Capital Controls and Monetary Policy in Developing Countries

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Executive Summary

Short-term capital flows may be very volatile; they react quickly to sudden changes in investors' moods, external events, and to perceptions of governments' macroeconomic policy decisions. In 2007 net debt flows to the developing world were more than 6.5 times as big as they were in 2003; yet, in 2008 these flows were at less than half their 2007 level. Short-term debt flows, which almost quadrupled between 2003 and 2007, turned negative in 2008.

Given the negative impact of these large reversals on many countries in the recent world recession, the possibilities of using capital controls has received more attention in the last two years.

This paper looks at the potential for using capital controls as a means of reducing this volatility, as well as the economic damage that it can cause. It also examines some case studies in which capital controls were implemented in various countries in recent decades.
One of the main problems caused by uncontrolled capital movements is their effect on the real exchange rate. A surge of capital inflows, especially short-term and/or speculative inflows, can cause the domestic currency to appreciate. This can reduce competitiveness in the country's tradable goods sector, slow economic growth, and harm economic development by increasing the volatility and hence uncertainty of international prices.

Uncontrolled capital flows can also make it more difficult for governments to control inflation. If a central bank raises interest rates in order to reduce inflation, the resulting interest rate differential between domestic and international interest rates can stimulate capital inflows, which then counteract monetary policy by creating downward pressure on interest rates. Many governments have dealt with this problem by adopting inflation-targeting regimes, where the central bank focuses on maintaining a target inflation rate; if this increases capital inflows, they then allow the domestic currency to appreciate. However this can make it difficult or impossible to maintain a stable and competitive exchange rate, with negative consequences for growth and development. Furthermore, capital flows can cause enormous damage when they are reversed, with large capital outflows leading to a financial crisis. One of the most extreme examples of this problem was the Asian financial crisis of 1997-1999, which was set off by a huge reversal of short-term capital flows in 1997.

Capital controls can provide an alternative to the inflation-targeting with floating exchange rate regime, or a "hard peg" fixed exchange rate regime (which has been shown to have other severe disadvantages, as in Argentina, Brazil, and Russia in the 1990s). With capital controls, it may be possible for the government to maintain a more stable and competitive exchange a rate while keeping inflation in check.

These were some of the reasons for the implementation of controls on capital inflows in Malaysia (1989-1995); Colombia (1993-1998); Chile (1989-1998); and Brazil (1992-1998). In Malaysia, private net short-term flows, which consisted mostly of external borrowing by commercial banks and ringgit deposits by foreigners in domestic banks, had increased from 1.2 percent of GDP in 1990 to 8.9 percent in 1993.[1] This sharp increase was partly due to investor expectations that the domestic currency would appreciate. In order to control this appreciation as well as maintain control over

[1] IMF (2000)

monetary policy, Malaysia introduced controls on capital inflows that targeted short-term borrowing by banks as well as domestic currency deposits by foreigners. These measures appear to have contributed to a reduction in short-term capital inflows as well as preventing the domestic currency from appreciating.

The Colombian controls were also motivated by a surge in capital inflows from 1990-1997, and resulting appreciation of the currency. The results were more mixed, possibly because of loopholes that enabled investors to get around the controls, although the controls did appear to be successful in increasing the independence of monetary policy.

The Chilean government in 1991 also wanted to avoid the currency appreciation resulting from large foreign inflows, while at the same time controlling inflation; the exchange rate was seen as very important to the country's export competitiveness. Authorities also wanted to alter the composition of flows, decreasing the share of short-term flows; these represented up to 95 percent of all inflows in 1989 and were regarded as destabilizing and speculative in nature. The Chilean measures seem to have succeeded in altering the composition of capital flows and increasing monetary policy independence; there is some debate over how much they succeeded with regard to the exchange rate.

India and especially China have used controls on inflows to promote direct investment in strategic sectors and to foster the transfer of technology. Controls have been also used to reward equity investment, as opposed to debt. By changing the composition of inflows, capital controls may help aim the evolution of financial markets at objectives that are consistent with broader development goals, and reduce the growth and bursting of asset bubbles. Prudential regulations (capital adequacy requirements, reporting requirements, and limitations on the kinds of projects in which financial institutions may be involved) may also be seen as forms of capital controls. Controls on capital outflows are more difficult but there is evidence that Malaysia used such controls successfully in 1998-2001, during the Asian financial crisis.

In sum, there is sufficient backing in both economic theory and empirical evidence to consider more widespread adoption of capital controls in order to address some of the macroeconomic problems associated with short-term capital flows, to enable certain development strategies, and to allow policy makers more flexibility with regard to crucial monetary and exchange rate policies.

Introduction

The globalization of international financial markets has caused a significant increase in emerging countries' exposure to the risk of capital flow bonanzas or capital flight. In 2007 net debt flows to the developing world were more than 6.5 times as big as they were in 2003; yet, in 2008 these flows were at less than half their 2007 level. Short-term debt flows, which almost quadrupled between 2003 and 2007, turned negative in 2008 (see table 2).

The latest report of the Institute of International Finance (IIF, 2010) sees a considerable rebound in flows to the emerging world during 2010. The recovery of these economies and the interest rate differentials with respect to the advanced countries has "set the stage for another extended boom in financing flows to emerging economies—the fourth such expansion phase since the mid 1970s" (p.2). The IIF wonders if this rapid move from "famine to feast" is not an indication that another financial bubble could be forming in the emerging world. Similar concerns on a new surge in capital inflows to developing countries have also been mentioned by the IMF (Ostry et al, 2010).

As has been documented elsewhere, capital flow bonanzas may lead to excessive accumulation of international reserves or to exchange rate appreciation. Monetary authorities are seen as unable to set both the domestic inflation level and the exchange rate when full capital mobility prevails. The typical response has been the adoption of inflation targeting regimes and flexible foreign exchange rate systems. These are also seen as an effective remedy against the threat of capital flight when the external sector is under pressure. The results, however, are an excessive emphasis on price stability as the only goal of monetary policy, and slower economic growth.

Capital controls are presented in this article as a viable policy alternative, one which may help countries keep inflation under control and also maintain a stable and competitive real exchange rate. As shown in the next sections, capital controls have been implemented by several countries and have allowed a more independent monetary policy and changes in the composition of inflows. The most successful cases have been able to avoid foreign exchange appreciation and reduce the volume of flows.

We conclude that the lessons to be derived from capital control experiences may be taken into account by countries that are now in the middle of a depression but insist on maintaining a foreign exchange peg. Of course the most notable example is Latvia, which has avoided devaluation on fears that the European Union would reject their full membership in the Euro area, and on fears that a depreciation of the currency would lead to a run on the Lats. Capital controls, as applied in Malaysia during the Asian crisis or in Argentina after 2001, may help the economy recover (by promoting exports and discouraging imports through devaluation) and at the same time prevent capital flight. Domestic interest rates could be lower, thus allowing for the recovery of domestic spending, particularly consumption and investment. As will be seen below, the negative reaction of the international financial community may be short-lived.

The article is organized as follows. The next section examines the evolution of macroeconomic policy, while the third section compares inflation targeting and capital controls. A fourth section analyzes the experiences that Malaysia, Chile, Colombia and Brazil had with the implementation of capital controls. We then present the main conclusions of the paper.

Macroeconomics and Monetary Policy

In the last years most economists have insisted on the critical importance of maintaining a low and stable inflation rate. Practitioners have also adopted this view, and at present time various countries around the world have determined that the pursuit of price stability must be the central bank's primary goal.

The underlying view is that inflation results from an excess of money supply over money demand. In high-income and some middle-income countries the central bank prevents (or attempts to correct) this situation by means of open market operations which, up until several years ago, were aimed at controlling the amount of money in circulation.[2]

Obviously this control requires that economic authorities keep track of the evolution of monetary aggregates. But this approach has faced two important limitations: first, authorities needed to determine which measure of money supply they wished to control; and there are several possible alternatives, going from the monetary base (also referred to as high powered money), to M1, and then to M2, M3 and broader measures of liquidity. The more realistic and comprehensive these measures became, the more difficult it has been for the central bank to control their evolution. Second, policy makers also needed to estimate a money demand function, which has not been shown empirically to be stable.[3]

Targeting monetary aggregates became even more difficult in countries in which economic agents combine the use of the local currency with the use of other alternative or competing means of payment, like the U.S. dollar or the euro, for example.

Fortunately for those who adhere to the notion that price stability should be the main goal of central banking (this will be examined in more detail below), the early 1990s saw the birth of what has become a very popular policy tool: the so-called "Taylor rule." This rule first emerged in a 1993 article suggesting that the motion of the interest rate could be captured by a simple expression with inflation and GDP growth as the main arguments (Taylor, 1993). More specifically the equation stated that monetary authorities adjusted the "policy rate"[4] in response to the gap between actual and targeted inflation on one hand, and between actual and targeted (or potential) GDP growth on the other hand. Taylor (p.202) found that, from an empirical standpoint, the rule fit very well the U.S. Fed's experience prior to 1993.[5]

Interestingly (and conveniently), monetary targeting was rendered unnecessary as a result of Taylor's discovery. If the policy rate determines the money supply in the monetary market, then the central bank may only target that rate, and stop worrying about measuring and tracking down the evolution

[2] Open market operations allow the central bank to sell bonds in order to pull money out of circulation, or to buy bonds in order to inject liquidity into the system.
[3] See for example Andersen (1985) on the stability of money demand functions.
[4] The "policy rate" may be defined as "the short-term interest rate that the central bank can directly control through appropriate open-market operations" (Blanchard et al, 2010; p. 5).
[5] Subsequently the rule was found to fit very well the Greenspan period as Chairman of the U.S. Federal Reserve (Blinder et al, 2005).

of monetary aggregates. The complications arising from the choice of an appropriate measure of liquidity and from estimating money demand would be gone for good.

The combination of a persistent preoccupation with inflation, and the ease of application of Taylor's rule facilitated the consolidation of a new trend in macroeconomic modeling and policy-making, one that has been referred to as "new consensus macroeconomics" (Arestis and Sawyer, 2003).[6] The ensuing macro models got rid of various descriptions of the monetary sector, and replaced them with the Taylor rule. Blanchard et al (2010) see monetary policy as increasingly focused on the use of the policy interest rate as the preferred instrument, a trend that was partly motivated by the perception that "the real effects of monetary policy took place through interest rates and asset prices, not through any direct effect of monetary aggregates (p.5).[7]

Epstein (2005) argues that, policy-wise, this new view is part of an important change in central banking practices, one that has been strongly favored by the International Monetary Fund (IMF).[8] This approach emphasizes central bank independence, inflation control as the main policy goal (if possible, within the framework of inflation targeting), and the use of indirect methods of monetary policy (such as open market operations, now aimed at setting the policy rate). When describing the existing knowledge on macro policies, Blanchard (2010 et al, p. 3) writes: "we thought of monetary policy as having one target, inflation, and one instrument, the policy rate."

In countries with large degrees of openness (both in their trade and in financial sectors), the application of inflation targeting regimes seemed very convenient, especially because of the emphasis on price stability as the only goal of monetary policy, and the adoption of a more flexible exchange rate regime. The latter becomes very important as an alternative to avoiding the "trilemma": a country cannot maintain, at the same time, full capital mobility, a fixed or managed exchange rate, and an independent monetary policy.[9] More specifically, in countries with an open capital account, a domestically determined monetary policy is only possible under a flexible exchange rate.

Let us examine more carefully how the trilemma works. A central bank attempting to control inflation would conduct open market operations to raise the policy rate. As the latter rises, other interest rates within the economy also increase, prompting an inflow of capital from other countries. With a fixed exchange rate, these inflows create an excess demand for domestic assets in the local financial market. The excess creates pressure to bring interest rates down thus canceling out the central bank's initial decision to increase interest rates. Monetary policy is thus rendered ineffective.

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[6] Other, more mainstream, references to the new consensus model may be found in Romer (2000) and Taylor (2000).

[7] According to McCallum (2001), however, it would be wrong to view the new models as "non-monetary." And he adds that: "the central bank's control over the … interest rate ultimately stems from its ability to control the quantity of base money in existence" (p. 146). Meyer (2001, p.4-5), believes, along the same lines, that the new consensus models do not really downplay the relevance of money. Monetary aggregates, he suggests, remain there, just hidden behind the behavior of interest rates and asset prices.

[8] The Fund has not been shy in endorsing the use of inflation targeting in developing countries. In Costa Rica, which is now making a transition towards this regime, the IMF Directors clearly encouraged economic authorities to "create the conditions for an eventual shift toward inflation targeting" (IMF, 2004). In Guatemala (IMF, 2006), the IMF Directors welcomed measures "toward the eventual adoption of an inflation target as a nominal anchor." A similar situation may be found in the case of Haiti (IMF, 2006, p.4).

[9] For an analytical presentation of the trilemma see Cordero (2009a).

If, however, the exchange rate had been flexible, then the higher level of capital inflows (prompted by the central bank's decision to push interest rates up) would have been absorbed by an appreciation of the exchange rate, without neutralizing the central bank's aims regarding the interest rate. Under this scenario, the fight against inflation becomes effective.

Inflation targeting is presented as a viable alternative because it generates the perception that, following some variation of the Taylor rule, monetary policy may be conducted only by means of adjustments in the policy rate. There is no need to apply more direct means to control aggregate spending or capital flows, particularly restrictions on capital mobility (i.e. capital controls).[10]

But we should note that the difficulties arising from the trilemma can be effectively addressed by the use capital controls. By setting limits on the amount or kind of foreign capital that is allowed into (or out of) a country, these controls may help set both the domestic interest rate and the foreign exchange rate. As foreign capital flows are restricted, interest rate determination may proceed without fears that foreign capital inflows will eventually undermine the effectiveness of monetary policy. Critics of capital controls argue that they could be ineffective, hard to administer and/or enforce, and likely to generate inefficiencies in the financial system. This article, however, will make the case that these controls not only help countries face the conditions of the trilemma, but they may also be an important element in preventing and/or addressing external sector disequilibria, and in shaping the process of development. They are a viable alternative to either inflation targeting or the use of hard pegs in macroeconomic stabilization. And the limitations that (as we will see below) are attributed to regimes that target inflation will not arise when capital controls are utilized.

In the following sections we will examine the possibilities arising from the use of inflation targeting and capital controls, especially in emerging countries looking for options which can provide a shield against adverse local and international conditions, while also allowing the pursuit of growth in a stable economic environment.

Inflation targeting versus capital controls

Inflation targeting

As mentioned in the previous section, many economists argue that an independent monetary policy is not possible when there is an open capital account and the central bank controls the foreign exchange rate.

As a result, many countries have migrated to flexible exchange rate systems, which are usually associated to lower inflation rates. According to Taylor (1993, p.201), "inflation performance is also better with the flexible-exchange rate system than with the fixed-exchange rate system. Price volatility ... is greater in all countries with fixed exchange rates."[11] These arguments, combined with

[10] Another viable way to go around the trilemma would involve the adjustment of the legal reserve requirement (as an alternative to open market operations). An increase in the reserve requirement would reduce the money supply without changing the interest rate (at least not in the short-run). See Cordero (2009a) for a more rigorous presentation on the use of the reserve requirement rate in lieu of open market operations.

[11] Williamson (2000, p.1) wrote years ago about a "new view" claiming that the viability of intermediate exchange rate regimes has been ruled out by the development of capital mobility. He argues that "[a]mong the most enthusiastic

the need to avoid inertia and volatility in people's expectations, have convinced many policy-makers that they should adopt an inflation targeting regime, which has become "a new orthodoxy of mainstream economic thought" (Epstein and Yeldan, 2009).

General endorsement for this monetary framework may be found for example in IMF (2006, p.3), which claims that "countries adopting inflation targeting have, on average, outperformed countries with other monetary policy frameworks." And for those worrying about the impact on output, the same document indicates that "there is no evidence that inflation targeters meet their inflation objectives at the expense of real output stabilization" (p.11). Fischer (2000), while admitting that "the IMF is not setting out to be a missionary for inflation targeting" adds that "the inflation targeting approach … has gained increasing support in recent years…"[12]

For mainstream economists, the attractiveness of the inflation targeting framework stems from a property of the New Keynesian model which Blanchard and Galí (2005) call the "divine coincidence." This property implies that stabilizing inflation is equivalent to stabilizing the output gap. Furthermore, inflation should be stable, but also very low (Blanchard et al, 2010; p.4). Moreover: "stable inflation is good in itself and good for economic activity."

Mankiw (2005), commenting on a paper by Hall (2005), indicates that the difficulties associated with empirical estimates of potential output have led many central bankers to focus their policy exclusively on inflation and, he continues, that's exactly what some inflation targeters are doing now. According to Blanchard et al (2010), few central banks care only about inflation; most of them practice a flexible form of inflation targeting. But the truth is that, due to either a belief in the divine coincidence, or inability to accurately estimate potential output, authorities tend to concentrate mostly on price stability, especially those authorities who operate within an inflation targeting framework.

In an analysis of Alan Greenspan's tenure, Blinder and Reis (2005) mention that in the European System of Central Banks price stability is the "primary objective." The same is true for the Bank of England, although both of them include secondary goals related to growth and employment. The phrasing implies, in Blinder and Reis' words, that "[p]rice stability comes first."

Table 1 presents a list of selected inflation targeting countries and central bank objectives (as stated in their respective websites). Of of the 14 cases in the table, 12 indicate, explicitly, that price stability is the central bank's main goal or objective; within this group, five countries explicitly adhere to the belief that price stability is necessary for economic growth (the divine coincidence!). In two countries, Hungary and Iceland, the existing legislation encourage monetary authorities to support the government's economic policies, but only as long as these policies do not interfere with the goal of low and stable inflation. These two cases, thus, seem to be analogous to the European System of Central Banks and the Bank of England (as discussed in the previous paragraph) in that price stability seems to be prior to any other objective.

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proponents of the new orthodoxy is the U.S. Treasury Department" (p.1). He then writes that "the emerging markets have been forced by … pressure from the Group of Seven countries (G7) and the IMF to float" p.53.

[12] See footnote 7.

In South Africa the central bank's site refers to price stability as its main goal, even though the Constitution seems to make some vague references to the need to protect the value of the currency in the interest of sustainable and balanced economic growth. This, rather than a call for the central bank to help promote economic growth, may be seen as an acceptance of the divine coincidence: price stability serves the goal of sustainable growth. Finally, in New Zealand's legislation, a provision is included to allow the central bank to deviate from the objective of price stability, but only for one year.

The analysis which led to the information in Table 1, is the result of a very simple exercise; it however, helps us visualize how pervasive the obsession for price stability has become. There may be other central banks with price stability as their main objective, even some which are not inflation targeters, but we wanted to emphasize the case of countries within an inflation targeting framework as that is where the agenda has been pushed recently. It may also be that, in some occasions, central bankers do become more flexible and concerned with employment and growth, but the fact that their websites emphasize so strongly the need to control inflation, gives at least a rough idea of where their priorities are.

TABLE 1
Selected Inflation Targeting Countries

	Central Bank Objectives		
Country	**Price stability**	**Price stability as condition for economic growth**	**Price stability employment, growth**
Chile			X
Colombia			X
Czech Republic		X	
Hungary*	X		
Iceland*	X		
Israel		X	
México	X		
New Zealand**	X		
Peru	X		
Philippines		X	
Poland		X	
South Korea		X	
South Africa***	X		
Thailand	X		

* Hungary and Iceland have articles in their legislation indicating that the respective central banks have to contribute to the government's economic policy, but only if that does not interfere with the goal of price stability.
** New Zealand's legislation on central banking indicates that it may be possible for the institution to adopt, for a period not exceeding 12 months, an objective different than that of price stability.
*** The website of the South African Reserve Bank indicates that its primary goal is the achievement and maintenance of price stability. The Constitution of the Republic of South Africa, however, indicates that the primary role of the South African Reserve Bank is "to protect the value of the currency in the interest of balanced and sustainable economic growth in the Republic."
Sources: Central bank websites for the countries listed in the table

Having looked at the "divine coincidence" and its relation to current stabilization policies, how relevant is this concept to the real world? Mankiw (2005) argues that it is possible to construct a model with strong theoretical fundamentals in which this "coincidence" does not arise. Also,

Blanchard and Galí (2005) show that this property does not hold when wage rigidity is introduced into the New Keynesian model. To the extent that rigidities of various sorts are very common (or the norm) in both developed and underdeveloped countries, the use of this "device" to conduct monetary policy seems rather suspect.

In spite of the theoretical elegance and achievements of the inflation targeting approach (mostly in terms of price stability), studies by Galindo and Ros (2008), Epstein (2002), and Pollin and Zhu (2005), show that this regime could be more harmful than beneficial. In particular, it tends to cause real exchange rate appreciation and harm economic growth in developing countries.

Barbosa-Filho (2009) explains that, in Brazil, this regime helped improve price stability during the 1999-2006 period, but meeting the inflation targets required the appreciation of the real exchange rate. Interest rates decreased under this framework, but they remained above the international level also due to the desire to appreciate the real exchange rate. As for economic growth, it did not improve much even though the international conditions were much more favorable than in the period before the inflation targeting.
Stiglitz (2008) goes further in his critique and argues that, when inflation is caused by rising international commodity prices, increasing interest rates (as prescribed by inflation targeters) will either not succeed in stabilizing prices, or cause a severe and unnecessary downturn in the economy.

Frenkel (2008) criticizes inflation targeting from yet another angle: he claims that the trilemma does not operate if the central bank fully sterilizes the excess money supply. Of course, he says, there is a limit to how much sterilization can be conducted before it starts generating losses to the central bank (which are themselves inflationary), but authorities should find out if the country already got past that limit before they embark on the adoption of a regime that may hurt their growth performance.

At the end of his comments on Robert Hall's paper, Mankiw (2005) reiterates his acceptance of the fact that there are important problems with the empirical estimations of potential output, and that this could push some central bankers into an exclusive focus on inflation. But, he writes: "I don't see the current state of monetary theory as necessarily supporting such an extreme view. In the end, central bankers have little choice but to look at all the data, apply a healthy dose of skepticism, and muddle through" (p. 5).

According to Blanchard et al (2010, p. 10) one of the lessons to be derived from the present crisis is that "macroeconomic policy must have many targets." But "the ultimate targets remain output and inflation stability." The authors also suggest that perhaps, during the pre-crisis years, the inflation targets were held to low. Had these targets been higher, they claim, interest rates would also have been higher and, more importantly, farther from the zero interest rate bound. The result would have been more room for monetary policy during the recent world recession, and less need for fiscal deficits.

Unfortunately (though not surprisingly) the European Central Bank did not react favorably to Blanchard et al's suggestion that the inflation target be raised. A member of the Executive Board of the European Central Bank (Stark, 2010) argues that: "Increasing the level of inflation that central banks should aim at would be a step in the wrong direction." And he also indicates that: "I can only reject the idea of raising inflation targets permanently."

The paragraph above definitely brings us back to the obsession, among certain central bankers, with the goal of price stability, even at the expense of output stabilization during periods of major economic distress. Clearly one more reason to look beyond the boundaries of the inflation targeting cage, and to considering the possibilities that capital controls may offer.

Capital controls

Background

The existing constraints on the ability of developing countries to conduct an independent monetary policy (one that is consistent with price stability, output growth, and a viable external sector), may be brought to an end by the use of capital controls. In the past, however, policy-makers have been reluctant to use this instrument, especially because of the perception that it will either scare investors away from the country or cause the country to be isolated from the international financial community. As will be seen below, these fears are largely unjustified and, instead, there are important gains to be derived from the use of these controls.

Central banks, especially those in emerging countries, ought to be able to set an interest rate that is suitable and consistent with the goals of economic policy. Thus, if central bankers wish, they should be able to address the threat of higher inflation with higher interest rates, while they should be able to respond to the risk of recession with lower interest rates. At the same time, a healthy foreign sector should result from an appropriate foreign exchange rate policy, one that allows for a stable and competitive real exchange rate.

As we explained in the previous sections, it is not possible to simultaneously target inflation and the real exchange rate when capital moves freely across countries. But the problem is that capital not only moves freely around the world, but it moves a lot and sometimes in unexpected ways. The slightest fears of a policy shift, political instability, or regional economic turmoil might trigger a run on a country's currency. Sometimes this could happen even in countries with strong macroeconomic fundamentals. Contagion might happen even across regions that are far apart within the globe; the Mexican currency crisis 1995 caused strong pressures in the Latin American southern cone; and the financial crisis in Asia in 1998 caused contagion in other parts of the world, particularly in Brazil, and also in Argentina – despite the relative lack of commercial relations between these countries and the Asian economies in crisis. These episodes culminated with considerable spikes in local interest rates which hurt the affected economies, and eventual devaluations.

But difficulties may also arise when international investors want very badly to move into a particular country, especially when possibilities arise to profit from a gap between local and foreign interest rates. These situations often occur when, in an attempt to stabilize prices, economic authorities decide to increase interest rates. The result is a capital flow "bonanza" (Reinhart and Reinhart, 2008) that leads to either an accumulation of foreign exchange reserves (which, as we saw, moves against efforts to bring down inflation), or to an appreciation of the real exchange rate (RER) (which lowers the competitiveness of domestic production and hurts exporters). The IMF has recently acknowledged that foreign investors very often show herd behavior and excessive optimism, both of which may contribute to the creation of asset bubbles, booms and busts (Ostry et al, 2010; p.4).

In the cases illustrated above, international capital flows are a problem for macroeconomic policy-making. In fact, these flows have become so pervasive that countries increasingly find themselves either under the threat of massive capital flight, or under pressure from financial inflows. The IMF already has recently expressed concerns that the gap between interest rates in the emerging and in the advanced countries is causing a surge in capital flows to emerging countries (Ostry et al, 2010).

Table 2 shows a stunning increase in net capital inflows to developing countries; by 2007 short-term debt was almost four times as large as in 2003, while medium- and long-term debt increased tenfold in the same period. Net equity inflows (which include both direct investment and equity investment) multiplied by a factor of four between 2003 and 2007. Of course, by 2008, either the expansion was much lower (as in equity flows and medium plus long term debt), or net inflows became negative (as in the case of short-term debt). The table clearly depicts the dramatic situation developing countries face in terms of the magnitude and volatility of these financial flows: during the good times they have to absorb the excess (in the form of either an accumulation of international reserves, or real exchange rate appreciation), but when outlook becomes less favorable, international financial markets turn their back on their hosts, causing capital flow reversals.

TABLE 2
Index of Net Capital Inflows to Developing Countries

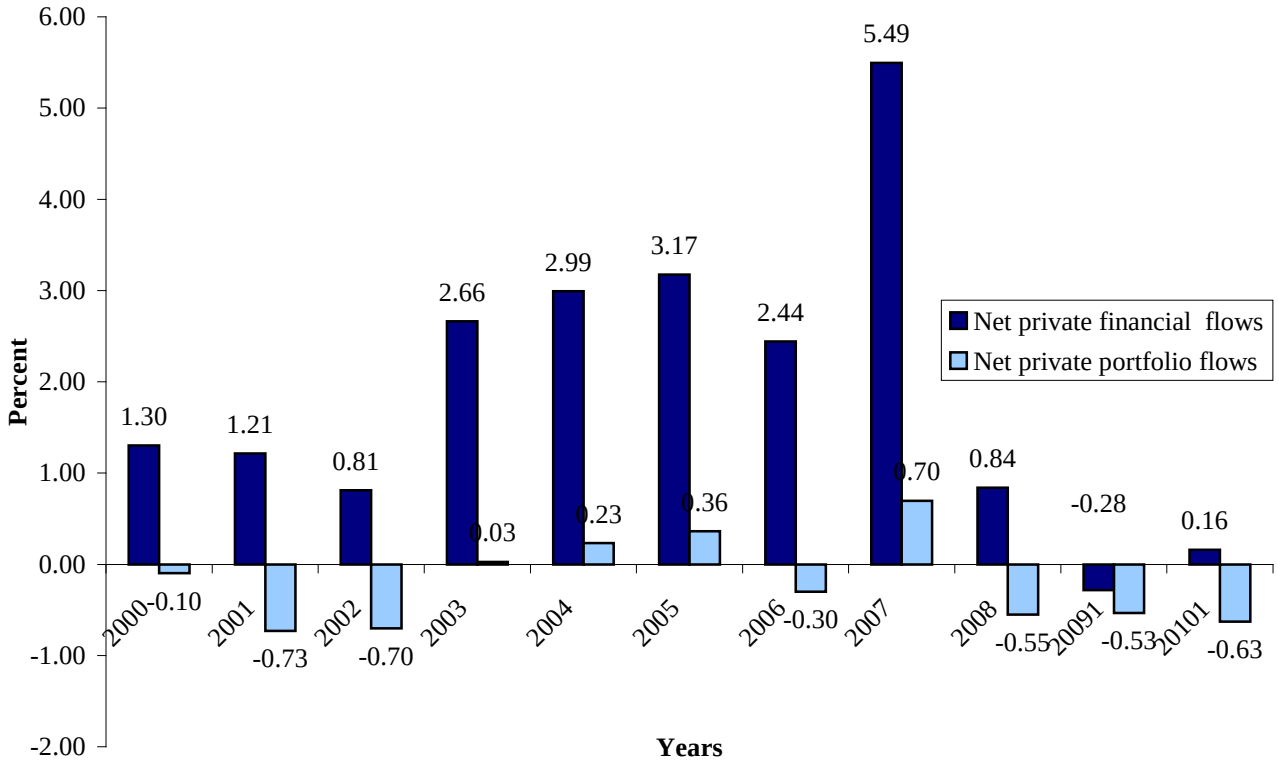
	(In percent, 2003 = 100)							
Description	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Net private & official inflow	**85.47**	**61.38**	**100.00**	**137.78**	**191.16**	**251.24**	**465.73**	**297.48**
Net equity inflows	**95.05**	**89.15**	**100.00**	**141.43**	**194.61**	**260.85**	**369.19**	**298.39**
Net FDI inflows	108.79	100.00	100.00	142.56	185.79	240.05	349.24	392.33
Net portfolio equity inflows	24.71	35.29	100.00	151.37	269.80	414.90	530.98	-223.92
Net debt flows	**64.61**	**0.85**	**100.00**	**129.82**	**183.64**	**230.30**	**676.12**	**295.52**
Official creditors	-220.16	-50.00	100.00	211.29	579.84	587.90	15.32	-226.61
Private creditors	27.40	-5.69	100.00	140.25	235.30	277.03	589.88	227.40
Net medium & long term debt	13.13	10.10	100.00	241.08	463.64	565.99	1061.62	769.36
Net short term debt	33.90	-12.88	100.00	94.33	131.29	145.40	375.00	-19.48
Increase international reserves	**27.68**	**57.71**	**100.00**	**136.33**	**134.66**	**220.15**	**376.50**	**77.69**

Source: Author's calculations based on data from World Bank. Global Development Finance: External Debt of Developing Countries 2010. Washington, DC: World Bank. Table 1

As expected, direct investment is definitely much more stable, as it does not build upon short- or medium-term financial profitability, but on the structural characteristics of the real sector of the economy. Clearly official assistance grew slowly in 2007 and even declined in 2008, but it will probably show a significant increase as a result of the increased resources that the IMF and other multilateral agencies have accumulated, and partly disbursed, as a result of the global recession.

Figure 1 shows the evolution of inflows to emerging and developing countries, as a percent of GDP. Although the information is now presented as a portion of the economy's size, there is still a clear rising trend which, again, is interrupted in 2008 and continues rather depressed throughout 2010.

FIGURE 1
Capital Inflows to Emerging and Developing Countries as a Percentage of Groups' GDP



Source: Author's calculations based on data from International Monetary Fund, World Economic Outlook Database, October 2009.

International lending, as shown in Table 3, has increased considerably, especially in 2006 and 2007 when compared to the years before 2003. Interestingly, lending to Europe and Central Asia has accounted for a large part of the rise in cross border lending. Both East Asia and Pacific, on the one hand, and Latin America and the Caribbean, on the other hand, did not see percentage increases as large as those in the other regions.

TABLE 3
Index of Cross Border Bank Lending to Developing Countries, by Region

	In Percent, 2003 = 100							
Description	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Total	66.46	78.49	83.29	100.00	134.17	162.86	226.47	259.38
Region								
East Asia and Pacific	40.05	55.65	73.39	100.00	93.55	117.47	113.98	175.00
Europe and Central Asia	49.67	61.47	80.60	100.00	168.28	222.94	341.15	330.41
Latin America and Caribbean	120.64	133.83	98.51	100.00	113.40	102.55	162.98	165.74
Middle East and North Africa	92.00	76.00	108.00	100.00	76.00	180.00	124.00	376.00
South Asia	17.24	36.78	64.37	100.00	135.63	126.44	122.99	368.97
Sub-Saharan Africa	86.49	56.76	70.27	100.00	132.43	216.22	105.41	489.19

Source: Author's calculations based on data fro World Bank. Global Development Finance: External Debt of Developing Countries 2008. Washington DC: World Bank, 2009. Table 2.2.

Of course the figures in Table 3 changed drastically in the years following 2007 (as may be inferred from Table 2 and Figure 1) but we get a clear idea of the extent to which the ups and downs of the international financial flows may affect the macroeconomic policies that developing countries seek to apply.

The mainstream prescription for this situation is very simple: keep the capital account of the balance of payments open and let the foreign exchange rate adjust. The gap between local and international interest rates should be maintained in order to attain low inflation levels. Sure, the appreciation will hurt exports and eventually lead to higher current account deficits. But as Krugman (2009, p.81) writes (in reference to the situation in Mexico and Asia in the 1990s, preceding their respective financial crises): "Some economists argued … that the trade deficits … were not a sign of weakness but of economic strength, of markets working the way they are supposed to." Moreover, the surge in financial flows is mostly the result of private sector decisions, and again: "why should these decisions be second-guessed?" (Krugman, 2009; p. 82). In fact, he continues, these economies became more vulnerable because they opened their financial markets, and because they took advantage of "their new popularity with international lenders" (p. 97).

For some authors it is clear that that full capital mobility can be very harmful (Krugman, 2009; p.107). But controls are perceived as "easily evaded" or imposing an onerous burden on ordinary transactions (Krugman, 2009; p.107). Fortunately this view is changing and Krugman himself has argued, more recently, that there is a clear case in favor of capital controls when countries face a currency crisis (Krugman, 2010, p.9). Moreover, the IMF now sees that, under some circumstances (to be discussed below): "the use of capital controls –in addition to both prudential and macroeconomic policy– is justified as part of the policy toolkit to manage inflows" (Ostry et al, 2010; p.5). As important as this shift in the IMF views is, it is only fair to mention that heterodox economists have recommended the application of capital controls for several years, especially when referring to the limitations of monetary frameworks which emphasize inflation targets and market-determined exchange rates, or when referring to stabilization packages designed by the IMF.[13]

Potential benefits of capital controls

The clearest (though not necessarily the most important) impact of controls over capital mobility relate to the possibility of conducting an independent monetary policy, one that allows central banks to pursue objectives which transcend the mere focus on very low and stable inflation rates. But there are other benefits to be derived from the use of this instrument, including the possibility to alter the maturity composition of flows, and contribute to broader national goals, especially by allowing countries to be more selective with regard to the kind of investment they want and sectors they want to develop. We provide below a more detailed examination of the possible impact of capital controls.

Effectiveness of monetary policy: Under the threat (or pressure) of massive capital inflows

A gap between the domestic and the foreign interest rate represents as an open invitation for international capital to move in. As Taylor (1998), and Frenkel and Repetti (2009) explain, this gap

[13] See for example Taylor (1998), French-Davis (2003), Frenkel (2004), Epstein et al (2004), Stiglitz et al (2006), Frenkel (2008), Frenkel and Repetti (2010), Cordero (2009b), Cordero (2009c), Weisbrot and Ray (2010), among others.

usually opens up as a result of policies of financial liberalization and attempts to reduce inflation. In various occasions this has led, after real exchange appreciation, to severe balance of payments crises, usually accompanied also by financial crises. (Frenkel and Repetti, 2010)

The situation described above may be avoided by means of the imposition of capital controls. These controls may take the form of quantitative limits to the amount of capital that may enter into the economy, bans on certain types of portfolio flows, or taxes which may discriminate against short-term foreign borrowing. Once the controls are in place, economic authorities may continue to implement a macroeconomic policy that allows for inflation to be kept under control, and to maintain the competitiveness of exports.

In several countries, notably China and India, controls on inflows have been utilized to promote direct investment in strategic sectors and to foster the transfer of technology. They have been also used to reward equity investment, as opposed to debt (Epstein et al, 2004). Policies may take the form of minimum stay requirements for FDI, or tax incentives for investment in specific activities, or taxes proportional to the length of an investment.

By opening up the possibility to change the composition of inflows, the controls may help aim the evolution of the financial market at objectives that are consistent with broader development goals and prevent the inflation and burst of asset bubbles. Bans on certain types of portfolio flows and taxes that discriminate against short-term foreign borrowing have also altered the composition of flows in some cases (see Magud and Reinhart, 2006).

Finally, Epstein et al (2004) argue that prudential regulations (capital adequacy requirements, reporting requirements, and limitations on the kinds of projects in which financial institutions may be involved) are another form of capital control. From their perspective, a strict distinction between these regulations and controls on financial inflows cannot be delineated in practice.

Under the threat of massive capital outflows

In countries that face potential (or actual) capital flow reversals or foreign exchange constraints, controls on outflows may help stabilize the foreign exchange market and avoid external debt. If needed, economic authorities may implement low interest rates in order to encourage investment and growth in the real sector, without the fear that capital will flow out of the country. Of course, the international financial community is more opposed to controls on outflows than on inflows (Epstein et al, 2004), but as we will see below, both kinds of controls have been implemented in the real world and with favorable results. Retaliation from international investors has been weak and usually short-lived.

Changes in the composition of inflows

Short-term capital flows may be very volatile; they react quickly to sudden changes in investors' moods and to perceptions of macroeconomic policy decisions. They may very rapidly leave a country (capital flow reversals) and cause a balance of payments crisis (which may be accompanied by a financial crisis). These flows are not necessarily determined by the fundamentals of the economy and their presence may increase the vulnerability to unexpected shocks and contagion.

Capital controls may be utilized to discourage short-term inflows and to promote direct investment in strategic sectors, along with long-term financial flows, and a more intensive use of equity investment (Stiglitz et al, 2006). As a matter of fact, equity liabilities, almost by definition, do not lead to currency or maturity mismatches (Fernández-Arias and Hausman, 2000).

Implementation of capital controls

There is some disagreement over the types of capital controls that are more effective and desirable. The broadest distinction on this front is between market-based (also called price-based) controls and administrative or quantity-based controls. The first policy seeks to exert influence on flows through taxes and reserve requirements, while quantity-based controls are discretionary in nature and involve outright restrictions and quantity limits. Much of the controversy revolves around the effect that a given choice of controls has on investor sentiment. According to Stiglitz et al (2006), price-based controls are considered market-friendly, flexible, and less prone to political manipulation. They also argue that quantity-based controls are less popular within the international financial community, but sometimes have been able to reduce risk more effectively than price interventions.

In reality, however, both approaches have their merits and most countries have used a combination of the two. Price-based controls are quite useful because they can address key prudential concerns in developing economies lacking proper financial regulatory institutions. By raising the cost of foreign borrowing or investing, they can stabilize volatile capital inflows and exchange rate fluctuations. Moreover, price-based schemes are most effective in altering the composition of capital inflows because they can be designed to tax specific types of instruments and/or maturities more than others. On the downside, price-based controls are some times seen as easily circumvented, even when properly enforced. Ostry et al (2010, p.5), however, argue that even if investors devise strategies to bypass the controls, the cost of doing so may end up being more than the expected return of the intended transaction. Stiglitz et al (2006, p.198) go even further when they indicate that "interventions don't have to be perfect to be effective." What matters, they continue, is the ability of the controls to stabilize the flows.

Administrative controls on outflows are most often used as a last resort option in crisis situations, as was the case in Malaysia. The main fear though is that their use will give them an "market-unfriendly" stigma, deterring investment even after the controls are removed. Experience, however, suggests that this stigma is not very powerful and, as in the case of Malaysia, investment will often resume in force following the removal of controls (Edison and Reinhart, 2000). Moreover, it is hard to disentangle the effects of the controls on investment in a given country if the country in question is undergoing a financial crisis at the time.

There is a wide variety of empirical studies on the effect of capital controls. But the results do not point to a single unified view on the desirability or final impact of controls.[14] Various studies conclude that capital control have been effective at granting monetary policy independence, altering the composition of flows, and temporarily reducing exchange rate pressures (Magud and Reinhart, 2006). Ostry et al (2010) conclude that capital controls are a justified component of the policy toolkit when the economy operates close to potential, has adequate levels of reserves, the exchange rate is

[14] See Ostry et al (2010) on the reasons that may interfere with empirical estimations on the effectiveness of capital controls.

not undervalued, and the flows are likely to be transitory. The problem with this conclusion is the countries that would find controls more beneficial are probably those with interest in maintaining a competitive real exchange rate, and in promoting a higher level of economic activity. The whole idea of a stable and competitive RER is based on the perception that competitiveness is a necessary condition for faster economic growth. In several occasions, these economies will not be close to potential output and yet might benefit from capital controls.

Case Studies

This section documents the experiences of Malaysia, Chile, Colombia, and Brazil with their use of capital controls. For each country we provide background information, followed by a description of the policy tools utilized, and what policy conclusions, if any, might be drawn from the experience.

Controls on Capital Inflows in Malaysia: 1989-1995

Background

Capital inflows to Malaysia surged at the beginning of 1989, at around the same time they surged in Latin America. One significant difference is that the surge in Malaysia took place in a low inflation environment, which makes it easier for them to lower interest rates in combination with capital controls when attempting to reduce inflows (in comparison to their Latin American counterparts). Flows to Malaysia, and ASEAN countries more generally had strong long-term and FDI compositions, reflecting the implementation of development plans and reforms in the mid 1980s, a solid growth record and favorable long-run prospects (Koenig, 1996). Malaysia had reversed the overvaluation of its currency and established a managed float, overcame previously large fiscal deficits and significantly slowed credit expansion.

The lowering of interest rates in the U.S. (which in 1990 was attempting to recover from a relatively mild recession), generated a large gap between U.S. rates and those in Malaysia. This, along with the perception of high levels of productivity in Malaysia, led to a considerable surge in capital inflows. The unusually large volume of FDI and other long-term flows reflected Malaysia's increasing attractiveness as a manufacturing center for Asia, which was also partly driven by the recent appreciation of the yen and the won (Koenig, 1996). Private net long-term flows increased from 5.7 percent of GDP in 1990 to 8.2 percent in 1993.[15] Similarly, private net short-term flows increased from 1.2 percent of GDP in 1990 to 8.9 percent in 1993.[16] This sharp increase was partly due to investor expectations that the ringgit would appreciate.

Motivations

The large volume of inflows posed several challenges, including the risk of the economy overheating, loss of monetary policy independence, appreciation of the ringgit, growth of bubbles in asset markets, and financial sector instability. According to Koenig (1996), authorities first reacted by sterilizing the inflows but this proved costly and relatively unsuccessful. Also, authorities initially felt

[15] IMF (2000).
[16] Ibid.

that the interest rate needed to remain high in order to keep inflation in check; inflation was low at the time but was considered at risk of increasing suddenly.

Policy Tools

In order to regain control over monetary policy and slow capital inflows, authorities undertook measures directly intended to limit short-term flows, specifically targeting foreign borrowing by commercial banks and ringgit deposits by foreigners. These measures included:

- A ban on the sale of money market securities with a maturity of less than one year to foreigners.[17]
- Limits on domestic banks' foreign borrowing intended for portfolio and non-trade related investments.[18]
- An Unremunerated Reserve Requirement (URR), which required that part of a foreign ringgit deposit would not receive interest. This effectively lowered the implicit interest rate on foreign ringgit funds deposited in commercial banks.[19]
- Limits on currency speculation by prohibiting commercial banks from offering non-trade related forward or swap options.[20]

The implementation of capital controls was supplemented with several prudential regulations and the subsequent loosening of monetary policy. In particular, according to Koenig (1996), Malaysia adopted the capital adequacy standards of the Bank for International Settlements (BIS). By mid-1994, inflation remained low and concerns about the negative impact of high interest rates on growth led authorities to loosen monetary policy. After this move the interest rate differential decreased sharply.

Effectiveness

The volume of short-term flows reversed sharply, eventually falling below the share of FDI and other long-term flows in 1994. Contrary to most expectations, the exchange rate did not appreciate, moreover, it registered a small depreciation after the controls were implemented. Significantly, the Malaysian authorities also managed to decrease the total volume of flows, an extremely rare accomplishment.[21]

Policy Lesson

First, unlike Latin American countries that also experienced surges of inflows, Malaysia started off with a low inflation rate, and thus it was in better position to discourage short-term inflows by loosening monetary policy; as a result it was possible to effectively lower the interest rate differential

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[17] Ibid.
[18] Koenig (1996).
[19] Ibid.
[20] Ibid.
[21] See Magud and Reinhart (2004), for a summary of econometric evidence for all countries that have used controls on inflows.

that was attracting the flows in the first place. For countries facing more serious inflation threats, a reduction of the domestic interest rate is more complicated.

Second, critics of Malaysia's capital controls have argued that the depreciation of the ringgit amounts to a small failure of the controls in so far as it reflects a negative market reaction to their imposition. However, it should be kept in mind that authorities intended to keep the exchange rate competitive to promote exports. In this context, if the objective is to temporarily reduce the volume of flows and depreciate the currency, the market stigma associated with an unorthodox policy like capital controls might be an asset rather than a liability.

Third, Malaysia's controls on inflows were designed as short-term measures. As such, they were removed as soon as authorities felt their objectives had been achieved, minimizing the scope for longer-term distortions. However, as Malaysia's subsequent experience with capital controls during the Asian crisis shows, capital controls are rarely binding in the long run and once removed after a crisis, absent reform in other areas, many of the previous problems return.

Controls on Capital Outflows in Malaysia: 1998-2001

Background

At the outset of the Asian crisis, after the devaluation of the Thai baht in July 1997, Malaysian authorities attempted to defend the ringgit against mounting downward pressure. They reduced ringgit liquidity and sharply raised interbank market rates. However, it quickly became clear that the exchange market instability would persist for quite some time. Authorities also tightened fiscal policy to shore up confidence in the economy and the ringgit.

Motivation

By 1998 authorities became increasingly concerned with the adverse effects of high interest rates on economic recovery. The controls, in this context, were intended to allow authorities to simultaneously continue to stabilize the exchange rate while at the same time allowing the government to bring interest rates down to aid economic recovery (Jomo, 2005). According to Epstein et al (2004) the controls were motivated by a desire to facilitate economic expansion but at the same time also to defend the foreign exchange rate; to reduce capital flight and prevent further drain on international reserves, and to avoid a stabilization program with the IMF.

Policy Tools

Controls were first imposed in September 1998 and were accompanied by the introduction of a pegged exchange rate. The controls were gradually eased until their final removal in May 2001. In order to deter speculative positions against the ringgit, authorities closed down the offshore ringgit market and prohibited all ringgit credit to foreigners that was not related to trade or FDI. Authorities also imposed a 12-month moratorium on the repatriation of foreign funds held in Malaysia and established a mandatory repatriation of all ringgit held abroad (Kawai and Tagaki, 2008).

Starting on February 15, 1999, authorities began to relax the restrictions, adopting a system of exit levies. This was done in response to concerns that the sudden removal of controls at the end of the 12-month period would spark massive capital flight and deplete foreign exchange reserves (Jomo, 2005). This new scheme of controls involved a two-tier taxation system that distinguished between the repatriation of principal and profits. According to Kawai and Tagaki (2008), the repatriation of principal for investments made before February 15, 1999 were subject to a tax inversely related to the length of the investment. Up the end of the 12-month moratorium period, September 1, 1999 or after one year, principals could be repatriated tax-free. Specifically, a 30% tax applied to investments repatriated less than 7 months after entry, 20% for 7 to 9 months and 10% for 9 to 12.

Profits from investments made after February 15 were also subject to a time-related tax rate. The rate was 30% if the investment was held for less than one and 10% if held for more than a year. After September 1999 the controls were relaxed further. The two-tier system was removed and the profit repatriation tax was simplified to 10% for all investments. In February 2001 the tax was abolished for investments that lasted more than a year and eventually, in May 2001, the controls were removed entirely (Kawai and Tagaki, 2008).

Effectiveness

Jomo (2005) indicates that the controls significantly lowered interest rates, thus contributing to economic recovery. Edison and Reinhart (2000) find that the controls were also effective at reducing the volatility of the interest rate and the exchange rate. Moreover, foreign reserves increased immediately after the imposition of controls. Thus the controls can be interpreted as having insulated Malaysia from some of the effects of the external shocks at that time, and providing more policy space to pursue recovery.

Policy Lessons

The most important lesson from Malaysia's experience is that controls on capital outflows, which are generally considered a desperate, last-resort measure, can make a difference in helping to stabilize an economy in the midst of crisis. Epstein et al (2004) argue that the controls succeeded in meeting some of the government's objectives: the offshore ringgit market was eliminated, and credit agencies upgraded Malaysia's credit rating by late 1999. In 1999, net capital inflows turned slightly positive again (Edison and Reinhart, 2000). It is clear then that critics overstated the negative effect of the controls on market sentiment. Others have seen the Malaysian experience with skepticism on the grounds that FDI flows lagged after the crisis even though they were explicitly exempt from the controls. But Kawai and Tagaki (2008) explain that this could have been the result of other unrelated factors, such as slower growth in Japan. The final assessment of Epstein et al (2004, p.12) is that the controls had a "significant positive effect on the ability of Malaysia to weather with the 1997 crisis and reflate its economy." They go on to suggest that the controls "allowed a speedier recovery than would have been possible via the orthodox IMF route."

Government credibility seems to have played an important role in the success of controls. The central bank made a concerted effort to evenly implement the controls, avoiding charges of favoritism or cronyism. In particular, regular reporting requirements and on-site supervisory mechanisms were established for financial actors. The central bank undertook an extensive public information campaign, continuously explaining the complex details of the controls. Also, authorities

gradually eased the controls in order to reinforce trust that the measures were, in fact, temporary (Kawai and Tagaki, 2008).

In measuring the benefits of these controls during the Asian crisis, one has also to take into account that they appear to have helped Malaysia avoid turning to the IMF, as South Korea, Indonesia, Thailand, and the Philippines did. Although IMF agreements are not necessarily harmful, at that time the Fund was imposing numerous conditions that the other governments saw as intrusive, unnecessary, and bad for their overall economic development. Mickey Kantor, who was U.S. Trade Representative from 1993-1997, was famously quoted as saying that "the troubles of the tiger economies offered a golden opportunity for the West to reassert its commercial interests. When countries seek help from the IMF, Europe and America should use the IMF as a battering ram to gain advantage." Some of this happened: the number of structural policy conditions attached to IMF agreements during the crisis years was estimated as "at their peak -- about 140 in Indonesia, over 90 in Korea, and over 70 in Thailand."[22] These conditions included trade and capital account liberalization, privatization, corporate restructuring, tax and expenditure reform, and other measures.[23] The number and nature of these structural conditions attracted broad criticism from a wide range of prominent economists[24] and the IMF subsequently changed its practices in this regard. Thus, while it is difficult to measure the loss of output or employment that was avoided through the implementation of these controls, if they allowed Malaysia to avoid making unwanted commitments to the IMF, this is a measurable benefit – from the point of view of the government – of adopting these capital controls.

Controls on Capital Inflows in Colombia: 1993-1998

Background

During the beginning of the 1990s Colombia undertook significant structural reforms which included items from the "Washington Consensus" recipe: trade liberalization, privatization of public enterprises, gradual capital account liberalization (including domestic treatment for foreign investors), labor market liberalization and the partial privatization of social security. Significantly, the constitution was also amended to grant the Central Bank independence with a formal commitment to fight inflation (LeFort, 1996). These reforms, interpreted by the international financial community as a sign of "good behavior", combined with the low interest rates prevailing in the developed countries to bring a significant increase in capital inflows to Colombia. Between 1990 and 1997, capital inflows increased from 0.2 percent of GDP to 7 percent (IMF, 2001).

Motivation

The surge of capital inflows put upward pressure on the exchange rate and raised concerns that appreciation would hurt export competitiveness. Sterilized intervention was attempted initially but was too expensive for the long run, and according to Coelho and Gallagher (2010), insufficient to

[22] Morris Goldstein (IIE) http://papers.ssrn.com/sol3/papers.cfm?abstract_id=300885
[23] Ibid, p.40
[24] See Goldstein (2000)

avoid currency appreciation.[25] Moreover, as in Chile, inflation remained in the double digits, ruling out the possibility of following the Malaysian strategy in 1994, of moving to lower domestic interest rates as a way to discourage flows.

Policy Tools

The main capital control used in Colombia, starting in 1993, was an URR. The measure applied to any foreign exchange credit with a maturity of less than 18 months. When first applied the URR featured a flat rate of 47% of the value of inflows. However, in 1994, the URR rate was restructured inversely to the maturity of the credit in order to discriminate in favor of longer-term flows. For example, credits with a maturity of 12 months were subject to a URR rate as high as 93% while credits with a maturity of 24 months were only subject to a 50% rate (LeFort, 1996).

Effectiveness

The effectiveness of Colombia's URR is difficult to evaluate. With the exception of Le Fort (1996), which considers the URR effective in all of its policy objectives, most econometric studies find that the URR was only successful in increasing the independence of monetary.[26] The mixed results on the effect on the composition of flows are especially surprising since Colombia's URR discriminated against short-term flows more than did Chile's. Coelho and Gallagher (2010) find that in the case of Colombia the controls were only moderately effective in increasing monetary independence and causing changes in the composition of flows. But they also warn that the result could have been affected by the tendency of investors to look for ways to bypass the controls. In this case, they suggest, economic authorities should be more careful in ensuring enforcement of the controls and an able administration of the system.

Controls on Capital Inflows in Chile: 1989-1998

Background

Following a large financial crisis in the 1980s, Chile undertook extensive structural reforms. These included: gradual capital account liberalization, the privatization of public enterprises, trade liberalization and the privatization of the social security system. Since the 1980s, the authorities' two main policy objectives were to lower inflation, which had remained in double digits since the late 1980s, and to promote Chile's growing export sector. This led the government to adopt capital controls.

The low interest rate prevailing in developed countries and the high interest rates needed domestically to fight inflation created a large interest rate differential between Chilean and international rates. This, along with a reduction in the country risk premium, due to the end of the Pinochet dictatorship, led to a surge of capital inflows. Between 1988 and 1990 gross private capital inflows increased from $0.9 billion to $1.8 billion, and by 1997, the figure had reached $2.8 billion (Edwards, 1999).

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[25] This is not surprising as, according to Coelho and Gallagher (2010) Colombia is one of the 15 countries in the world with the highest surge in capital inflows in the period from 2002 to 2007.
[26] See Magud and Reinhart (2006).

Motivation

The controls were mostly motivated by the desire to keep domestic interest rates high in order to fight inflation and, at the same time, avoid the currency appreciation resulting from large foreign inflows; the foreign exchange rate was seen as an important determinant of export competitiveness. Authorities also wanted to alter the composition of flows, decreasing the share of short-term flows, which were regarded as destabilizing and speculative in nature. These concerns were especially pressing since short-term flows represented up to 95 percent of all inflows in 1989 (Edwards, 1999).

Policy Tools

The main control used in Chile was an URR. The URR was continually modified, increasing the rate and extending the types of credits subject to it:

- In 1991, the URR rate was 20% and applied only to foreign loans and fixed income securities. The credits had to remain in deposits at the Central Bank for up to a year (up to a year, as a general requirement, or up to a year without remuneration depending on the maturity.
- In 1992, the URR rate was raised to 30% and was extended to trade credits and loans related to FDI.
- In 1995, the URR was extended to also apply to bonds, Chilean stock traded in the New York Stock Exchange (ADRs).[27]

At the beginning of the 1990s, Chile also had controls on FDI. In particular, FDI was subject to minimum stay requirements and profit repatriation taxes. In 1990 the minimum stay requirement was set at three years but was eventually lowered to one year in 1992 at the same time that repatriation restrictions were eliminated.[28]

Effectiveness

The Chilean experience is the most widely studied and is regarded in the literature as the most successful example of capital controls on inflows. In the wake of the Asian crisis Stiglitz famously endorsed the use of a "Chilean-style" URR by developing countries seeking to avoid some of the excesses caused by international financial integration (Stigltz, 1999). According to Magud and Reinhart (2006), almost every econometric study on the subject has found strong evidence that Chile's controls increased monetary policy independence and significantly altered the composition of flows. But these authors also argue that the evidence is mixed on the effect of controls in preventing the appreciation of the exchange rate and decreasing the volume of flows. Frenkel and Repetti (2010), on the other hand, argue that the measures applied by the Chilean authorities did have a critical impact on the country's ability to maintain a stable and competitive real exchange rate while inflation was kept under control.

[27] Edwards (1999).
[28] Ibid.

Policy Lessons

The widely regarded success of Chile's capital controls, when compared to the ambiguity of results in Colombia, highlights the importance of institutional capacity and accompanying regulations. Chile's URR were largely effective due to the Central Bank's ability to identify and close legal loopholes, continuingly enhancing the coverage of the URR to maintain its efficacy.

Controls on Capital Inflows in Brazil: 1992-1998

Background

At the beginning of the 1990s Brazil faced persistently high inflation and a large fiscal deficit. To address these two problems Brazil devised the *Real Plan*, which simultaneously sought to reduce the deficit (by cutting spending) and lower inflation (by introducing a new monetary regime). The new monetary framework would be based on two nominal anchors: an exchange rate anchor, in the form of currency pegged to the dollar and a monetary anchor of announced money supply targets intended to manage aggregate demand (Ferrari-Filho and De Paula, 2003).

The new exchange rate system consisted of a daily crawling-peg. Defending the peg and keeping inflation in check called for high interest rates, which led to a large differential between domestic and international rates.[29] At the same time, like many emerging markets during the 1990s, Brazil regained access to international credit markets, which had been virtually cut off following the debt crisis of the 1980s, and experienced a strong surge of capital inflows seeking to take advantage of the large interest rate differential. Monthly private net capital flows increased by 25 times, from a monthly average of $39 million between 1988 and 1991 to $970 million between 1992 and 1995 (Cardoso and Goldfjan, 1997).

Motivation

Two main problems associated with the inflows motivated authorities to implement controls: the resulting appreciation pressures on the *real* and the potentially destabilizing effects of short-term flows, which are often speculative. Beginning in 1992, the real effective exchange rate appreciated markedly.[30] At the same time, the composition of the capital inflows was increasingly short-term. By 1995 roughly 2/3 of all inflows were short-term.[31]

Policy Tools

Reducing the volume of inflows and altering their composition involved discouraging investors seeking to take advantage of the interest rate differential and speculative activity more generally. Specifically, authorities discriminated against short-term investments, particularly in fixed income securities, in favor of investments with returns that reflected the long-term profitability of the economy. To this end, the Central Bank took several initial measures:

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[29] Garcia and Valpassos, (1998).
[30] IMF (2001).
[31] Ibid.

- Increased the minimum average amortization term for financial loans.
- Discouraged the use of trade credits. The maximum time between when an export credit was received and the associated goods were shipped was decreased from 360 days to 180.
- Lowered the limit on Bank dollar-denominated liabilities and raised the limit for dollar-denominated assets. The limit on dollar liabilities, which were defined according to each Bank's net worth, was cut by 50%. At the same, the limit on dollar assets was increased from $2 million to $10 million.
- Created a special channel for the sale of fixed income bonds and commodity funds (which acted in practice like fixed income securities) to foreigners. These were in turn subject to an initial "entrance tax" of 5%, which was subsequently altered to become inversely related to the maturity of the security in order to further encourage longer-term investments.[32]

Effectiveness

Evidence on the effectiveness of controls in Brazil is mixed. Magud and Reinhart (2006) show that, according to econometric evidence, controls appear to have been somewhat successful at reducing the volume of inflows and altering the composition of flows but only in the short-run. But Brazil's capital controls do not seem to have reduced the pressure on the real exchange rate.

Main Policy Lesson

As in Chile, the controls were most successful at altering the composition of flows. Also (and in line with Coelho and Gallagher, 2010) we have to accept that controls, in general, can be only as effective as the institutional and regulatory capacity enforcing them. Moreover, the sophistication of derivative markets posed a continuing challenge to policy makers because it allowed arbitrageurs, seeking to take advantage of interest rate differentials, to have access to fixed income securities when these were mainly prohibited throughout the duration of the controls. The success of controls, in other words, depended on the ability of authorities to keep up with the pace of financial innovation in order to close legal loopholes as these emerged.

[32] Garcia and Valpassos (1998).

Conclusion

In this article we began by examining the recent evolution of macroeconomic thinking and the path towards an increased use of inflation-targeting monetary frameworks. The limitations of this regime were examined, as well as the possibilities of using capital controls as a viable macroeconomic policy alternative for developing countries.

From a conceptual point of view, the use of capital controls provides emerging economies with the possibility of implementing, simultaneously, an independent monetary policy and a viable external sector. This is seen to be feasible when countries face the threat of capital inflow "bonanzas," as well as speculative attacks or runs on the domestic currency when expections or the perception of risk becomes less favorable.

The analysis of the case studies here indicates that Malaysia's experience with controls on capital inflows seems to have been the most successful. The use of URR led to a significant decline in short-term flows, a reduction in the volume of flows and to an increase in the independence of monetary policy. Moreover, the foreign exchange rate did not appreciate.

Another success story regarding controls on inflows is definitely Chile, where the use of URR led to a significant change in the composition of flows and to an increase in the degree of monetary independence. Appreciation of the currency could not be avoided, but according to Frenkel and Repetti (2010, p.38) exchange rate policy was helped by the use of URR in that it "was successful in keeping the RER relatively stable, allowing only for a soft appreciation." They also mention that the Chilean focus on a target for the RER did not undermine their fight against inflation.

In Brazil the controls reduced the volume of inflows and changed their composition, but did not prevent the appreciation of the currency. In the case of Colombia the empirical studies have arrived at non-conclusive results in terms of the volume and composition of inflows, but have also shown that the URR increased the independence of monetary policy.

This article also documents the experience of Malaysia with controls on capital outflows during the Asian crisis. The use of specific restrictions on outflows allowed economic authorities to set an interest rate that did not hurt growth performance. The country avoided the loss of international reserves and avoided a stabilization program with the IMF. The experience in this case shows that controls on outflows represent a viable alternative to countries facing the threat of significant losses of international reserves.

During the most recent world recession, a number of countries faced the problem of deepening recession that was exacerbated by a fixed exchange rate. In addition to losing the potential expansionary effect of a devaluation, these countries have also found themselves – in order to maintain the peg -- precluded from using expansionary fiscal or monetary policy when it was most needed; and in some cases even pursuing pro-cyclical macroeconomic policies.[33] Similar effects can

[33] See Cordero (2009c); Weisbrot and Ray (2010)

be seen in countries that do not have a fixed exchange rate, but nonetheless are concerned about it falling too far or even overshooting.[34]

Other research (Frenkel and Repetti (2010); Frenkel and Ros (2006); and Rodrik (2008)) has argued, along the same lines, that the real exchange rate must remain at levels that promote the competitiveness of exports. The use of capital controls represents a feasible alternative that can allow governments to maintain a stable and competitive RER, while at the same time pursuing a monetary policy that leads to stable and reasonable levels of inflation.

[34] See Weisbrot, Cordero, and Sandoval (2009) http://www.cepr.net/documents/publications/imf-reform-2009-04.pdf

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