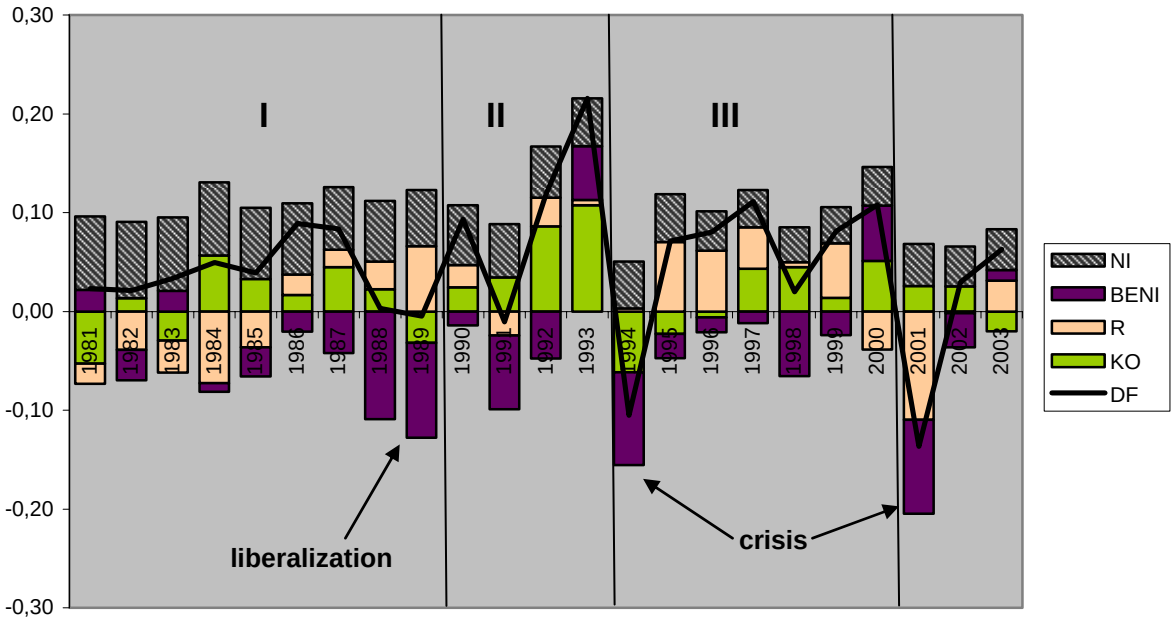
In this chapter I analyze the Turkish experience with financial liberalization using the framework provided in Chapter 3. Turkey provides a good example where capital account liberalization did not bring high growth rates: The average annual growth rate of real GDP has been 3.59% between 1990 - 2003 compared to 4.39% of 1970 – 89 pre-liberalization period. In the first section, I repeat the exercises undertaken in Chapter 4. In the second section, I provide a political economy perspective to analyze the relationship between components of balance of payments and establish a causal link between them using vector auto-regression (VAR) analysis. In the third section, I compare Turkey with the other countries analyzed in Chapter 4 and I provide some conclusions from Turkish experience.

5.1. A Structural Analysis of Turkish Balance of Payments Accounts

The results of the Exercise 1 are depicted in Figure 26 where contributions of each of our new components can be traced for the 1981 – 2003 period. Obviously, Turkey has been a net borrower since 1981 except the crisis years of 1994 and

2001, i.e., the debt flows gave positive balance. Sudden stops in capital inflows can easily be observed in the figure as sharp falls from 1993 and 2000's positive values to the following year's negative values.

Figure 26. Ratio of BOP components to external debt stock: Turkey



Source: author's calculations, IFS

Table 21. Usage of debt flows in Turkey (1981 – 2000)

	1981 - 1989	1990 - 1993	1995 - 2000
Basic balance deficit	64%	32%	34%
Outflow of resident capital	25%	61%	30%
Reserve accumulation	11%	07%	36%

Source: author's calculations, IFS

There are three patterns in usage of debt flows in 1981 – 2001 period. The first phase is observed until the financial liberalization of 1989. Before liberalization, basic balance deficits were mostly financed through debt flows. Financial

liberalization represents the beginning of the second phase. Liberalization brought a flight of resident capital. The results of the Exercise 2 presented in Table 26 show the change in patterns more clearly. The portion of debt flows used to finance capital outflows rose from 25% to 65% from first phase to the second, whereas the share of basic balance deficit fell from 64% to 32%.

1994 marks another shift in the pattern. Being trapped in the financial crisis with a low level of reserves, macroeconomic authorities then gave the utmost importance to having a high reserve level and debt flows were used mostly for financing reserve accumulation. In the third phase, the portion of debt flows used to finance reserves accumulation rise to 36% from 7%, while portion used finance of capital outflows fall to 34%. In 1994 and 2001, debt flows became negative, i.e., Turkey became a net exporter of capital. In both crises years, basic balance surpluses played a significant role in financing the flight of non-resident capital. In 1994 crisis, a reversal in outflow of resident capital financed the remaining portion of non-resident capital flight; whereas in 2001 such a reversal did no occur, instead of that, a reduction in reserves accompanied outflow of non-resident capital.

Apparently, basic balance deficit has been mostly due to the deficit in income account. Without the deficit in income account, the BENI component does not give notable deficits except 1993 and 2000, the years of consumption booms preceding financial crisis. Within BENI the most important item is current account balance excluding income account since Turkey has been a recipient of very little FDI. The

ratio of FDI to GDP never exceeds 1%, except 2001[32]. Accordingly, 96% of the deficit in income account has been due to interest paid to foreign debt stock both in 1984 - 2001 and 1990 - 2001 periods. Financial liberalization did not help non-debt-generating capital inflows to increase, instead large interest payments to the existing stock continued to be a burden and needed to be financed after liberalization.

The above analysis reveals that the traditional link between basic balance deficit finance and debt flows lost its importance after capital account liberalization. After Turkish financial liberalization of 1989, rather than financing basic balance deficits, debt flows were mostly used to finance outflow of resident capital, reserve accumulation and interest paid to existing short-term debt stock. Obviously, none of these three components financed by debt flows has a positive effect on the productive capacity of the country. Consequently, financial liberalization did not fulfill the neo-liberal premise of delivering a high growth rate. In the next section, we will analyze the Turkey's experience in detail.

[32] The only large figure in 2001 is an exception due to transfer of a new mobile phone license to a foreign operator and acquisition of a Demirbank, a resident bank, by HSBC.

5.2. Turkey's Experience with an Open Capital Account[33]

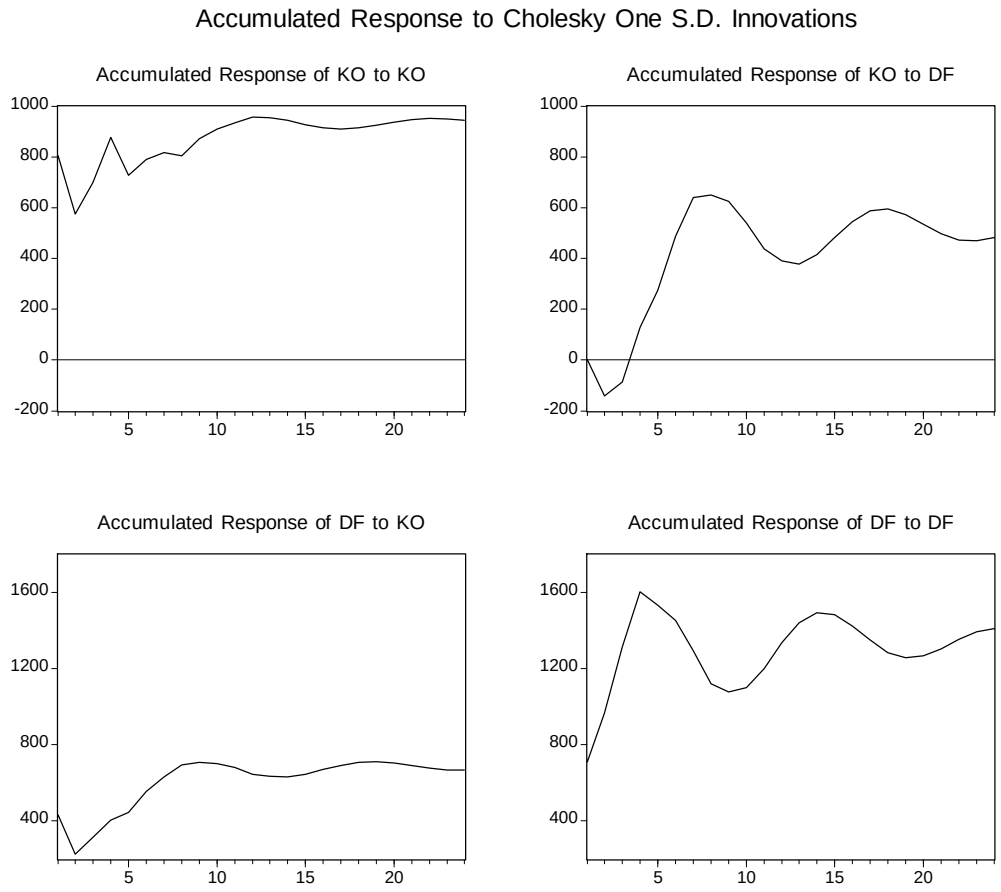
When Özal government took the liberalization decision in 1989, it was most probably an attempt to curtail the macroeconomic imbalances reappearing after the export-led growth boom of 1980s (Akyüz and Boratav, 2002; Alper and Öniş, 2001). From 1986 to 1989, public sector borrowing requirement to GDP ratio (PSBR) had already risen from 3.7% to 5.3% and inflation increased from 36% to 49%. Yet, the surge in capital inflows after liberalization aggravated the imbalances: Public sector borrowing requirement (PSBR) had been consistently on the rise and the government had opted for the easy debt-financing way to sustain these high levels by the help of abundant capital inflows. The debt-financing was in indirect form: government mostly borrowed in domestic markets, while domestic financial agents borrowed from abroad, increasing the external debt stock eventually. Indirect financing did not make a difference about solvency: Had the government become insolvent, its domestic lenders would be insolvent too. In addition, as Öniş and Aysan (2000) put forward, government had been reluctant to take necessary measures to increase its revenues (such as tax reform) as it was presumed that the debt-finance would be never-ending. By 1993, PSBR was 12% and inflation rate was 65%.

[33] See Cizre-Sakallioglu and Yeldan (2000), Boratav and Yeldan (2002) and Alper and Onis (2001) for detailed analysis about the post-liberalization Turkish economy. Güven (2001) provides a review of the reasons and effects of capital movements in the Turkish context.

High inflation rates have been another factor accompanying public deficits. The inflation in Turkey is mostly due to expectations based on past levels. Moreover, high rates of inflation raise the volatility of inflation itself. During 1990s, the inflation rate averaged 75% while its standard deviation has been 13%. Volatility in inflation, naturally, caused volatility in the real return of investments in TL denominated assets. In spite of the fact that TL denominated assets have real returns averaging 30%; because of the volatility, Turkish residents fled from TL and consistently hedged to foreign currencies by investing in foreign currency denominated assets which have been perfect substitutes to TL denominated assets thanks to liberalization. This flight took two forms: *First,* they invested abroad to avoid default risk of government and domestic banks, which resulted in outflows of resident capital. *Second,* they invested in foreign currency assets in Turkey to avoid the exchange rate risk of staying in TL denominated assets. The currency substitution stemming from the second form of hedging can be observed from the M2Y / M2 ratio. This ratio increased from 143% in 1992 to 192% in 1995 and to 225% in 2001. As a result, foreign currency deposits dominated TL deposits, raising their share in total deposits from 17% in 1987 to 49% in 1995. In 2001, more than half of the deposits in Turkish banks were in foreign currency terms. Both the capital flight from residents and increase in foreign currency deposits are reflected in the rise in "capital outflows" aggregate after liberalization. The capital flowed into the country was directed mostly to finance domestic agents' hedging.

I run a VAR to clarify the relationship between debt flows and capital outflows. Using monthly data for 1992 January - 1998 October period, I run two VARs, one with a lag length of 4 and one with 12. The former lag length is also the one offered by AIC and SIC. The results can be interpreted as causality relations in the short- and medium- run, respectively.

Figure 27. Accumulated impulse response functions (DF and KO, short lag length)



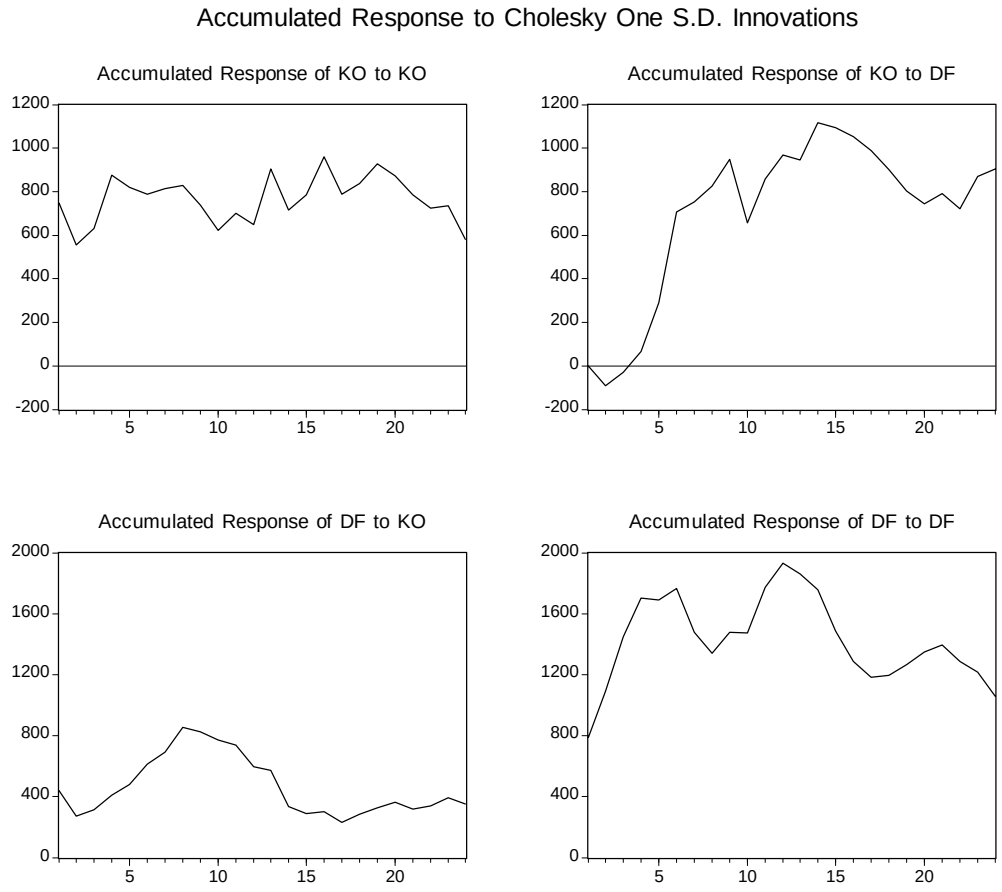
Source: author's calculations, Central Bank of Turkey; Lag length: 4 months

According to the VAR results, in the short-run there exists two-way (Granger) causality between debt flows and capital outflows. In the long run, on the other hand, only debt flows (Granger) causes capital outflows. International investors make their decisions according to the return rates in industrial economies and financial situation in other emerging market countries. Because of the contagion and herding effects, it is natural for debt flows to be exogenous in medium- and long-run. Figure 27 and 28 demonstrate the impulse response functions. As expected, accumulated effect of debt flows on capital outflows is positive for both lag lengths, that is, debt borrowed from non-residents raises the outflow of resident capital[34].

Another by-product of capital account liberalization has been a consistent overvaluation of TL. Apparently, after 1989 the real exchange rate of TL against major currencies moved to a lower plateau and except the depreciations in the crises years, stayed there. TL had an average real appreciation of 25% against US dollar in 1990s. The overvaluation has perverse effects on exports and growth. In addition, overvaluation had a significantly positive effect on imports. Moreover, as debt stock was augmented, the interest paid for it rose too. Through these two channels, debt flows once used to finance basic balance deficits before liberalization, became a stimulating factor for those deficits.

[34] The causality relationship is robust to exclusion of “Net Errors and Omissions” and / or "currency holdings of banks" from capital outflows aggregate.

Figure 28. Accumulated impulse response functions (DF and KO, long lag length)

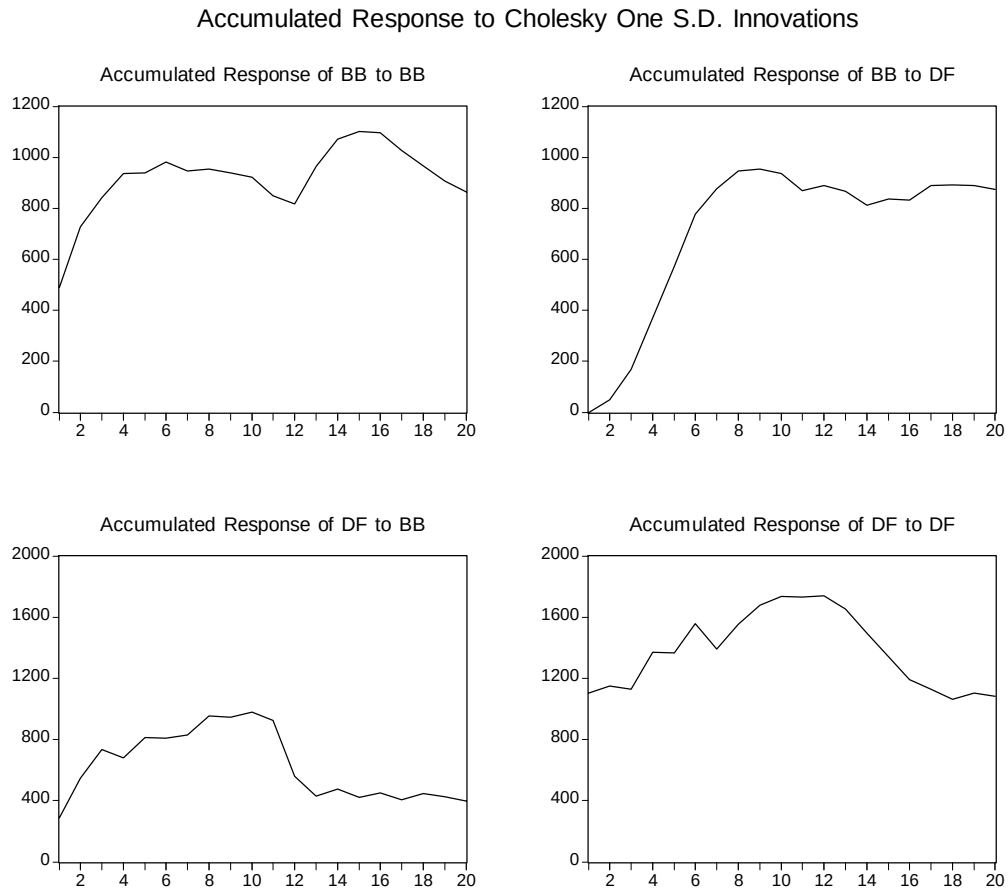


Source: author's calculations, Central Bank of Turkey; lag length: 12 months

In order to analyze the relationship between debt flows and basic balance deficits, I ran a VAR equation with 12 lags and using monthly data for 1992 - 2003 period. The lag value of 12 is offered by various criteria, but the results are robust for different lag values. According to the VAR results, debt flows (Granger) cause basic balance

deficits[35]. As observed from the impulse response functions presented in Figure 29, the deficit effect is strong in the last 10 months.

Figure 29. Accumulated impulse response functions (DF and BB)



Source: author's calculations, Central Bank of Turkey; lag length: 4

Although debt-financing was an easy way to finance public deficits, it was soon understood that it was a never-ending process. As continuity of capital inflows

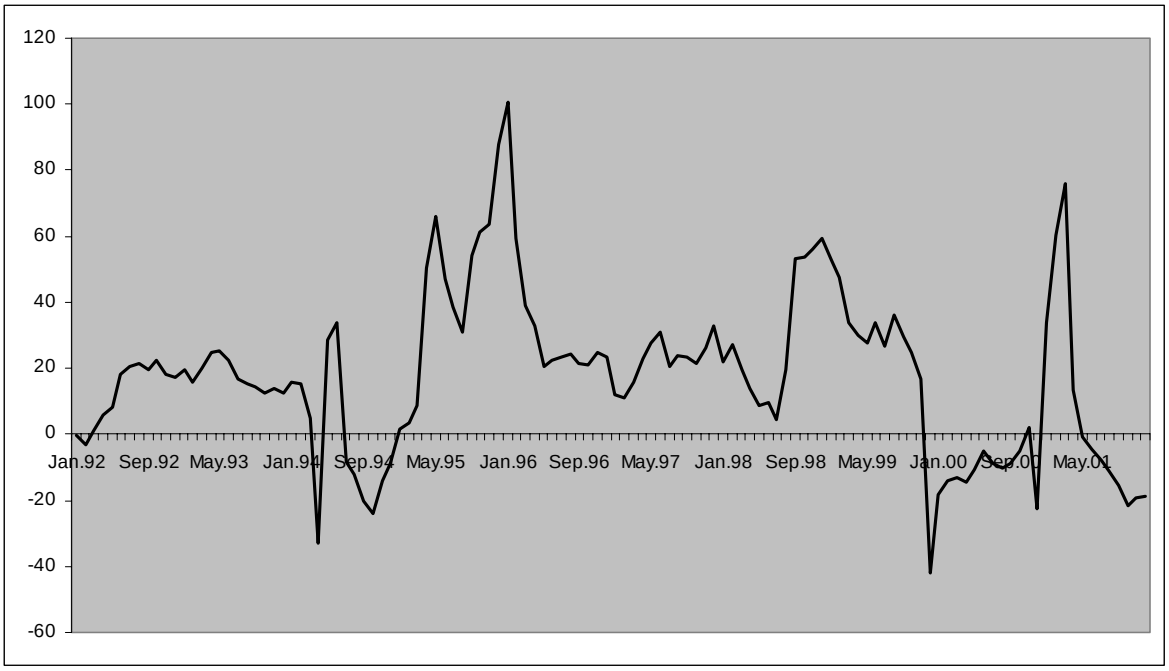
[35] VAR results are robust for different lag length specifications and for seasonally adjusted values of the basic balance deficit.

depended on high arbitrage levels for non-resident investors, while borrowing in high interest rates, government repressed depreciation of TL. As a result, arbitrage levels have generally been higher than 20% and rose occasionally to rates over 60% (see Figure 30). However, when investor expectations were reversed, it had been impossible to access to international financial capital even at high arbitrage levels. Boratav (2001) points out that the swing in debt inflows reached 25.6 billion US dollars in the major debt flow reversal of 2001 crisis.

Meanwhile, high arbitrage levels did not result in long-term borrowing. For the 1990 - 1999 period, short-term flows comprise 74% of the total debt flows[36]. The existence of a short-term debt stock reduced investor confidence and raised interest burden more. The short-term debt structure resulted in a Ponzi-type debt financing and refusal of roll over by investors has been a triggering effect for financial crises. In the second half of 1993, to prevent a further rise in the cost of servicing the domestic debt, the government cancelled various domestic debt auctions and accepted a small percentage of short maturity offers. Reversing the investor expectations, this attempt resulted in a run on foreign currency and consequently the 1994 financial crisis (Özatay, 1999). After 1994, the government did not have any attempt to solve the short-termism in debt financing. Rather, continuing in short-term borrowing, the government implemented a *de facto* managed float regime repressing depreciation to attain high arbitrage levels.

[36] After the implementation of IMF program, most of the short term debt was converted to IMF credits and this ratio falls to 48% for 1990 - 2003 period.

Figure 30. Rate of financial arbitrage in Turkey (%)



Source: author's calculations, Central Bank of Turkey
Rate of financial arbitrage = (1 + nominal interest rate) / (1 + depreciation of TL)

Caught to the 1994 crisis with a low level of reserves, the government began to use reserve accumulation as a shield to avoid depreciation and against another crisis. As a result, the costs of reserve accumulation, as elaborated in Section 2.3.2, fell on the country.

The combination of the circumstances explained above resulted in a vicious cycle of short-term debt, high interest rates, overvalued TL, and a Ponzi-type debt financing. Persistent outflow of resident capital, currency substitution and costly reserve accumulation accompanied this vicious cycle. By 1999, it became evident that public debt was at unsustainable levels. Meanwhile, PSBR

already reached 15% and fragility indicators relating to short-term debt were at all-time high levels. A last attempt to control the debt stock by the IMF-led stabilization program of 1999 resulted in the financial crisis in February 2001[37].

5.3. Concluding Remarks

Turkish capital account liberalization experience witnessed two financial crises. The period before the 1994 crisis resembles a Latin American style liberalization style, where large outflows of resident capital came after the liberalization decision. In this sense, 1989 liberalization can be compared with the contemporaneous liberalization of Argentina. Nevertheless, in 1994, a reversal in capital flight occurred, i.e., residents took their capital back to use it in paying back debt. This reversal in capital outflows is an exception in responses of emerging market countries to sudden stops in capital flows. On the other hand, the period after 1994 is much like Asian patterns of behavior of balance of payment components. A large reserve accumulation took place in this period. In the 2001 reversal in debt flows, much of these reserves were lost and when the exchange rate peg was given up, BENI adjusted by giving surplus.

According to the Turkish capital account liberalization experience, premature liberalization resulted in a flight of resident capital. Consequently, after capital

[37] There were two major elements in the stabilization program: a currency peg to a basket of euro and dollar and a quasi-currency board where expansion of monetary base was limited to expansion of net foreign assets. See Yeldan (2002), Akyüz and Boratav (2002) and Sak and Ozatay (2003) a variety of analysis of financial crisis of 2001.

account liberalization, the traditional link between basic balance deficit finance and debt-generating inflows of non-resident capital lost its importance. Debt flows became a cause of outflow of non-resident capital. My VAR analysis shows that debt flows (Granger) cause outflows of resident capital. In addition, as overvaluation of TL accompanied debt flows, they became a source of basic balance deficits, rather than a means to finance it. According to my VAR results, demonstrates that debt flows (Granger) cause basic balance deficits. After liberalization, instead of basic balance deficits, debt flows were mostly used to finance reserve accumulation and interest paid to existing short-term debt stock. Used in an unproductive way, it had not been possible for the debt flows to bring more economic growth.

CHAPTER VI

CONCLUSION

In this thesis, I argue that, in emerging market countries, after capital account liberalization the traditional link between the debt flows and finance of basic balance deficits lost its importance. I decompose the balance-of-payments and construct new components that make it possible to track the new financing patterns. I analyze emerging markets in three groups: Latin America, Asia and East Europe. Then, I make individual analysis for 15 countries and a special case study for Turkey.

Each region and country has its own circumstances regarding international financial liberalization. Nevertheless, in the framework of the analysis presented in this thesis, it is possible to argue that premature liberalization and inappropriate macroeconomics policies led to a new financing pattern where debt flows mostly covered mostly financed outflows of resident capital and reserve accumulation instead of the structural financing needs of the emerging markets. In addition, many emerging market countries actually had surpluses in their basic balances if interest and profit transfers to abroad are excluded. As a result of this new financing pattern,

the positive effect of capital account liberalization in closing the investment – saving gap in emerging markets has been limited.

The framework provided in this thesis provides a new perspective in explaining the lack of a robust link between capital account liberalization and growth. The capital inflows after liberalization, however large, have financed a large capital flight and a considerable unproductive saving as reserve accumulation. Therefore, capital inflows merely augmented national savings used in productive ways. This new dimension may complement the existing explanations in the liberalization and growth literature.

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APPENDIX

CHRONOLOGY OF LIBERALIZATION EXPERIENCES

Argentina	Liberalization between 1977 – 82. Average -0,7% growth rate in 1981 – 89 period. "Austral plan" implemented in 1985 temporarily lowers inflation but does little to spur growth. Multiple exchange rates between 1981 – 89. Carlos Menem tooks office in July 1989. 1991: Adoption of "Convertibility Plan": currency board with US dollar at rate one peso equals one dollar. Complete liberalization of capital accounts. No restrictions on foreign currency deposits in domestic banks. Encouragement of dollarization by making it legal to write contracts in foreign currencies. Reduction in tariffs. 1992: FDI boom to privitized public enterprises. Liberalization and deregulation in many markets. 1994: Bank run after Tequila crisis. Reserve requirements on foreign currency accounts are reduced to inject liquidity to the system. 1997 – 98: Limited contagion from Asian crisis and Russian default. 1999: Brazil devalues real. Loss of competitiveness. Given the real appreciation of peso since the implementation of currency board due to domestic price stickiness, presence of non-tradebles, etc., hit by Brazil's devaluation have been hard. Fernando de la Rua tooks office in December. 2000: Tax increases to close down the fiscal deficit that stem from excessive expenditure by provinces. Recession instead of a recovery in public accounts. IMF stand-by program. 2001: Exit from currency board in December. All bank accounts are pesofied: 1,4 to 1 in dollar deposity; 1 to 1 in dollar loans, imposing cost on depositors. Bank withdrawals are limited. IMF support withdrawn. Cabinets resigns. Default on debt. 2002 - : effective loophole in limitation of bank withdrawals cause an illusion in balance-of-payments accounts. Argentine residents are allowed to hold more than $1,000 to puchase Argentine stocks. If these Argentine stocks are cross-listed in US markets, they can effectively be sold there and dollar proceeds can be deposited in a US account. Under normal circumstances, these dollar proceed should appear as a capital inflows, as US residents acquire shares in Argentine firms. However, now they appear as outflows. Sources: Ariyoshi et al. (2000), Dominguez and Tesar (2005), Kaminsky and Schmukler (2002)

Mexico	1989: Substantial ease of restrictions on portfolio flows. Easing of restrictions on FDI, acquiring of voting shares by non-residents. 1990: Non-residents allowed to hold Mexican government bonds. 1993: Restrictions on borrowing from abroad abolished. Free non-resident access to stock market. Substantial liberalization of FDI. 1994: NAFTA becomes effective. Membership to OECD. Restrictions on investment abroad by investment companies were abolished. Tequila crisis (December). Sources: Ishii and Habermeier (2002), Kaminsky and Schmukler (2002), Williamson and Mahar (1998)
Chile	Debt crisis in 1980. Severe restrictions until 1985 and reforms thenafter. 1991: Implementation of *encaje* with a reserve requirement of 20%. Substantial lessening of restrictions on investment by residents abroad. 1992: Extention of *encaje* base and increase of the rate to 30%. Residents are allowed to issue bonds abroad. First allowence for pension funds to invest abroad, albeit with low ceilings. 1994: Ease on restrictions of pension funds investment to abroad. 1997: Further lessening of restrictions on resident's investment abroad. 1998: *Encaje* are eliminated by setting the reserve requirement rate at 0%. Funding obtained from bonds issued abroad by residents are no longer have to returned to Chile. 1999: Substantial lessening of restriction on investment of pension funds abroad. Sources: Ishii and Habermeier (2002), Cowan and De Gregorio (2005), Johnston et al. (1997), Kaminsky and Schmukler (2002).
Brazil	A modest opening of capital account with sporadic applications of capital controls. Debt crisis in early 1980s. Interruption of capital flows after 1983. 1988: Official regulation of parallel exchange rate markets, causing an incentive to broaden transactions through parallel markets. 1990: Certain financial institutions were authorized to obtain resources from abroad through the issuance of commercial papers. 1991: Several substantial measures to liberalize capital flows. 1993: Implementation of quantity and price-based restrictions on inflows. 1994: Real plan to reduce inflation. 1995: Temporary ease of controls to mitigate the effects of Tequila crisis.

	1996: Tightening of controls. Constant evolution of controls as market participants find ways to circumvent them. 1997: Controls on inflows relaxed as a response to Aisan crisis. 1999: Devaluation of real. Exchange rates allowed to float. Elimination of multiple exchnage rates. IMF-supported program. 2000: Non-residents are allowed to invest under the same rules with residents. Sources: Goldfajn and Minella (2005)
Peru	1970 – 85: Recurring balance of payments crises, low growth rates, high inflation, fiscal imbalances. 1980: Dual exchange rate regime. 1985: Stabilization program reduced fiscal deficit, however slow growth rates remain. Extensive controls on capital flows. High inflation in 1989. 1990: Reform program including liberalization of current account, capital account; exchange rates unified and allowed to float, supervisory framework enforced on banks, 1994: Elimination of differential treatment of resident and non-resident agents by constitutional amendment. Sources: Ariyoshi et al. (2000)
Columbia	1991: "Apertura program" unification fo exchange rates, controls on borrowing abroad relaxed. Some controls on capital inflows remain, however. 1992: A 10% witholding tax aiming to reduce certain speculateive cross-border transactions. Residents were allowed to hold portfolio investments abroad up to 500,000$. 1993: Implementation of Chilean-style URRs at a reate of 47%. Continued surge in inflows. Effects of URRs are mixed. They may have played a role on lengthened maturity of debt and conversion of some short-term flows to FDI. 1994: URR rates were raised to a range of 43% to 140%. 1997 – 98: Lowering of the rate of URRs. 2000: Elimination of URRs. Sources: Ariyoshi et al. (2000), Ishii and Habermeier (2002)
Venezuella	1989: Virtually all forms of exchange rate controls abolished, free capital accounts regime. 1994 – 96: Extensive controls on both inflows and outflows. Multiple

	exchange rate markets, with parallel market premium of 40 – 100%. 1996: Implementation of IMF program and liberalization back. 2003: Imposition of controls on both current and capital account transactions. Source: IMF (2005), Ariyoshi et al. (2000), Kaminsky and Schmukler (2002)
Korea	Financial repression before 1980. 1982: Restrictions on foreign borrowing under $1 million eased. 1985 – 1990: Several minor measures of liberalization. 1991: Residents were allowed to issue securities in foreign currencies to finance imports of inputs and machinery for which no domestic substitute available. Nonresidents who acquired Korean shares through convertible bonds were allowed to trade them in the stock exchange. Nonresidents were allowed to convert up to $100,000 to invest with a maturity of more than 2 years. 1992: Residents were allowed to issue abroad negıtiable certificates of deposit and commercial paper, and maintain accounts abroad. The stock exchange was opened to nonresidents with quantitative limitations. 1993: Announcement of capital account liberalization plan. Non-residents were allowed to held local currency accounts. The list of institutional investors who can invest abroad was expanded to include investment companies and pension funds. 1994: Ceilings on borrowing from foreign financial instititutions abolished. Direct overseas stock investment allowed witha ceiling. 1995: Relaxation of foreign ownership restrictions on Korean firms from 10% to 12% 1996: Membership to OECD. Nonresidents allowed to hold local currency accounts in domestic banks. 1997: Asian crisis Sources: Ishii and Habermeier (2002), Johnston et al. (1997), Noland (2005), Kaminsky and Schmukler (2002).

Malaysia	Capital account mostly liberalized in 1970s. Furher deregulation of FDI and portfolio inflows in mid-1980s. 1994: Imposition of temporary controls on inflows, including a ban on selling of Malaysian securities of less than one-year maturity to non-residents by residents, ban on commercial banks to engage in non-trade-related bid-side swaps and forward transactions with non-residents and asymmetric open position limits on banks. 1995: Relaxation of controls on inflows. 1997: Asian crisis. 1998: Imposition of temporary controls on capital outflows and peg of local currency to dollar. Outflows of portfolio investment were obliged to be held fro a one-year period. 1999: Ease of controls on outflows by replacing one-year period with a gradual scheme, allowing profits to be repatriated by paying an exit tax. 2001: Controls on outflows are completely abolished. Sources: Williamson and Mahar (1998), Ariyoshi et al. (2000), IMF (2005), Kaplan and Rodrik (2002)
Thailand	Relatively liberal capital account transactions even before the major reforms are implemented. 1985 – 87: Liberalization of capital inflows in the form of portfolio investment, restririctions on portfolio outflows remain, however. 1991: Allowence to lend by residents to companies abroad which has at least 25% Thai participation. Puchases of assets more than 10$ million are subject to approval. 1993: Opening of Bangkok International Banking Facility, which facilitated borrowing from abroad to a large extent. 1995: Response of monetary authorities to surge in capital inflows by imposing 7% reserve requirement at the Central Bank. 1997: Asian crisis begins at Thailand. Imposition of controls on outflows, by restricting lending in local currency to non-residents. 1998: Controls on outflows are lifted. Sources: Ariyoshi et al. (2000), Ishii and Habermeier (2002), Kaminsky and Schmukler (2002), Johnston et al. (1997).
Indonesia	1985: Liberalization of outflows by residents individuals; controls on outflows by banks and financial institutions remain. 1989: Complete liberalization of portfolio capital inflows.

	1991 – 96: Several quantitative controls on offshore borrowing and government borrowing from abroad. 1997: Asian crisis. Source: Johnston et al. (1997)
Philippines	Limited liberalization in 1980s. Gradual elimination of all restrictions on capital account between 1992 – 95. Source: Williamson and Mahar (1998)
Hungary	1989: Liberalization of FDI by non-residents, along with current account. 1993 – 95. Minor liberalization attempts on capital flows. 1996: OECD membership. However trasitional clauses are applied for some OECD codes on capital flows. Commercial credit transactions with non-residents, opening foreign exchange accounts at domestic commercial banks by residents and personal capital movements are allowed. 1997: Purchase of OECD member government bonds by residents allowed. 1998: Russian crisis. Short-lived effect on Hungary. 2001: Full application of OECD codes on capital flows, complete liberalization. Source: Ishii and Habermeier (2002)
Czech Rep.	1993 - 1995: Rapid liberalization of capital flows. Some restrictions remain on mostly outflows. 1995: OECD membership. Implementation of a foreign exchange transaction fee to limit inflows, which remain ineffective. 1997: Slow down in capital inflows, currency crisis and implementation of a macroeconomic policy package for recovery. 1999: Lifting of limits on foreign exchange transactions. 2001: Issuence of debt instruments abroad by residents allowed. 2004: Membership to EU and full liberalization. Source: IMF (2005)
Poland	1993 – 95. Minor liberalization attempts on capital flows. 1995: Application of IMF Article VIII. As a result, most restrictions on capital flows are removed. 1996: OECD membership 2004: EU membership Source: de Souza (2004)