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On the Trials and Tribulations of Capital Flows: How to Manage them in Emerging Market Economies?

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1. Introduction

International financial integration has been an inevitable outcome of globalization, which has been strongly recommended by international financial institutions. Technology has enabled high international capital mobility, serving the desires of international investors who seek to make maximum profit out of interest rate differentials in international financial markets. The encouragement of Emerging markets to liberalize their capital accounts has been an important characteristic of this group of countries for the past decades. The main view has been that they should take advantage of foreign investor's capital to complement the lack of sufficient domestic funds for development. Opening their capital accounts however, has exposed them to the pro-cyclical financial flow volatility. Sudden surges in capital inflows can create adverse situations in terms of financial stability, such as a deteriorating liability structure by accumulating disproportionate levels of short term debt and an increasing fragility by fueling excessive credit booms. These surges of capital flows also have important implications in terms of macroeconomic stability, they create appreciation pressures on the real exchange rate as well as an increasing loss of monetary authority. This thesis sets out to answer firstly, what are the associated risks to capital in Emerging Market Economies? The hypothesis of this research question considers that the risks these economies are exposed to are capable of building up systemic risk. After understanding what the underlying characteristics of these countries are and the vulnerabilities they face in terms of the risks of capital flows this thesis will set out to answer a second important question, what policies contribute to the management of capital flows in the pursue of stability and crisis resilience? This thesis makes the hypothesis that given the particular circumstances of Emerging Market Economies, the policies that would promote stability should include components to aid in countercyclical macroeconomic management of the capital flows to attempt to make the boom-bust cycle smoother. It is important to understand that what this thesis will explore are those policy prescriptions that can be done at the domestic level. Although there is an important debate as to what should be done in terms of international coordination of the

financial architecture globally, it will be out of the scope of this paper. We also assume that although capital flows present challenges and significant exposures, they also do bring benefits to Emerging Market Economies and that is why this paper explores how they should be managed in order to exploit the benefits and avoid as much as possible the risks inherent to them¹.

This thesis is organized as follows, chapter two will explore three key vulnerabilities that are pertinent to understanding the stance of Emerging Market Economies with respect to the international capital market and its participants. These key vulnerabilities are the tendency of procyclicality, the role of expectations of financial investors and the market and finally the issue of low equity and interlinkages within the banking system. Once the main asymmetries that underlie Emerging Market Economies have been reviewed, chapter three will explore the origins, transmission channels and consequences of the risks of capital flows. The risks that will be explored are fourfold: exchange rate pressures, sudden stops, currency mismatches, and maturity mismatches. These risks were chosen as they are frequently mentioned in the literature on Emerging Market Economies. Within the context of the risks explained in chapter three, chapter four goes on to explain what policy prescriptions have been put forth by the literature in order to manage the capital inflows coming into these countries and how to manage them to avoid crises, which in several occasions have hit these regions, such as the debt crisis of Latin America in the 1980's and the Asian crisis of the late 1990's. This chapter will also explore the costs and benefits of the interaction of the capital flow management techniques proposed versus the risks presented. Finally, chapter five presents the concluding remarks of this thesis.

¹ For a discussion on the benefits of capital mobility see (Williamson 2005, p.21-34).

2. Vulnerabilities of the Financial Market on Emerging Market

Economies

Emerging markets have shown an important connection between their economic behavior and the capital flows that enter them. This reality stresses the importance of the vulnerabilities that boom-bust cycles engendered externally in capital markets, can impose on emerging market economies. Strong business cycles in emerging economies exposes them to elevated costs both economically and socially, given that these business cycles are strongly associated to the relationship between the domestic and the international capital markets, it is worth understanding the forces that stimulate them (Ocampo 2003, p.1).

2.1 Procyclicality

The state of liquidity in the developed markets push investors to seek returns in alternative locations. Calvo, Leiderman and Reinhart (1993) study the features of the episode of capital inflows into the region of Latin America during the early 1990's and show the importance that external conditions play in influencing moves of capital to alternative regions. During this episode, the particular circumstances included: low interest rates at the international level and a recession in the United States. They argue that because these are elements which are external to the Latin American region, it leaves it vulnerable to sudden changes in the behavior of the flows when external conditions change. What is noteworthy of this episode is the fact that capital was pouring into countries in the region which had very distinct performances and policies in macroeconomic terms, which suggests this was an external shock common to the region. When compared to the episode of inflows to Latin America in the late 1980's which had a mean of about USD 8 billion per year, in comparison, there was an important difference in 1990 when the volume was of USD 24 billion and then of USD 40 billion in 1991 (Calvo et al. 1993, p.108). These authors show that the interest rate differentials, although varied amongst Latin American countries, were in general higher during the early 1990's. During this episode, what is of particular interest is that although the high interest rate differentials encouraged a rise in capital flows, these did not arbitrage away the significant differentials (Calvo et al. 1993, p.121). There was a marked drop in interest rates in the short-term interest rates in the U.S. which incentivized the flow of capital and

alternate investments in Latin America during this time. In addition to the low levels of short-term interest rates, there was a reduction in the return of investments such as the real estate market, evidenced by the marked oscillations in the capital account of the United States were shown by sharp increases in outflows and likewise reductions in inflows. This reduction in the rates of interest also made the markets of the Latin American region more attractive because it improved the solvency of those obligations which had floating rates (Calvo et al. 1993, p.125-6).

These scholars present data that endorse the view that fluctuations in outflows of capital from the U.S. are a key influence as “external impulses” that impact the magnitude of the inflow of capital into the Latin American region. They point to three specific examples of when these “impulses” were a source of volatility of capital flows between the two regions. An episode in the period of 1978-1981 and another episode in 1991, where the inflows to Latin America, were clearly related to outflows of capital from the private sector in the U.S. Evidence of this is shown in the balance of payments accounts of the latter country. An example of an outflow episode as a source of “impulse” from the Latin American region took place in the period of 1983-1989 which was corresponded by an inflow of capital into the U.S. (Calvo et al. 1993, p.127-8). The evidence suggested by the results of their econometric analysis on ten Latin American countries supports the hypothesis that significant reductions in the U.S. of rates of interest, accompanied by lower earnings on stocks and also lower yields on real estate, because of the adverse economic situation, would be related to a surge of capital flows to the region (Calvo et al. 1993, p.131).

During the early 1990’s there were also significant regulatory changes in the developed economies, which are pertinent to understanding the importance of external factors as a source of push into emerging market economies. The amendments to regulation in capital markets during this period led to reductions in the costs of transactions for economic agents (Calvo et al. 1993, p.128).

Another important consideration in terms of procyclicality is the stance on fiscal and monetary policy in emerging markets, which has been empirically supported. Emerging

market economies have important underlying characteristics which make them prone to take on pro-cyclical fiscal and monetary policies in comparison to developed economies. Given that most of these economies have important obstacles in issuing debt in their own national currency in external financial markets and their domestic capital markets are shallow, they complement the shortage of finance in the international capital markets. These asymmetries leave limited room for emerging market economies to take on countercyclical fiscal and monetary policies, since they assume the pressure to procyclicality from the international capital market (Ocampo 2008, p.68).

Taking a countercyclical stance in terms of fiscal policy is challenging due to borrowing constraints. Arguments from Gavin and Perotti (1997) indicate that Latin America and its business cycle has a fiscal policy that is characteristically procyclical. For example, if there is a recession, the authorities are encountered with a lacking confidence in terms of their solvency capabilities which limits their access to further credit and running countercyclical fiscal policies under these conditions becomes extremely improbable (Gavin and Perotti 1997, p.38-40). Arguments from Riascos and Vegh (2003) support the previous argument in that they view that emerging economies have an incomplete credit market internationally, and usually are able only to borrow when they have low risk valuations and their ability to obtain borrowing is dependent on the good state of their economy, thus their optimal fiscal policy tends to be procyclical (Riascos and Vegh 2003, p.2-3). During good economic times, the improvement in the revenues of the government and the ease of access to both external and domestic finance will encourage an increase in public spending, which is vulnerable to an alteration when the above circumstances become absent during bad economic times. It is during this time that important cuts are made in the primary expenditure of the government, when their revenues are suddenly reduced due to possible devaluations together with increased levels of both international and domestic interest rates which may push upwards the public debt ratios (Ocampo 2003, p.3).

The analysis of the procyclical stance of monetary policy is interlinked with the exchange rate regime of the country and the available instruments in terms of monetary policy are dependent on its chosen regime. Drazen (2003) argues that emerging markets exhibit a

procyclical monetary policy when raising the short-term rate of interest. This creates a signal that the central bank is committed to defend its currency, in particular in times of speculation. The author argues that increases which are moderate rather than very sharp ones serve better in terms of dissuading speculation (Drazen 2003, p.37). Williamson (2005) argues that monetary policy is procyclical in these countries since attempts to diminish an asset boom by the central bank in the domestic economy by raising interest rates will further heighten the tendency for increasing even more the flow of capital (Williamson 2005, p.8).

Kaminsky, Reinhart and Vegh (2004) empirically develop a model that shows that many developing countries, including several emerging markets, have a tendency to take on both procyclical fiscal and monetary policies. They also show that the business cycle is strengthened by the positive correlation between the macroeconomic policies and the capital flow cycle (Kaminsky et al. 2004, p.26-30).

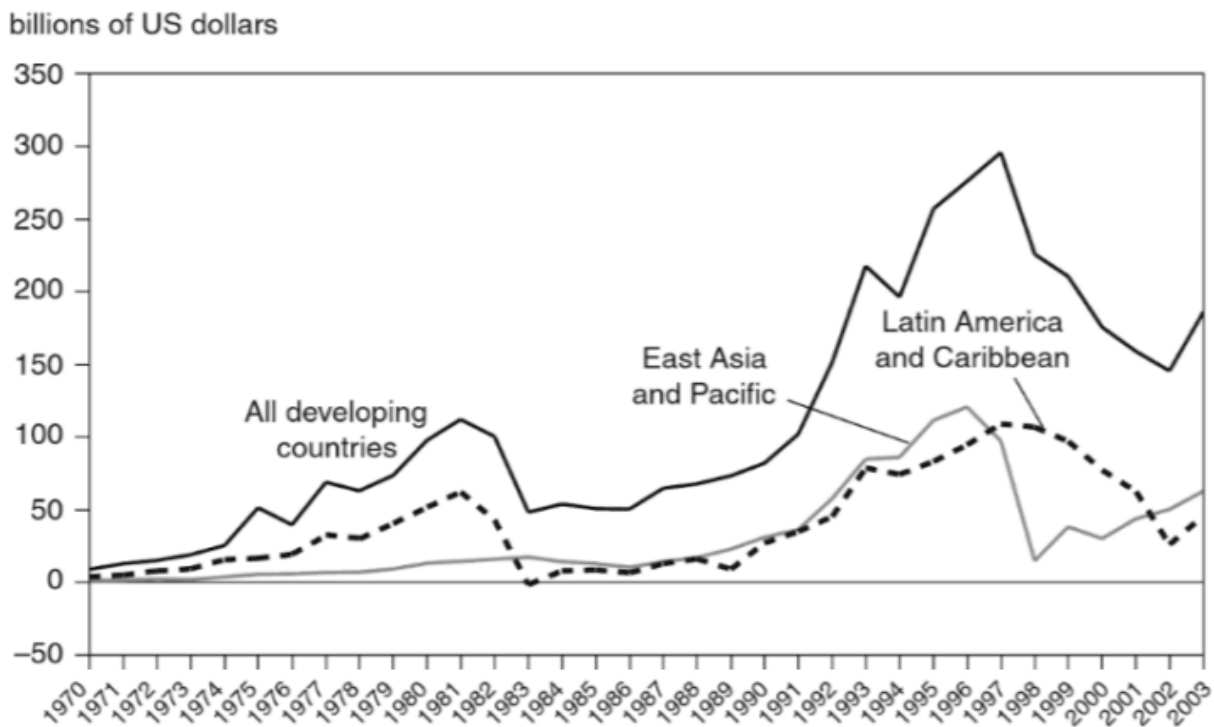
2.2 Expectations

Expectations play a key role in the availability of financing in emerging market economies. Ocampo (2003) characterizes the cycles of the capital account of emerging economies as suffering from “the twin phenomena of volatility and contagion” (Ocampo 2003, p. 1). In terms of volatility, he associates this with important variations in the evaluation of risk of emerging markets. When there are episodes of boom, international investors are willing to invest in riskier assets, which these markets are measured to be. However, when there are crises, these investors are more averse to risk and withdraw their investments in a search for assets considered as less risky and of better quality (Ocampo 2003, p.2). The importance of credit ratings and market evaluations is that they are procyclical, thus implying volatile spreads, which during a crisis are narrower and reduce available amounts of finance and short-term borrowing (Ocampo 2008, p.65-7).

The Figure 1 below shows the volatility of capital flows to emerging economies, comprising the years between 1970 to 2003. During the Bretton Woods era, the flow of capital to the emerging economies was negligible. The total amount of net capital inflows in Figure 1 below, shows the level which was entering developing countries in general, and also shows those to the emerging markets of Latin America and Eastern Asia separately. Beginning in

the decade of the 1970's of the "recycling of the petrodollars" there was an increasing trend of flows and throughout the period, which exemplifies a pattern that shows a cyclical behavior. The topmost point of lending to Latin America was in 1981, which later reduced significantly due to the debt crisis in the region. At this time however, the flows continued to direct towards Asia. In the 1990's there was a renewed interest in Latin America after they overtook reforms to deal with the debt crisis but saw a slight drawback in 1994 because of the crisis in Mexico. With respect to Asia, the trend continued upwards throughout the decade of the 1990's up until the crisis broke out in 1997. The beginning of the decade of the 2000's saw a reintroduced trend upwards towards lending in both of the Latin American and East Asian regions. From this figure, it can be shown how volatile the flow of capital to emerging markets has been historically. This figure shows that there are important fluctuations in the "overall flow," which is indicative not only on the changing expectations of international investors, but also in the available finance as mentioned in the previous section (Williamson 2005, p.6-7).

Figure 1. Net inflows of foreign capital to developing countries, 1970-2003



Source: Williamson 2005, p.6.

When addressing the contagion issue, the asymmetry in information makes emerging markets to be grouped into similar risk categories and the international investors perceive them as being “strongly correlated.” These perceptions, however objective they may or may not be can turn these “correlations into a self-fulfilling prophecy” (Ocampo 2003, p.2). There is a clear incentive for herding behavior of investors in the international market and drag many of the countries which are in the same risk level towards the same path, when there is an important shock in the economic outlook of one or some of them (Ocampo 2008, p.65-7). An example of a significant case of contagion came during the Asian crisis of the late 1990’s, when Thailand was heading into crisis, investors lost confidence and there were large outflows of capital from the Asian countries, which threw many of the countries which were growing at a rapid pace into crisis (Williamson 2005, p.1). This practice of herding behavior often causes international investors to flood foreign funding into emerging market countries in levels which make the possibility of crisis a very likely one, particularly if the countries that borrow don’t resist the temptation to borrow as much as is available to them, they have excessive self-confidence during good economic times and often take up more liabilities than they can repay (Williamson 2005, p.2).

There is another important development from the recent wave of globalization that is worth noting in terms of the volatility in lending that affects the financial markets in general, but no doubt has an impact on the volatility of emerging markets and that is the issue of “Short-Termism” of the asset management industry. Formerly, investors were more concerned about the returns of their assets in the long-run, but the recent trend is that of maximizing short-term returns and this type of behavior incentivizes and indeed accentuates herding behavior, which emerging markets are not immune to. The long-run consequences of this type of behavior are not prioritized in the eyes of creditors, which should serve as an extremely important warning sign to borrowers in emerging markets in particular (Williamson 2005, p.70).

2.3 Low Equity and Interlinkages in the Banking System

There are inherent risks in terms of the liquidity of the banking sector, financial soundness could be susceptible to sudden changes in the performance of loans and market failures affecting credit risk. The spending behavior and the balance sheets of private economic agents is influenced by “domestic financial multipliers” which makes the financial sector of

the domestic economy responsible for and at the same time a possible target of the boom-bust cycle. The process begins with the expansion of credit domestically, which is enabled by the surge in external lending. During the boom part of the cycle, spending by the private sector is stimulated, however at the same time the accumulation of debt by the private sector will inherently prompt during the bust part of the cycle a deterioration of the portfolios of the loans extended during the upturn, which will subsequently contract lending and spending during this downturn. This is problematic for the banking sector and financial intermediaries due to the inherent weakness of their exposure to swings in the financial market environment because of their high leverage ratios of operations. The low equity of a financial institution is sensible to maturity mismatches, in particular when they are exposed to the market failures that may impact the valuations of credit risk (Ocampo 2003, p.4).

Episodes of boom bring about underestimation of risks, whereby market participants have high expectations on the valuation of assets. This is problematic when combined with a rapid expansion of credit due to “overestimation of credit quality.” Bank competition creates additional pressures to lower credit and risk standards and loans end up in low credit quality borrowers. Even in the case of more experienced, larger and prestigious institution which have a tendency to preserve high credit quality borrowers, overall the banking sector is faced with deteriorating balance sheets which is the outcome of excessive risk taken during an episode of lending booms (Ocampo 2003, p.4).

Ultimately, non-performing loans will reveal the risks built up during these times of rapid credit expansion. If no new equity is injected in the bank’s balance, the deterioration will lead them to reduce lending even in the event of borrowers which will pay rates of interest which are higher than the prevalent ones. Loan-loss reserves and equity may not be enough to cover a negative shock. The credit crunch that follows will be as severe as the volume of the boom in credit and how credit quality was affected, which is aggravated by the fragile balance sheets of non-financial corporations and firms. If an external, adverse shock affects the economic agents in general, the entire banking system will feel the negative effects and may find it difficult to continue running their operations (Ocampo 2003, p.5).

3. Origins, Transmission Channels and Consequences of the Risks of Capital Flows

The previous chapter elucidates the asymmetries that underlie Emerging Market Economies and how the external push and pull of capital flows make them particularly vulnerable to boom-bust cycles. The countries that fall victim to these boom-bust cycles have been exposed to a combination of risks that buildup during the business cycle. This next chapter will explain what the main risks of capital flows that Emerging Market Economies are exposed to and will summarize their origins, transmission channels and consequences.

3.1 Exchange Rate Pressures

The volatility in the capital account of emerging market economies has a significant effect on the fluctuations of the real exchange rate. Episodes of boom bring about nominal exchange rate appreciation when the regime of the exchange rate is flexible; if the regime is instead fixed it will be reflected in higher inflation pressures (Erten and Ocampo 2013, p.3). In the paper by Reinhart and Reinhart (2008), they argue that “capital flow bonanzas” to the economies of emerging markets have the prospect of creating significant vulnerabilities such that the chances of a crisis are heightened. The pattern described in the previous chapter in terms of international investors seeking alternative returns in emerging economies has repeatedly taken place in the “modern era of global finance” (Reinhart and Reinhart 2008, p.1).

As discussed above, when there are surges of capital flows into these economies, the tendency is for the exchange rate to appreciate, as well as an improvement in the prices of both assets and local commodities (Reinhart and Reinhart 2008, p.1). These changes are brought about by important wealth effects generated by the appreciation of the local currency, which effectively creates a capital gain (Ocampo 2008, p.70).

Capital flows are usually related with deteriorating current accounts and accumulations of international reserves. This latter coming as an attempt from the central bank to mitigate the tendency of exchange rate appreciation. The exchange rate is pressured towards appreciation

not only because of a higher demand for assets in the local market, which could possibly generate asset bubbles, but also because of higher aggregate demand in tradable and non-tradable goods. If there is no perfect elasticity in the supply of the non-tradable sector, the relative price of these will increase, effectively generating a real exchange rate appreciation (Reinhart and Reinhart 2008, p.39). The increases in asset prices enhance fiscal indicators as well as foster credit growth domestically. The danger with these factors is that they are capable of aggravating structural vulnerabilities (Reinhart and Reinhart 2008, p.1). These conditions create significant exposure for emerging market economies when the danger of a shift in the perspective of international investors comes to life and they decide to invest elsewhere creating a reversal or sudden stop of capital flows, and the prices of assets start to drop and this loss in capital leads the country into a difficult current account adjustment of the economy when excess spending is no longer financed by external capital flows (Reinhart and Reinhart 2008, p.2-8).

An additional concern that real exchange rate pressures generate in the economies of emerging markets is the impact this appreciation has on the export sector. This sector was fundamental in terms of the development of technological and economic growth in these economies. Exports are also a key indicator of solvency in terms of granting credit to these countries, and a negative shock to the export sector may have an economywide impact (Calvo et al. 1993, p.143). The loss of competitiveness stemming from an overvaluation of the domestic currency takes place, this is revealed in a worsening of the current account, which is being financed by capital inflows. The inability of the emerging market country to turn around this current account deficit in a reasonable time frame usually gives rise to the buildup of liabilities in foreign currency which burdens future current accounts in terms of the stock of the debt service (Metzger 2001, p. 207-9). Since most of the borrowing in emerging market economies comes in the form of foreign currency, a sudden negative change in the exchange rate creates solvency doubts since most of the production is denominated in domestic currency relative to the debt which is denominated in external currency (Eichengreen et al. 2007, p.123). This sequence of overvaluation and net external debt in foreign currency creates an increase of depreciation expectations, emerging market economies will not be able to sustain an endless current account deficit and solvency questions makes them lose access

to international capital markets, a depreciation effectively takes place which could lead the country to a balance of payments crisis (Metzger 2001, p.207-9).

3.2 Sudden Stops

Emerging market economies which continuously depend on capital flows are vulnerable to the occurrence of a sudden stop, which are mainly an exogenous shock when there is a change in international investors' expectations. In Calvo's (1998) paper, he uses known identities to explain the mechanism whereby he shows how a sudden stop in capital flows is likely to cause financial and balance of payments crises². In the case of a non-monetary economy, a period of a surge in capital flows also reflects high current account deficits. When a sudden stop of capital flows hits the economy, the current account deficit is suddenly contracted. The consequences of the sudden stop in capital flows are contingent upon how complicated it is to accommodate this decline in the current account. Although the stop in capital could be adjusted by a lower demand in the tradable sector goods without affecting the output. Calvo (1998) contends that it is unlikely, what is more probable to be the case is that at the prevailing exchange rate, there will be a reduction in the demand for tradables together with a larger reduction in the demand for non-tradables. This in effect creates an increase in the exchange rate, given the deterioration of the prices of the non-tradable goods with respect to the tradable goods. This sudden and unexpected change in relative prices will affect those firms in the non-tradable goods sector, in particular the loans that were granted previous to the shock, under the prospect of stability of the preceding relative prices, could under these new circumstances become non-performing loans and the risk of "across-the-board bankruptcies" emerges (Calvo 1998, p.36-8).

For the extension of the case for the monetary economy, the above arguments are still applicable however, the main distinction is that a sudden stop of capital inflows could be compensated by a loss of international reserves³. The contention of the author is that if it does not use its reserves, the adjustment to the economy would be the same as the non-monetary

² Calvo (1998) defines the following identities for the non-monetary economy: $KI = CAD$, where they stand respectively for capital inflows and current account deficit. The second identity used is: $CAD = Z - GNP = Z^* - GDP - NFTA$, where they stand respectively for current account deficit, aggregate demand, gross national product, demand for tradable goods, gross domestic product, and net factor transfers abroad (Calvo 1998, p.37-8).

³ Calvo (1998) defines the following identities for the monetary economy: $KI = CAD + RA$, where RA stands for accumulation of international reserves (Calvo 1998, p.42).

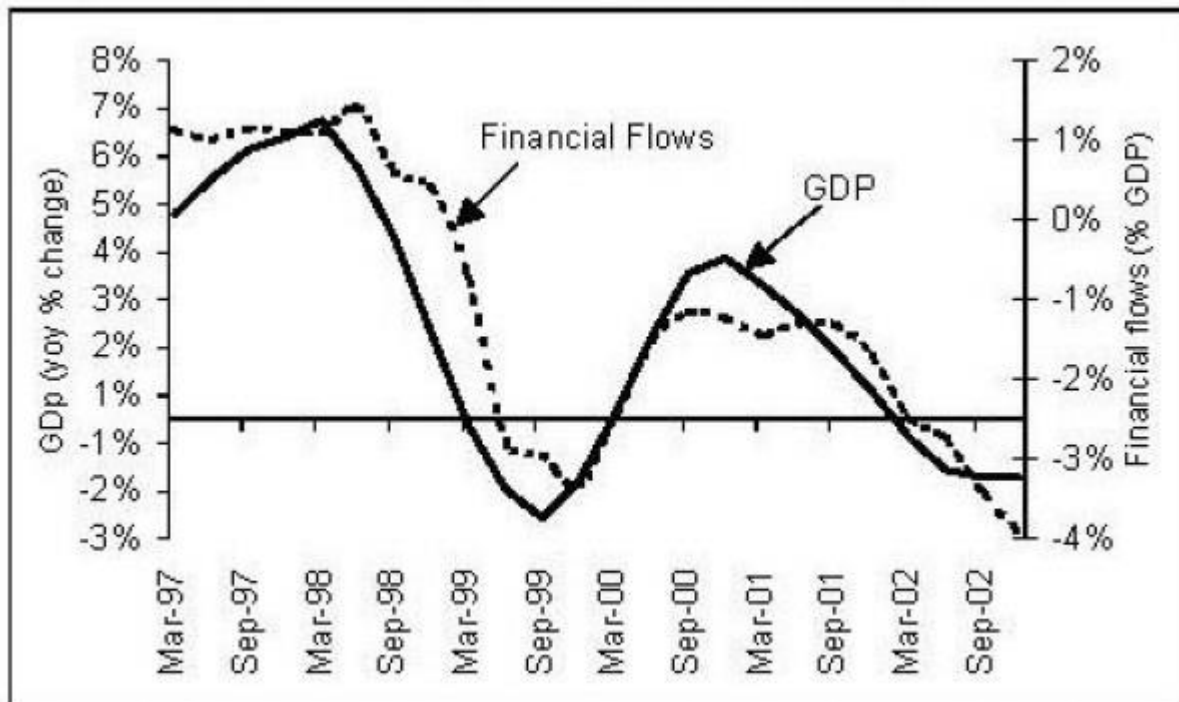
case, however, he argues that if the central bank were to realize the proper mechanics to release the amounts of reserves necessary to cushion the decrease in the current account it could make the adjustment smoother. An example provided by the scholar is to provide loans to those firms who were affected by the sudden stop of international credit, however he mentions it is not a feat that is easy to achieve (Calvo 1998, p.42-3).

Emerging countries which carry a high level of liability dollarization could suffer a serious aftermath as a result of a sudden stop, in particular if they face credit limits which could threaten their output volume and make it difficult to service their existing debt stock (Bordo 2007, p.3). If there is a significant cumulative level of firms unable to comply with their debt payments, there is a risk of a banking crisis if the sector faces a lack of liquidity and a deteriorating exchange rate. This affliction of the private sector will inevitably distress the tax base of the government, which could potentially compromise its fiscal solvency and in the most extreme of circumstances could even lead to a sovereign debt default (Bordo 2007, p.6).

Calvo and Talvi (2005) review the impact of the Russian crisis in 1998 on the flow of capital to Emerging Markets, in particular for Latin American countries. The crisis in Russia at this time had a significant domino effect which led a number of Emerging Markets into financial crises. The authors contend that the Russian crisis was an important factor for the sluggish growth and incidence of crises in the Latin American region during the ending of the 1990's decade and the beginning of the following. After the Russian crisis hit, there was an increase in interest rates not seen before and affecting the entire range of Emerging Market Economies, which had the impact of a sudden stop of capital flows to the region which was systemic (Calvo and Talvi 2005, p.2-3). Figure 2 below shows the sharp and systemic drop in capital flows to the region at the time.

Figure 2. LAC-7 External Financial Flows and Economic Growth*

(GDP in yoy % changes, financial flows in % of GDP, last 4Q)



*LAC-7 is the simple average of the seven major Latin American countries, (Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela). These countries represent 93% of Latin America's GDP.⁴

Source: Calvo and Talvi 2005, p.3.

The fundamental argument these scholars make is that a sudden stop of such magnitude, which has its roots in the "central financial markets," to the entire spectrum of Emerging Markets will have an intensified shock if at the domestic level it is coupled with important financial weaknesses (Calvo and Talvi 2005, p.3-4).

Having taken a look at the flow risks of capital flows, the next section turns to the discussion of the financial, structural weaknesses in the balance sheets of Emerging Market Economies which makes them particularly vulnerable to external shocks such as these cases of sudden stops.

⁴ At the time of the publication of this paper by Calvo and Talvi (2005), which includes information up to 2002.

3.3 Currency Mismatches

Many Emerging Market economies, including the regions of Latin America and Asia, were participants of the “*growth-cum-debt*” strategy advised by the international financial institutions as part of the path towards development. Part of the model inherently implied accumulating external debt in hard currency, the mayor crises both regions suffered in the 1980’s and 1990’s respectively made this strategy questionable, in particular considering that although the goal was to utilize the borrowed capital to expand and grow, their ability to service their debt was burdened with the vulnerability of earning their income in national currency and having to make their payments in foreign currency, which makes any fluctuations towards depreciation of the domestic currency a high risk for meeting these commitments (Metzger 2001, p.191-5).

Financial market participants, make transactions both in domestic and foreign currency. When looking at an economic agent’s balance sheet, they may have different compositions of currency within their assets and liabilities. The term “currency mismatch” is used to describe how much of an exposure to exchange rate fluctuations an economic agent’s “net worth or net income” have. Goldstein and Turner (2004) discuss the stock and flow positions of currency mismatches, the former refers to how sensible the balance sheet is to exchange rate fluctuations and the latter refers to the same sensibility of the income statement. They ascertain the extent of a currency mismatch is larger, the greater the exposure of these two aspects to variations are to the exchange rate (Goldstein and Turner 2004, p.1). When looking at currency mismatching from a net worth perspective, when this incidence happens on a substantial measure, the financing in foreign currency of activities in emerging markets that receive local currency, often there is a limited amount of assets in foreign currency to counterbalance the gap. If there is a case of a significant depreciation, the net worth of economic agents is destroyed, which results in an upsurge of financial insolvency and crisis, with a significant drop in economic growth (Goldstein and Turner 2004, p.2).

The contending view to Goldstein and Turner (2004) is that of the original sin school by Eichengreen, Hausmann and Panizza (2007). They view currency mismatches as “differences in the values of the foreign currency denominated assets and liabilities on the balance sheets of households, firms, the government and the economy as a whole.” They contend that original sin contributes to the possibility of an emerging economy to incur in currency

mismatching, although borrowing in foreign currency does not imply automatically a currency mismatch, this depends on the management of the authorities. How far the net external debt and the exposure to an adverse wealth effect caused by a depreciation of the domestic currency could be for example cushioned by international reserve accumulation (Eichengreen et al. 2007, p.130-2). These scholars suggest that there are a number of arguments that make it challenging for emerging market economies to borrow in their own currencies which is beyond their control, they view this as inevitable. International investors are averse to diversify their portfolios with softer currencies, the main arguments that support this view is the risk of depreciation and inflation manipulation by the governments of these emerging countries to erode the debt in real terms (Eichengreen et al. 2007, p.123-6). Contributing to the limitation of international investors' portfolios to only a limited set of currencies and the preference for the chosen set of currencies is the size of the country and the transaction costs of the inclusion of more currencies bring marginal benefits that are insignificant. A small country will not be an appealing choice for diversification for an international investor (Eichengreen et al. 2007, p.157-8). Domestic economic agents also contribute to increasing the level of dollar liabilities because when there are fluctuations in the exchange rate, the central bank tends to make adjustments to the domestic interest rate. The perception of an unstable domestic interest rate also makes domestic clients prone to indebt themselves in foreign currency (Eichengreen et al. 2002, p.14).

Currency mismatches at an aggregate level may depend on the management of the authorities, it is unlikely that they will have enough international reserves to offset completely the exposure, which would defeat the purpose of foreign currency borrowing in terms of costs anyway. The main risk that emerging markets when carrying a net external debt in foreign currency and incurring in an overall currency mismatch is the vulnerability to sharp and adverse depreciation of the national currency and their incomes are denominated in the latter, if the currency is not able to recover it may even lead them to insolvency (Eichengreen et al. 2007, p.123-131).

Currency mismatches have been an important link to crises, such as the Asian case in 1997. Table 1 below shows how several of the countries who suffered in the Asian crisis had currency mismatches that were already relatively high or were increasing in the lead-in to the

crisis in 1997. The authors use two proxies as indicators for the currency mismatch, the first one is “the ratio of short-term external debt to international reserves” and the second one is “the ratio of broad monetary liabilities, M2, to international reserves.” When the crisis broke out, most of these countries suffered massive and unparalleled deteriorations in their economic growth (Goldstein and Turner 2004, p.11-2). Furman and Stiglitz (1998) argue that the importance of this indicator (ratio of short-term debt to reserves), since the Asian crisis, as a predictor of the financial turmoil in this region in 1997 is “remarkable” (Furman and Stiglitz 1998, p.50-1). Allen, Rosenberg, Keller, Setser and Roubini (2002) review the financial crises of the emerging market economies during the decade of 1990, they arrive at the conclusion that in most cases during this incidence of crises, the exposure of their balance sheets to currency mismatches was prominent (Allen et al. 2002, p.17).

Table 1. Proxies for currency mismatches before the Asian crisis 1995-1999 (percent of foreign exchange reserves)

Country	Short-term external debt					M2				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Indonesia	208	197	224	113	75	719	661	470	318	345
Korea	184	222	330	76	59	1,498	1,541	1,548	1,022	802
Malaysia	35	44	75	39	27	323	354	353	288	281
Thailand	124	125	152	88	45	371	391	358	457	383
<i>Memorandum:</i>										
Latin America	118	109	105	102	98	426	393	407	431	452

M2= broad money liabilities

Source: Goldstein and Turner 2004, p.12.

3.4 Maturity Mismatches

The issue of maturity mismatching in the balance sheets of the economic agents of emerging market economies carries with it the inherent threat of interest rate risk. The argument as to the reason many countries, in particular emerging markets, borrow in short terms instead of longer maturities is because it is considered to be less expensive. For debts that have longer terms, the international capital market lenders charge higher risk premiums. The arguments that back this view rely on the fact that governments have fixed terms and as such, they will continue to change. Even if a current government is trustworthy in the eyes of international

investors, there still exists the risk that the next elected government may not be. Notions such as the solvency of corporations and private agents depend also on government policy, therefore this risk premium is charged both to private and public agents (Williamson 2005, p.62). Scholars in support of this argument include Broner, Lorenzoni and Schmukler (2013) who created a model in which they show that risk premiums are higher the longer the term of the bond and refer to it as the “term premium” of the bond (Broner et al. 2013, p.69). Jeanne (2009) argues that governments choose to borrow short-term because this represents a “commitment device” that would keep their spending to levels they will be able to service (Jeanne 2009, p.2135).

Williamson (2005) argues that when international markets have higher interest premiums than average for long-term for the country, the government would rather borrow for the time being short-term debt with lower interest rates with the expectation of refinancing with a long-term obligation when interest rates are back to normal. A government that behaves in this manner would be taking the chance that they will be able to constantly roll-over the debt of a long-term project by always taking on short-term obligations (Williamson 2005, p.62-3).

The concrete risk of maturity mismatching lies in the deterioration of the maturity structure of the liability side of the balance sheet of the economic agents of an emerging market economy. The main risk with respect to capital inflows is that they are vulnerable to accumulating disproportionate short-term debt that will rapidly mature versus their assets. This is particularly difficult when the assets they possess lack liquidity at the international level and therefore there is an increase of country confidence risk which may lead to financial turmoil. If there is any shock to the expectations of international investors, this could create depreciation pressures. Circumstances such as this could lead the country into a self-fulfilling liquidity crisis if there is capital flight and international credit is suspended (Rodrik and Velasco 2000, p.2).

Rodrick and Velasco (2000) create a model that advances the theory of how an excess of short-term liabilities exposes the countries that borrow to abrupt changes in the expectations of lenders, leading to a self-fulfilling crisis. Their work was inspired by the crises in Emerging Markets of the 1990's, which all had in common the fact that they accumulated

ratios of short-term foreign debt to reserves. Each of the countries analyzed by these scholars had a mixture of sizeable short-term liabilities to insufficient liquid international assets which exposed them to confidence crisis and capital flow turnaround (Rodrick and Velasco 2000, p.1)⁵.

Table 2 below summarizes the discussion of the chapter above, it distinguishes the origin, transmission channel and consequence for each one of the risks detailed above. The first two risks, exchange rate pressures and sudden stops have to do with the flow aspect of the vulnerability of capital flows; the second two risks have to do with the balance sheet effects that can buildup systemic risk in the financial system because of extraordinary access to capital flows, in particular during episodes of bonanza.

Table 2. Summary of the Origins, Transmission Channels and Consequences of the Risks of Capital Flows for Emerging Market Economies

Risk	Origin	Transmission Channel	Consequence
Exchange Rate Pressures	Openness of Capital Account	Capital Inflows	1. Real exchange rate appreciation leads to wealth effects 2. Overvaluation and loss of competitiveness
Sudden Stops	External shock which changes investors' risk preferences	Sudden stop of flows, could include net outflows	Limit/loss of access to credit in international capital markets
Currency Mismatches	Foreign currency borrowing	Real exchange rate depreciation	Negative wealth effect of depreciation leads to loss of value of internal income in domestic currency versus foreign currency
Maturity Mismatches	Short-term borrowing	Increase in country risk premiums	Liquidity crisis when international capital market access is restricted or becomes too expensive

Source: Author's own creation

⁵ The crises referred to by Rodrick and Velasco (2000) were: Mexico (1995), Russia (1998), Brazil (1999), which consisted mainly of sovereign debt; and the Asian crisis countries of Indonesia, Korea, and Thailand (1997) (Rodrick and Velasco 2000, p.1).

4. Proposals for Capital Flow Management

The previous chapter and summary table gave an overview of the main risks that capital flows pose to Emerging Market Economies, the literature has put forth a wide variety of proposals for policy prescriptions as to how to deal with these risks within the context of an Emerging Market. The following survey of the policy options for these economies highlights the importance of countercyclicality and intermediate regime solutions.

4.1 Capital Controls

Capital inflows and the issues they bring about by the boom-bust cycle to emerging markets could be eliminated completely if they chose a capital control regime, isolating themselves from the international capital markets, given these controls are “comprehensive and completely effective.” If in turn, there exists perfect capital mobility in an economy, they let go of control of the exchange rate and their income levels. One of the arguments against the option of having capital controls is that transactions that would be of benefit to the country would be deterred, having to first go through some kind of governmental approval process. Additionally, having to always go through a bureaucratic process when a transaction is requested to take place does not rule out the possibility of corruption within the administration, given that information is imperfect (Williamson 2005, p.97-8).

Capital controls in the more traditional sense are still in place for many large emerging market countries such as China and India, the aim of these type of controls are to segment the domestic from the international capital markets. They utilize rules that clearly segregate residents from non-residents, as well as distinguish within the residents of the country the corporate and non-corporate agents. Examples of such capital controls include: prohibition of foreign currency borrowing for the domestic economic agents, with very few exceptions such as investments that are long-term and financing for trade for some specific firms, and even there are limitations to the amount that is transacted. It is also prohibited for external residents to hold assets or borrow in the domestic currency, as in the previous case some exceptions apply. Additionally, it is forbidden for national banks to hold deposits by local agents in foreign currency or to lend in foreign currency (Ocampo 2008, p.79).

On the analysis moving forward, the use of complete capital controls, implying a more isolated stance from capital markets will not be taken into account, as the main purpose of this paper is to analyze the context of Emerging Market Economies which tend to have more open capital accounts and thus require more mechanisms which are more flexible but still effective in their ability to tame excessive capital flow cycles, such as the capital account regulations reviewed below.

4.2 Capital Account Regulations

In terms of capital management tools, Ocampo (2003, 2008) puts forth the proposal for capital account regulations, which is a less restrictive option than capital controls. There are other choices of more “market-friendly capital controls” in which the authorities are able to have more autonomy policy wise and moderate capital inflow surges (Williamson 2005, p.97-8). During episodes of capital inflow surges, the economies of many emerging market economies are susceptible to buildup of risks which primarily are dependent upon the level of debt, both public and private, as well as the structure of their balance sheets in terms of maturity and currency mismatches. This scholar argues that capital account regulations have two significant functions, a macroeconomic policy tool to aid as a countercyclical force against the cycle and as a “liability policy” purposed to incentivize an enhancement of the external debt profiles of the private sector (Ocampo 2008, p.78).

The main purpose of capital account regulations as a macroeconomic tool is to tackle the source of the boom-bust cycle, volatile capital flows. These regulations, when applied effectively, are able to deliver some space to “lean against the wind” when there are episodes of financial upswings. This is accomplished by adopting a monetary policy which is contractionary, or appreciation pressures which are reduced (or a combination of both); it is also possible these measures are able to “reduce or eliminate the quasi-fiscal costs of foreign exchange reserve accumulation.” When financial downswing episodes hit, they give enough “breathing space” to take on a monetary policy which is expansionary. The kind of capital account regulations needed should provide and enhance the capacity of the authorities to use both a countercyclical monetary policy and an “active exchange rate policy” (Ocampo 2008, p.78).

The view of capital account regulations as an “liability policy” instrument, stresses the importance of assessing the structure of the liabilities instead of the national balance sheets. This is imperative because in times of financial turmoil, the prominent role when it comes to liquidity limitations is played by liquid assets such as reserves and the aggregate liability structure. The use of capital account regulations is a recognition that international capital markets are inclined to reward solid international debt profiles. When uncertainty hits, “the market responds to *gross* (rather than merely net) financing requirements, which means that the rollover of short-term liabilities is not financially neutral.” When faced with difficult conditions, a profile with longer-term maturities has an important effect in reducing liquidity risks domestically. This implies that during episodes of capital inflow surges, national economic policy should be focused on the mechanisms that allow an enhanced maturity structure of liabilities, both domestic and external of all sectors in the economy. The obvious example would be to promote foreign direct investment over portfolio flows in terms of equity investments, the former is less volatile, and the latter is costlier (Ocampo 2008, p.78).

Capital market regulations, just as capital controls, aim to segment domestic and international capital markets, however they are typically used by emerging market countries which have a higher degree of integration to the international capital markets. There are many kinds of policies which can be applied and are also combined. An example of this type of regulation includes a price-based tax that to inflows and outflows, which have the benefit of not being discretionary in nature (Ocampo 2008, p.79-80).

4.3 Exchange Rate Policy

Emerging market economies often resort to use “real exchange rate targeting” as an instrument of macroeconomic management (Ocampo 2008, p.71). Monetary autonomy depends on the exchange regime that the country follows, and the role of the latter in emerging market economies is challenged by their conflicting needs, which are a demand for stability versus flexibility. Volatile capital flows intensify these necessities. The need for stability is required by the export sector, also it is important as it contributes to the stability in prices and to prevent adverse wealth effects that sudden shifts in the exchange rate may cause. The need for flexibility is based on the accommodating demands of shocks to the capital account and to manage trade. The domestic authorities should have a tendency towards selecting an exchange rate regime which is able to meet these two contending

demands contingent upon their precise domestic and external conditions, the specific one will of course depend on the particular characteristics and preferences that provide the appropriate degree of stability versus flexibility. The components of intermediate exchange rate regimes seem to provide authorities with a suitable degree of flexibility to be able to accommodate the multiplicity of goals they tackle. Intermediate regimes are frequently coupled with capital controls and by pursuing a “real exchange rate targeting” it contributes as well to avoid volatility in the country’s output as it strives to maintain the exchange rate as stable as possible (Ocampo 2008, p.69-73).

Ocampo (2008) argues that polar exchange rate regimes are not appropriate for emerging economies, as they do not provide enough flexibility to deal with the contending demands of these countries. He contends against the main argument against intermediate regimes which is that they are not effective in managing the conflicting demands explained earlier. Nevertheless, an exchange rate regime which is fixed, hard pegs for example, carry the elevated cost of eliminating monetary policy. The effects of this can aid in an accentuated business cycle and a rate of growth with is inevitably lower. A potential benefit used to defend such fixed regimes comes from the idea that they contribute to avoiding speculation, but as the case of Argentina showed in 1998-2001 this is not always the case. When looking at the opposite kind of regime, flexible exchange rates, the volatility which is intrinsic to them has heavy costs in terms of trade management and the potential benefit of an autonomous monetary policy able to take on a countercyclical effect is questionable. An example of this challenge is the matter that during upswings, the aggregate demand increase creates exchange rate appreciation pressures while at the same time the interest rate is pressured downwards. If the authorities attempt to create a counter effect with an increase in interest rates this will promote further capital inflows and worsen the appreciation pressures on the exchange rate. In turn, during downswings the effect works in the opposite direction which could give rise to capital outflows. Thus, the countercyclicality of monetary policy that is supposed to accompany flexible exchange rates is not wholly successful (Ocampo 2008, p.69-73).

In terms of policy intervention, during episodes of capital flow surges, the central bank follows a recourse of absorbing the excess volume of foreign currency and have large sales

of the domestic currency, in the attempt to dampen the volatility on the exchange rate. Some authorities might resort to also increase the reserve requirements and tax transactions to offset the buildup of international reserves (Reinhart and Reinhart 2008, p.1). However, many emerging market economies choose to build up their volume of international reserves at times of capital flow surges as a precaution during the times of bounty to be ready in terms of liquidity levels when scarcity hits. Reinhart and Reinhart show that the habit of international reserve accumulation in emerging market economies is not new and has been documented by these scholars since 1960. This practice confirms the averseness of these economies to allow appreciation pressures to the exchange rate, which tend to increase their propensity to “lean against the wind” when capital inflow surges occur (Reinhart and Reinhart 2008, p.42).

In some emerging market economies, the central banks attempt to weaken the pressure for the real exchange rate to appreciate, particularly in the short-run, by intervening in the foreign exchange market and purchasing the excess supply of foreign currency. Often the authorities will sterilize these capital inflows to avoid inflation, which tends to prolong the interest rate differential between domestic and international markets and increases the fiscal burden (Calvo et al. 1993, p.110).

Calvo and Reinhart (2002) have shown that the “fear of floating” leads many emerging market economies who declare to have a floating exchange rate regime do not actually have a purely floating mechanism and indeed engage frequently in foreign exchange market interventions to maintain the stability of their domestic currency (Calvo and Reinhart 2000, p.404-5). Williamson (2005) attributes one of the reasonings behind this behavior to currency mismatches, if a country is burdened with high liability dollarization and improvement towards reducing it are not feasible, then they will keep maintaining the exchange rate as the “dominant nominal anchor” in their economies (Goldstein and Turner 2004, p.18). Williamson (2005) argues that the exchange rate regime chosen should be one which excludes commitments that will prevent sudden depreciations when there is a possibility of a crisis. The regime should also have a degree of variation such as to give sufficient incentive to avert currency mismatches or decrease them as much as possible. The exchange rate policy should also prevent overvaluation, which this has an important negative effect to the export sector and generates vulnerability. The author argues that the exchange rate regime that

which is able to accomplish all of the above tasks is managed floating, “where the management is informed by a clear view by the authorities of the trend path of the exchange rate” (Williamson 2005, p.94).

4.4 Monetary Policy

Kaminsky, Reinhart and Vegh (2004) perform an exercise where they define two types of exchange rate regimes, fixed and flexible. In terms of the flexible exchange rate, they consider all those regimes which are permitted to have some flexibility, such as clean or dirty floats, the latter being the more common kind. The short-term interest rate is considered a policy instrument, to be common to both kinds of regimes. The theoretical assumption that supports the short-term interest rate as a monetary policy instrument for fixed exchange rates regimes, “is that some imperfect substitution exists between domestic and foreign assets.” In turn, for the case of flexible exchange rates, the short-term exchange rate is a policy instrument in the sense that variations in the money supply will promptly impact interest rates (Kaminsky et al. 2004, p.20). Thus, a procyclical monetary policy would be signaled by increases in the “policy controlled short-term interest rate” in bad times and by reductions of it during good times, which implies a negative correlation between this variable and the business cycle (Kaminsky et al. 2004, p.21).

Another policy instrument which is used under both fixed and flexible exchange rate regimes is the domestic credit of the central bank and its rate of growth. How much the variations in the monetary base because of changes in domestic credit and thus its influence on interest rates are dependent upon the type of regime of exchange rate chosen. When the exchange rate is fixed and there the substitutability of domestic and foreign assets is perfect, the alteration in the domestic credit will be perfectly offset by an opposite variation in international reserves. If the substitution of the assets is imperfect, inevitably the monetary base will be affected by the growth in domestic credit. The similar effect takes place when the exchange rate regime is a dirty float given that variations in international reserves are not completely offsetting the alterations in the domestic credit. Within this setting, countercyclical monetary policy would take the form of reductions in the rate of growth of the domestic credit during episodes of upswings and the opposite action during episodes of downswings. Procyclicality would take the form of significant growth of the rate of domestic credit during upswings and the reverse relation during downswings. Acyclical policy implies

no correlation between the domestic credit rate of growth during the business cycle. In sum, the variations of the rate of growth of domestic credit are a reflection of the counter movements of the short-term interest rate, reducing domestic credit following with increases in short-term interest rates and in the opposite case, increasing credit will follow with reductions in short-term interest rates (Kaminsky et al. 2004, p.22-3).

Interest rates also have an important role in emerging market economies in terms of dealing with the risk of speculation. The stance in terms of monetary policy in emerging markets tends to lead them to procyclical behavior by increases in short-term interest rates as a signaling device to increase the credibility in external markets and speculators of the ability of the central bank is committed to defending its exchange rate. The increase of the rate of interest raises the cost of speculation and thus discourages speculators. If the regime of a country is fixed and speculators take on borrowing in domestic currency to speculate against the regime, the raising of the short-term interest rates will cause this borrowing to be highly costly (Drazen 2003, p.37-8).

Goldstein and Turner (2004) argue that monetary policy when dealing with currency mismatches in emerging markets has a questionable efficacy if the mismatches are large and a crisis is on the rise. If the amount of the debt in foreign currency is mostly unhedged during a currency crisis, while having firms with very high leverage ratios the choices in terms of monetary policy are challenging. Any lowering of the interest rates could bring about a more pronounced depreciation and causing bankruptcies across firms and bank insolvencies alike. In turn, if the interest rate increases significantly to back the domestic currency, the cost of borrowing for firms is raised as well and this will cause decreases in aggregate demand as well, leading the economy into a likely recession. In such crisis situations, the monetary policy options available are will inevitably cause drops in net worth so pronounced as to trigger extensive bankruptcies. Thus, “monetary policy becomes severely constrained,” a case in point was the Asian crisis and their vast currency mismatches (Goldstein and Turner 2004, p.16-8).

Williamson (2005) views that the role of monetary policy should be countercyclical. In emerging market economies, a key aspect is to preserve the confidence of international financial markets and therefore the path towards achieving this goal and also being able to

enact a countercyclical monetary policy is to implement a framework of inflation targeting which is clear (Williamson 2005, p.94).

4.5 Fiscal Policy

Fiscal policy when used as a countercyclical tool can contribute to stability and smoothing the boom-bust cycle that comes with volatile capital flows. As shown by Kaminsky et al. (2004), the stance of fiscal policy in emerging markets is traditionally procyclical. This stems from the fact that the business cycle usually brings about volatile revenues for the government as GDP suffers fluctuations. The implication from this is that during upswings, transitory revenues will increase government spending which will be cut during downswings to meet short-term obligations such as servicing the sovereign debt (Ocampo 2008, p.74).

To stabilize government spending throughout the business cycle, fiscal stabilization funds could serve as a useful device that contributes to making fiscal policy more countercyclical. Emerging markets that have commodities that have an important effect on fiscal revenues, examples of such fiscal stabilization funds are those of Chile for copper revenues and Colombia for coffee revenues (Ocampo 2008, p.76).

Another proposal for fiscal policy to take on a more countercyclical stance is a mechanism of flexible tax rates, which would serve to discourage high spending cycles in particular from the private sector. An example of these kind of flexible tax rates would be to target those sectors which are responsible for the spending boom, this could also take the form of a provisional rise on Value-Added Tax during the episodes of spending surges (Ocampo 2008, p.76).

Williamson (2005) argues that fiscal policy should have as a priority to reduce the debt stock to a level that permits the flexibility of expansion by fiscal spending when facing a recession. As an example, Artana, Lopez Murphy and Navajas (2003) contend that for the region of Latin America a manageable debt to GDP ratio would be of around thirty percent (Artana et al. 2003, p.81). If the debt ratios are larger, it is challenging for the emerging economy to apply any kind of countercyclical fiscal policy. In turn, if the debt level is gradually decreasing, it becomes possible for these countries to reduce the interest payment levels. The primary result from this type of action is that it will liberate fiscal resources to be spent on investment and social projects (Williamson 2005, p.94). It is important that fiscal reforms

take place to ensure that the budget is sustainable, the main indication of fiscal responsibility would be adopting targets of “public sector deficit and/or maximum debt to GDP ratios” (Ocampo 2008, p.75).

4.6 Prudential Measures

Prudential measures and supervision of the financial sector is key in complementing the efforts to smooth out boom-bust cycles. The supervision of the banking sector should be done by publicly, habitually banks have the support of the state in terms of securing a percentage of deposits and as such this poses the attraction of an increase in the level of risks taken by bankers, which are in the quest for the highest level of return. However, there needs to be proper regulation in place to prevent the banking sector from exceeding acceptable risk levels by making specific requirements to make the solvency of banks is not at risk. Examples of this kind of regulation include: minimum capital requirements, the write-off of non-performing loans, avoiding crony capitalism and increasing diversification of risks (Williamson 2005, p.95).

Williamson (2005) suggests three mechanisms through which the boom-bust cycle can be softened by means of banking regulations. The first has to deal with the provisioning of domestic banks, it must take the form of “forward-looking” provisioning. The benefit to this practice is that when bad economic times hit, and there are significant increases in non-performing loans, banks will count with sufficient liquidity when credit starts to crunch. Also, it will lessen the incentive of borrowing in the international capital market when the amounts of capital are abundant by making it more expensive for them, in terms of increasing their reserve requirements. Secondly, this scholar suggests on deterring the incentives for banks to borrow in foreign currency, for example by requiring a higher level of reserves for these types of loans. As a complementary action, he suggests that the banks report the level of currency mismatches derived from these foreign currency loans. Finally, Williamson (2005) suggests discouraging further currency mismatching by the banks themselves, by borrowing abroad in external currencies and then making domestic loans denominated in the national currency. Supervision of this kind, he contends, could become prudent enough to lessen the need of regular capital controls in the first place (Williamson 2005, p.95).

Ocampo (2008) argues that usually in emerging markets, too many risks are taken during episodes of financial boom and therefore leads them to an upsurge in lending which is usually accompanied by a degree of both maturity and currency mismatches. This is a characteristic of the balance sheet of emerging market economies, these issues are aggravated if there is there is deficient risk assessment of the domestic financial intermediaries, worsened by insufficient prudential regulation and supervision of the national financial system (Ocampo 2008, p.82).

Additional arguments by this scholar in support of prudential regulations have to do with the procyclicality of typical regulation such as Basel I and II, therefore he contends that a countercyclical mechanism should be included as well. The more traditional regulation practices focus on loan loss provisions which are taken when these become non-performing making it a pro-cyclical exercise, which is inherently linked to the business cycle. A countercyclical element is forward looking provisions. This kind of provisioning takes into account the entire business cycle in its risk valuation, therefore the provisions for the loans are taken at the moment they are disbursed basing the provision on the expected losses. The evaluation of risk is done homogenously for loans which are in similar credit categories. The main difference is that provision is taken when the loan is granted rather than when it falls into delinquency. This scheme of provisioning is a more effective tool in smoothing out the business cycle rather than capital adequacy ratios. The latter should be a mechanism focused on the long-term solvency of financial institutions rather than on managing the business cycle. There should also be a close monitoring of the overvaluation that asset price bubbles might have on loan collaterals, particularly when the prices of these assets are very volatile. A remediation for this type of issue would be to limit “loan to value ratios” and also adopt practices to adjust valuations on collaterals based on changes in prices driven by the business cycle (Ocampo 2008, p.83-5).

In addition to the practice of forward looking provisioning, this should be complemented by regulation that tackles the level of currency and maturity mismatches. The case of non-financial firms in the sector of non-tradables have to be monitored closely as they are exposed to currency risks, which could potentially present risks to the banking sector. A proposal to dealing with these kind of credit operations should be to regulate them by increase the

required loan loss reserve provisions and also increasing the risk weighting of these loans. On a more severe note, they could limit the foreign currency denominated loans non-financial firms can take on if they do not perceive revenues in foreign currency (Ocampo 2008, p.84-5).

4.7 Assessment of the Trade-Offs (Costs vs Benefits) of Capital Flow Management in Emerging Markets

There are important trade-offs when it comes to applying the capital management measures that are proposed in this chapter. They all bring benefits as well as costs and intervene at different points of the cycle, table 3 below summarizes these trade-offs and the explanations follow below.

Table 3. Summary of the Trade-Offs of the Capital Flow Measure Policies

Risk	Capital Flow Measure	Intervention Point	Trade-off
Exchange Rate Pressures	Capital Controls	Origin	Benefit: Stable capital account Cost: Loss of potential productive projects, administrative costs
	CARs	Transmission Channel	Benefit: Reduced appreciation pressures Cost: Increase in international reserves, limits on potential projects
	Exchange Rate Policy	Consequence	Benefit: Intermediate regimes provide more flexibility and stability Cost: Holding a high number of reserves is costly they have lower yields
	Monetary Policy	Consequence	Benefit: Defense against speculation Cost: Higher fiscal cost
Sudden Stops	Capital Controls	Origin	Benefit: Stable capital account Cost: Loss of potential productive projects, administrative costs
	CARs	Transmission Channel	Benefit: More stable currency leads to better perception by investors Cost: Increase in international reserves, limits on potential projects
	Fiscal Policy	Consequence	Benefit: Countercyclicality, augmenting available liquidity Cost: Reduces revenues of productive sector could hinder growth
Currency Mismatches	Capital Controls	Origin	Benefit: Stable capital account Cost: Loss of potential productive projects, administrative costs
	Capital Account Regulations	Transmission Channel	Benefit: Reduces appreciation pressures and potential currency mismatches Cost: Increase in international reserves, limits on potential projects
	Prudential Measures	Transmission Channel	Benefit: Avoids currency mismatches Cost: Forward-looking provisioning and higher reserve requirements leads to decreased lending
	Exchange Rate Policy	Consequence	Benefit: Stable currency leads to lessens negative wealth effects of currency mismatches Cost: Holding a high number of reserves is costly they have lower yields
Maturity Mismatches	Capital Controls	Origin	Benefit: Stable capital account Cost: Loss of potential productive projects, administrative costs
	Capital Account Regulations	Transmission Channel	Benefit: Enhanced maturity profile Cost: Increase in international reserves, limits on potential projects
	Prudential Measures	Transmission Channel	Benefit: Improve maturity structure and solvency Cost: Forward-looking provisioning and higher reserve requirements leads to decreased lending

Source: Author's own creation

Capital controls would intervene at the origin, eliminating the root cause of the boom-bust cycle because no capital flows would be able to enter the country freely, assuming they are perfectly effective and no risk of corruption. The benefit of such control would be the complete control of and a more stable capital account. In terms of costs, it would be shutting down the possibility of funding potentially very constructive projects for the country and in case the capital is allowed to come in by administrative approval, this is an inherent cost of the process which could be avoided. All four risks would be prevented as no disruptive distortions in terms of capital inflows would enter the country.

Capital account regulations would be helpful during the transmission channel phase of the cycle, by targeting to influence the volume of the capital flows themselves. The main benefits are that by limiting the amount of flows it aids in terms of reducing appreciation pressures of the exchange rate as well as to influence over the maturity structure of the capital flows that come in by incentivizing that longer-term flows enter the country, which would improve its debt profile. This also reduces the chances of sudden stops, as better debt profiles makes investors perceive the country as relatively more financially sound. This also aids in terms of the currency mismatching problem by avoiding excessive foreign currency denominated debt in terms reducing their volume, as well the benefits of less exchange rate pressure and sounder debt profiles will make the existing currency mismatches on the balance sheets less susceptible to crisis. The cost is that the country will not be able to take full advantage of the entire amount of financing that might be available to them in times of excess liquidity at the international level, therefore not all profitable projects (including riskier ones) would be able to receive financing.

Exchange rate policy has the main advantage of dealing with exchange rate pressures, this would mitigate the consequence of excess capital inflows. As exposed in the section on the exchange rate policy, it is important for the setting of Emerging Market Economies for this to usually be an intermediate regime, which would provide them both with flexibility and stability of the currency to adjust to shocks, which aids in particular in negative wealth effects and price stability. By keeping the currency stable there is also an important benefit of the high risk of currency mismatches in the case of a depreciation, as well as prevent overvaluation. This kind of intermediate regimes and Emerging Markets in general tend to

hold a higher level of international reserves, here the important benefit of holding a high level of reserves is that in the case of crises, it helps them prepare in terms of liquidity to face any adverse speculation against their domestic currency. In terms of the costs, the buildup of international reserves carry high costs since they have lower yields than deposits. Another cost is that they increase the fiscal burden by keeping domestic interest rates usually higher.

Monetary policy and one of its main instruments is the short-term interest rate. Its use would come in in the consequence part of the cycle. One of the main benefits of using this policy variable, is that it is possible to defend the domestic currency against speculation. It also aids in limiting the growth of the domestic credit, therefore avoiding asset bubbles. The cost of this is that it burdens the fiscal budget by the interest rate increase.

Fiscal policy should aim to be used a countercyclical macroeconomic policy tool. When there is a boom, it should be used during this consequence part of the cycle. Since most of the Emerging Market Economies suffer from fluctuations in GDP during the cycle and therefore their government revenues are fluctuating as well, the use of specific tools in place to smooth out the effects of the boom-bust cycle by enabling a countercyclical force is the main benefit. Improving the debt to GDP ratio would be another important way in which these economies would benefit by having enough space in terms of liberating resources previously used for the debt service and use them instead as part of a countercyclical tool. The main cost to this kind of policy is that they would take away part of the revenue of the private sector to safeguard against crisis, which could have an impact in the rate of the growth of the private productive sector.

Prudential measures should take place during the transmission channel part of the cycle, as their work should aim to be to prevent the adverse balance sheet effects of capital flows. The principal benefit of this type of policy is to improve the solvency of banks and avoid currency and maturity mismatches, this is done by deterring the incentives to borrow both domestic and international currency loans. The cost comes with the mechanisms involved of forward-looking provisioning and reserve requirements which are increased and therefore the amount of capital banks are left with to continue to give out credit is lessened and therefore not all projects will be able to receive finance.

5. Conclusion

This thesis first explored the main factors that underlie Emerging Market Economies, these group of countries have been opening up their capital accounts in the last decades and the incidence of crises since then has been a marked characteristic of this period. The procyclicality these countries are exposed to is linked to the state of liquidity in the external capital markets and developed economies. This implies that Emerging Markets receive push and pull forces, in terms of capital flows, that links the business cycle in the industrial world to their own business cycle. The main issue with this fact is that it creates vulnerability to boom-bust cycles, where these Emerging Markets take all the financing they can get a hold to, just to see it flow out and result in adverse economic circumstances for them when the expectations of the international financial markets have a change in perception. These “external impulses” as Calvo, Leiderman and Reinhart (1993) call them, are a source of volatility that Emerging Markets cannot control. This is part of the reason why Emerging Market Economies tend to have a procyclical stance on both fiscal and monetary policy, which only accentuates the boom-bust cycle even more. The exposure to external shocks is aggravated when these countries are grouped together and contagion hits, such as the Asian crisis, and because their banking systems still suffer from low levels of equity and are interconnected, it easily leads them to banking crisis. The answer to the first research question thus is two-fold, and the first part relies on the factors explained above, the risks they are exposed to are linked very strongly to external shocks and the state of liquidity of the international financial market.

The second part of the first research question refers to the risks that come with capital flows in Emerging Markets and have to do with the impact these “external impulses” have on the domestic economy. The stability of the currency in these countries is key in most aspects of their development, especially since many are plagued with liability dollarization and the fact that many rely on the export sector to compete internationally, the pressure on the appreciation of the exchange rate is one of the first major risks. However, a surge in capital flows and current account deficits cannot be sustained indefinitely, therefore the phenomenon of sudden stops seems inevitable at some point. If these countries are not prepared for this, it can lead to important credit crunches that can lead to financial turmoil. These two factors

explained above cover the flow part of the risks of capital flows in Emerging Market Economies, now it is also important to understand the balance sheet effects they create. These two effects have to do with the behavior of local economic agents and how they deal with the possibility of external financing. First, we turn to currency mismatches, which is present in the majority of countries as we have reviewed previously. This leads to a great sensitivity to any variations in the exchange rate, and partly explains the “fear of floating” many countries have. Any negative impact to the exchange rate could lead a country from a devaluation to a currency crisis. Second, maturity mismatches are an additional issue that many Emerging Market Economies face. Capital bonanzas coupled with lower international interest rates bring about the temptation to take cheap credit on a short-term basis in the international market and turn it into a long-term asset such as a loan, which would be worsened if it is given out in domestic currency. In sum, there is an important incentive structure that needs to change in these Emerging Market Economies so that they are able to benefit from the additional capital from the international market without creating excessive financial exposure for themselves, given that the most important factor in how grave crises are relies on how the capital inflows are managed in the first place, to ensure the risks they face are either avoided or dealt with in a timely manner. Therefore, given the above explanations the first hypothesis is not rejected, indeed capital flows in Emerging Markets are able to buildup systemic risk if not managed properly.

The second research question of this thesis has to do with how to manage the risks by capital inflows in Emerging Market Economies, particularly policies that would contribute to stability and crisis resilience. The first of the policies proposed, capital controls, is not one which is prevailing in many Emerging Market Economies as they are much more open, therefore although this would eliminate the problem of the boom bust cycle from the start it would also close them off to any of the benefits of international investment. We assume then, that the Emerging Market Economies we are dealing with could use instead capital account regulations, which are more flexible than capital controls and can take on many forms and contribute to reducing appreciation pressures and taming the volume of capital that flows into the country. The exchange rate policy and the monetary policy are closely related, it is proposed that in these types of scenarios, the countries pursue an intermediate exchange rate which will still leave some room for the use of the interest rate as a monetary policy tool. In

terms of fiscal policy, it is key that it should strive to be countercyclical, although this also assumes that the authorities would have the discipline to resist overborrowing in times of bonanza to create enough savings for bad economic times, and therefore be able to take on countercyclical policies. The last one of our policy recommendations addresses the domestic risks in the banking sector. The prudential measures recommended in this paper involve a higher degree of prudence within the banking sector, which is not an easy task to accomplish, in particular because such regulations imply important cost increases. This is in fact a pattern within the policy proposals, that the costs of taking on such measures involve an important trade-off between growth and maximizing project opportunities versus caution and crisis avoidance. However, the costs of crises can also bring about tremendous costs in terms of losses in GDP, so it is worth to consider that perhaps a slower pace in growth will lead to a more stable and sound economy in the long-run. Therefore, our second hypothesis which countercyclical policies could aid in the pursue of stability is confirmed but was missing the prudential and regulatory component which would make for a more solid financial base to manage crisis situations.

6. References

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