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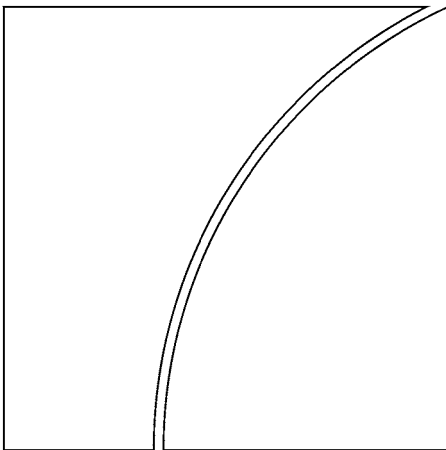
No 68

# Challenges related to capital flows: Latin American perspectives

Contributions to the BIS-sponsored sessions at the annual LACEA meetings in 2010 and 2011

Edited by Ramon Moreno

Monetary and Economic Department



Contributions in this volume were prepared for BIS-sponsored sessions at the 2010 and 2011 Latin American and Caribbean Economic Association (LACEA) Annual Meetings, held in Medellin, Colombia and Santiago, Chile respectively. The views expressed are those of the authors and do not necessarily reflect those of the BIS. Individual contributions (or excerpts thereof) may be reproduced or translated with the authorisation of the authors concerned.

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# Introduction – Challenges related to capital flows: Latin American perspectives

Ramon Moreno<sup>1</sup>

## Abstract

This *BIS Paper* (No. 68) is a collection of essays focusing on the drivers and effects of capital flows and the challenges they pose for the implementation of monetary and other policies. The collection draws on selected presentations made at the BIS-sponsored sessions at the Latin American and Caribbean Economic Association (LACEA) meetings in 2010 in Medellín, Colombia and in 2011 in Santiago, Chile.<sup>2</sup>

Keywords: Capital flows, inflation targeting, financial stability, monetary policy, macroprudential policies, exchange rates, foreign reserves, BIS, LACEA

JEL classification: E52, E58, F31, F32, F41, G28

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<sup>2</sup> The previous collection is BIS Paper 51, Perspectives on inflation targeting, financial stability and the global crisis.

Capital flows and other external shocks pose important challenges for Latin America. Some of these challenges were discussed at two BIS-sponsored panels at the November 2010 and November 2011 meetings of the Latin American and Caribbean Economic Association (LACEA). This volume compiles a number of papers based on the presentations made by Jose Darío Uribe, Governor, Bank of the Republic (Colombia); José De Gregorio, then Governor, Central Bank of Chile; José Sidaoui, Deputy Governor, Bank of Mexico; Ramon Moreno, BIS; and Charles Engel, Professor of Economics at the University of Wisconsin. Uribe's presentation was made at the LACEA meetings in Medellín, Colombia in 2010, and the remaining presentations were made in Santiago, Chile in 2011.

To put the papers in context, this introduction highlights the distinct cycles in capital flows as revealed by capital flows and costs of financing, and concerns that may arise. A discussion of policy responses follows.

## Capital flows

Capital flows play a large role in policy setting in Latin America and other emerging market economies, and are a key source of vulnerability. A key issue is their volatility: Graph 1 shows that following a period of inflows, bank and portfolio inflows to Latin America reversed late in 2008, recovered in 2009, and then declined or reversed sharply in late 2011, with another round of recovery and reversal in the first part of 2012. Capital flows are more volatile than economic activity, which has broadly recovered in advanced and emerging economies since around mid-2009.

The capital flow volatility and related volatility in the cost and availability of financing raise several concerns.<sup>3</sup> One is that capital flows could finance *unsustainable spending* – as reflected in large current account deficits – during periods of expansion, resulting in much sharper downturns. Another is that they could contribute to domestic financial imbalances (excessive credit growth and risk-taking, currency and maturity mismatches and asset price bubbles) that amplify the boom and bust cycle and impose much larger costs should capital inflows suddenly reverse.<sup>4</sup> In Latin America these concerns were mitigated over the past decade because current account surpluses were maintained and financial imbalances such as currency mismatches or maturity mismatches were reduced. In line with this, Latin American economies have displayed a great deal of resilience in response to external financial stress.

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<sup>3</sup> After 2007, external costs of financing faced by Latin American countries and other EMEs remained low for extended periods and then rose sharply during episodes of financial stress. In spite of the greater attractiveness of Latin American assets since the outbreak of the global financial crisis, cycles in capital flow and external financing costs have recurred because of changes in global investor risk aversion reflecting continued fragility in the financial systems of some advanced market economies.

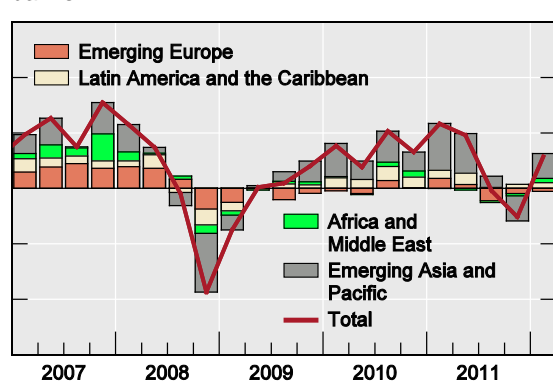
<sup>4</sup> See related discussions in this volume by De Gregorio and Uribe.

Graph 1

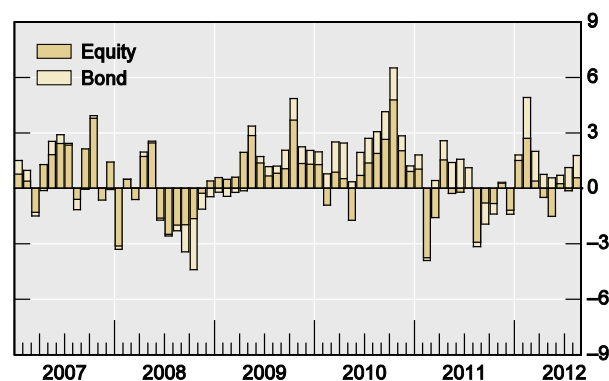
## International bank lending and fund flows into emerging market portfolio funds

In billions of US dollars

Changes in cross-border lending by BIS reporting banks



Flows to Latin American funds<sup>2</sup>



<sup>1</sup> Estimated exchange rate-adjusted changes. <sup>2</sup> Monthly sums of weekly data up to 3 September 2012. Sum of flows across Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. Data cover all net portfolio flows (adjusted for exchange rate changes) of equity and bond funds to individual emerging market countries and to emerging market funds for which country, or at least regional, decomposition is available.

Sources: EPFR; BIS locational banking statistics by residence.

## Dealing with capital flows

Contributors to this volume note that policymakers should respond to capital flows only if they reflect distortions or externalities, but not if they reflect fundamentals.<sup>5</sup> For example, capital inflows and exchange rate appreciation resulting from improvements in the terms of trade should be allowed, but policymakers should take steps to dampen such flows or mitigate their effects if they are associated with aggregate demand or real exchange rate externalities, if they amplify domestic boom and bust cycles because of bubbles or excessive risk-taking by financial institutions, if they reflect carry trades resulting from policy distortions originating from abroad, or if they are associated with currency misalignment.<sup>6</sup>

The contributions give insights into issues that arise in the use of instruments in response to capital flows, including: (i) foreign exchange market intervention; (ii) monetary policy and financial regulation for financial stability; and (iii) capital controls.

*Foreign exchange market intervention.* Although the central banks contributing to this volume maintain inflation targeting regimes with flexible exchange rates, they all have intervened in foreign exchange markets to dampen exchange rate volatility (but not to target the exchange rate level) or to accumulate foreign reserves during periods of capital inflows that can be deployed in times of financial stress or capital inflow reversal. Since the goal is to prevent panics or bankruptcies during episodes of financial stress, foreign reserves (and other foreign currency resources) should be large enough to reassure investors that foreign currency

<sup>5</sup> See contributions by De Gregorio and Sidaoui.

<sup>6</sup> Engel's contribution to this collection discusses distortions and currency misalignment as possible reasons for capital controls.

obligations can be met.<sup>7</sup> Still another issue is to what extent there could be greater reliance on financial markets to hedge risks. On the one hand, the existence of well developed markets for hedging foreign currency risk probably explains why there traditionally has been much less reliance on foreign reserves in advanced financial markets. At the same time, problems with the use of derivatives did arise in two Latin American countries, and further development of financial markets could possibly help deal with these types of problems. A final issue is how foreign exchange market intervention is to be reconciled with monetary policy. With an open capital account, dilemmas inevitably arise. For example, in his contribution Sidaoui notes that because of high inflation, there was no leeway to lower interest rates in Mexico to reduce incentives for carry trades. Given that it has maintained an open capital account, Mexico then relies on intervention to ensure orderly exchange rate adjustment and to accumulate foreign reserves to enhance resilience. This illustrates the practical issues that arise in dealing with the well known “impossible trinity” or policy trilemma, which states that a country cannot simultaneously maintain an open capital account, target the exchange rate and maintain domestic monetary control (see my contribution to this volume).

*Monetary policy and financial regulation for financial stability.*<sup>8</sup> Since the outbreak of the global financial crisis, a consensus seems to have emerged that relying on a single policy instrument (such as the interest rate) is not enough because monetary authorities should be concerned with financial stability as well as monetary stability. A combination of policy tools is needed. The papers in this volume offer insights on what this means in practice. At least one contributor (Uribe) sees a need to take financial stability into account in the design and implementation of monetary policy. This includes lengthening the policy horizon beyond one to two years to take financial stability considerations into account, to consider the impact of policy on credit and asset prices while targeting inflation. Conflicts may arise between monetary and financial stability goals that can be reconciled through appropriate communications. In addition, financial regulation may be used, allowing policymakers to target specific areas where systemic risks are particularly large. The potential toolkit is large, including macroprudential and microprudential regulation, supervision and monitoring, and analysis to identify and deal with financial imbalances. Regulations may seek to limit currency or maturity mismatches, the use of derivatives, excessive credit growth, leverage and asset price bubbles. However, the role and weights to be assigned to various instruments and their relative costs and benefits remain unclear because the effects and transmission mechanisms of many supplementary policy instruments are not fully understood.

*Capital controls.* The dilemma cited above between setting monetary policy and stabilising the exchange rate can be reconciled by imposing capital controls. In his contribution, Charles Engel cites the theoretical arguments for capital controls and related empirical evidence. However, there are a number of issues, particularly in more developed and integrated financial systems. One is that controls on inflows may be of limited effectiveness, in part because they will not prevent domestic residents from repatriating funds held abroad (see also the discussion by De Gregorio). Another is that capital controls may be counterproductive because they send mixed signals (discouraging capital inflows in the short run even if more foreign financing is desired over the medium term) and because the presence of foreign investors has in many cases improved financial infrastructure and access to financing (see eg Sidaoui).

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<sup>7</sup> However, there were differing views on the role of supplementary resources such as the IMF Flexible Credit Line (FCL). See contributions by De Gregorio and Sidaoui.

<sup>8</sup> Both Sidaoui and Uribe highlight the need for more than one instrument, while De Gregorio cites the role of financial regulation in improving financial sector resilience in Chile. Uribe also describes the rationale for the use in Colombia of marginal reserve requirements, foreign exchange regulation or capital controls, limits on foreign exchange maturity and currency mismatches of financial intermediaries, and foreign exchange market intervention.



# Global factors and monetary policy in emerging economies

José Darío Uribe E<sup>1</sup>

As always, it is a pleasure to participate in this session sponsored by the BIS. My participation in the technical meetings organized by the BIS started more than 12 years ago. These meetings, and the support and guidance of the BIS, have been extremely useful for me and also for the Colombian central bank.

The title of this session is “Global factors and monetary policy in emerging economies”. My presentation will be divided into three parts: (1) the main global factors, (2) risk and risk management, (3) monetary and financial policies. I will also comment briefly on fiscal policy, which I consider to be one of the three pillars of macroeconomic policy along with monetary policy and financial policy.

## I. Main global factors

Let me highlight two main global factors. First, we are now in a world that is *multipolar*. One or two decades ago the United States was extremely important for the development of emerging economies, for example, Latin America. Nowadays, however, more countries have an impact.

Emerging economies (mainly Asian) now account for 50% of world imports and for two thirds of the global growth we have seen in the last five to 10 years. Emerging economies are also the main engine behind commodity prices. This is partly because of the very rapid process of urbanization and industrialization in China and in India, which has created a demand for metals and energy. In addition, as China, India and other emerging economies develop and living standards rise, the demand for high-quality food and protein increases. All these factors raise commodity prices. Higher commodity prices increase the return on capital in the commodity-producing sector. In Colombia, we are seeing a lot of investment in oil, coal, gold and some other commodities, and the same thing is happening in other emerging economies.

In contrast, we have countries like the United States and some European countries. These, apart from some exceptions, present what I call “anemic growth in major advanced economies”. This is typical post-financial crisis behavior. As a paper by Reinhart and Reinhart<sup>2</sup> shows, in the five to 10 years following financial crises, the median rate of GDP growth decreases on average by 1%, while unemployment increases by 5%. The exceptions this time include Australia and Canada, which are recovering relatively fast.

The second global factor is the need for fiscal consolidation in a setting of excess capacity, low inflation expectations and low confidence. Monetary authorities have responded with very low policy rates for longer periods (for example, zero or near zero in the cases of the

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<sup>1</sup> Governor, Bank of the Republic, Colombia. Presentation at the BIS-sponsored session on “Global factors and monetary policies in emerging market economies” at the LACEA meetings in Medellín, Colombia, November 2010.

<sup>2</sup> C Reinhart and V Reinhart, “After the fall”, *Federal Reserve Bank of Kansas City Economic Policy Symposium, Macroeconomic Challenges: The Decade Ahead*, Jackson Hole, Wyoming, 26–28 August 2010. Also issued as *NBER Working Papers*, no 16334.

United States or Japan) and unconventional monetary policy in some major industrialized countries – so-called quantitative easing.

What are the implications? Some of the most relevant for Latin American countries are: (1) high commodity prices and high terms of trade, (2) strong investment, both local and foreign, in commodity sectors, and (3) strong capital inflows.

## II. Risk management

The global factors mentioned before (high commodity prices, strong investment and capital inflows) have positive effects. In particular, the short- and medium-term prospects for commodity-producing emerging economies look favorable. However, existing conditions also imply some risks that need to be carefully managed.

The first point regarding risks is that commodity prices are very volatile and highly uncertain. Short-term demand and supply curves for commodities are very inelastic. As a result, any movement in the supply or demand creates major swings in prices. The second is that the long-term supply and demand elasticities are greater than the short-term elasticities because consumers economize and find substitute products.

These two features create risks. Businesses, households and policymakers tend to overreact to the short-term increases in commodity prices. Also, strong capital inflows may feed financial imbalances (excessive credit growth and asset prices) as well as unbalanced growth between the non-commodity tradable and non-tradable sectors.

Moreover, if in response to a large currency appreciation, local interest rates are held down for an extended period of time, there is (the possibility of) excessive risk taking as well as the risk of asset price bubbles and financial imbalances. We have learned this from previous crises and also from the international crisis that started in 2007 and that exploded in the fourth quarter of 2008.

Let me remind you of three basic principles we have learned from past crises.

*First, flexibility is crucial.* This means exchange rate flexibility and no exchange rate targets. Monetary and fiscal policy flexibility is also useful in responding to expected and unexpected events.

*Second, avoid pro-cyclical policies.* During boom periods, tax revenues increase and governments are severely tempted to spend. Central banks may have incentives to support unsustainable expenditure growth. This not only exacerbates the spending and financial imbalances during periods of favorable external conditions, but also hampers the ability of the authorities to implement countercyclical monetary and fiscal policy once external conditions have deteriorated.

*Third, incorporate financial conditions and financial intermediation into the analysis.*

## III. Monetary and financial policies

Let me turn now to monetary and financial policies.

There are some points of agreement on this subject: (1) Price stability is not enough. Financial stability matters too, as we learned in previous crises (the last financial crisis in the US was partly because of that). (2) The interest rate alone is not enough to achieve both price and financial stability. More than one instrument may be required.

This means that we need a wide range of policy instruments, one of which, as I said before, is fiscal policy. Fiscal policy must, first, do no harm. Do not put fuel on the fire. It must also

help through countercyclical policies. For example, when experiencing a positive terms of trade shock and capital inflows, fiscal authorities must increase savings in order to avoid an overheating of the economy as well as prevent financial imbalances and excessive credit and asset price growth.

A second policy instrument is financial policy. This is the first line of defense for preserving financial stability. The appropriate approach to policy depends in part on the institutional framework. For example, in the Colombian case, the financial sector supervision is outside the central bank. Thus, it is important for the central bank and supervisory authorities to work together.

Financial policy should aim at preventing excessive credit growth, asset price bubbles, and large currency and maturity mismatches. A set of measures must be implemented in order to achieve this, namely: (1) macroprudential regulation and supervision contributing to the flexible exchange rate regime and, to some degree, contingent on the business cycle, (2) the supervision and regulation of individual financial institutions, which is the traditional role of supervisors, and (3) monitoring and campaigning for support for appropriate policies, e.g. being careful about excessive credit growth, asset price inflation, etc. This can be achieved through the financial stability reports of central banks and public statements warning about risks.

The third instrument is monetary and foreign exchange market policy. A number of actions are required in this regard.

First, monetary authorities need to incorporate financial stability considerations in order to smooth out business fluctuations over long horizons that exceed the one- or two-year horizons of typical inflation targeting regimes.

In particular, projections of inflation for one or two years ahead may look good, but there may also be signs of financial imbalances that need to be taken into account. These may include excessive credit or asset price growth, or unwarranted confidence by households and businesses. Excessive confidence is very common in the case of bankers, and a horizon longer than two or three years may show that their actions create financial stability risks.

Second, interest rate policy decisions need to take into account the effect they will have on the inflation forecast *and* their impact on credit and the asset markets. These could exacerbate output fluctuations in the future – even more than two or three years ahead. That does not mean that central banks should have credit or asset price targets. It means that they should take information about those variables into consideration. Monetary policy can thus also play a role in preventing credit booms.

Third, authorities need to be prepared to use tools that help to manage leverage. Additional central bank instruments are needed – not only interest rates – and all of them must be chosen carefully. This means that instruments should be selected only when their expected benefits outweigh their costs.

In Colombia, we used some of these tools during the expansion phase of the cycle in 2006 and 2007. We were raising the policy interest rate, but the market interest rate was not responding as fast as we wanted. We were also witnessing high credit growth. As a result, we put in place strong marginal reserve requirements and immediately started to see a reduction in consumer credit growth, which had been around 50% at that time. This action also reinforced the interest rate transmission mechanism.

Other instruments are foreign exchange regulation or capital controls to counter currency mismatches and excessive borrowing. In addition to the internal marginal reserve requirement, in 2007 we imposed an unremunerated reserve requirement on external debt. We also have strong limits on FX maturity and currency mismatches of financial intermediaries, having learned the importance of such measures from past experience.

Still another instrument is foreign exchange intervention, specifically to maintain adequate levels of international liquidity and to correct occasional speculative behavior in FX markets that could destabilize the economy. For this, we have accumulated international reserves and can also draw on other sources of international liquidity, such as the flexible credit line of the IMF.

There are some issues associated with foreign exchange intervention that are worth highlighting.

One is that it is difficult to know for sure whether speculative behavior is driving activity in FX markets. In particular, as I always say, beware of exchange rate targeting, either perceived or real, because you may be in trouble when people believe that you have a nominal exchange target or, even worse, a real exchange rate target. (Speculators may seek to profit by taking positions against any exchange rate target.)

Another is that if you undertake unsterilized FX intervention, you may create excessive credit expansion, bubbles and inflation. On the other hand, if intervention is sterilized, it may attract more capital, which could render the intervention ineffective and unsustainable.

The bottom line is that you have to know when to intervene and how to do so. Presumably, each country has learned in the past what the main ways to intervene are. This is more art than science.

#### **IV. Closing remarks**

Let me conclude with four points. First, a combination of policy rates and macroprudential regulation and supervision is needed for an effective policy response. Experience shows that, given the risk of financial imbalances such as asset price bubbles or excessive credit growth, you have to think in terms of a combination of the traditional monetary policy tool, which is the policy rate, and macroprudential regulation and supervision. The BIS has been a leader in the discussion on macroprudential regulation and supervision.

Second, central banks must be prepared to use monetary policy for crisis prevention. As I said before, the first line of defense is financial (macroprudential and supervision) policies. However, monetary policy can also help when forecasts of inflation are low but do not capture financial imbalances. Here, authorities need to be mindful of experience that shows that very low interest rates may create problems over the medium term – not one or two years ahead, but three, four or five years ahead. Moreover, if regulation and supervision are not enough to prevent the build-up of imbalances, the help of monetary policy will also be needed.

Third, there may be conflict between price and financial stability over short periods. For example, inflation may drop below the target, but at the same time, there may be strong growth in credit and in asset prices. In resolving the dilemma, authorities may conclude that inflation can be allowed to fall a little below target for a while in order to avoid future problems due to financial imbalances. This can be easily communicated to markets to anchor inflation expectations around the target.

Finally, we should recall that even if you do everything right, that does not mean that you are totally immune. Most emerging economies are small open economies, and we feel the impact of external shocks very strongly.

# Living with capital inflows

José De Gregorio<sup>1</sup>

Thank you very much. It is a pleasure to make my first presentation at this LACEA conference since we held it in Chile 12 years ago. It is also a bit ironic that the issue that seems to be relevant can change due to implementation lags. When we started discussing this panel with the BIS in June 2011 the main concern was with how to deal with capital inflows. But of course after August, and given all the surprises we have had from the Eurozone's risk escalation, it does not seem like this is the most pressing issue for policymaking in emerging markets today. We also do not know how or when the crisis in the Eurozone will end. The return to normalcy will probably come soon, but it may take a year, or a couple of years. Nevertheless, capital inflows remain a challenge because when normal times do return, such inflows to emerging markets should resume, because emerging markets are much stronger economies and offer better returns. It is as simple as that.

That capital should flow to emerging markets has a number of implications. It has implications for the business cycle, which it can amplify. It has implications for exchange rates, raising concerns about "Dutch disease" and the possible implications for financial stability. In the remaining time I have available, I will offer a perspective on capital inflows. Then I will talk about policy tools and challenges, and end with some concluding remarks.

Capital inflows resumed in the second half of 2010. The reason was that the global economy was recovering from the Great Recession and so there were a lot of investment opportunities in emerging markets. Investment in stocks and fixed income by mutual funds recovered significantly, and figures on capital inflows to emerging markets went up very sharply starting in the second half of 2010. This also had some price effects, such as exchange rate appreciation and increases in stock-market prices.

So the first question is what caused these inflows? They were in large part caused by interest rate differentials, as the gap between monetary policy interest rates in emerging market economies (EMEs) and advanced economies was about five percentage points. And this was very natural because we were in very different cyclical positions. Advanced economies are still striving to recover from the Great Recession and have eased monetary policy. In contrast, the emerging market recovery has been much stronger, and in order to keep this recovery sustainable authorities have had to tighten monetary policy and to control inflationary pressures. So the interest rate differential widened and attracted capital inflows to emerging markets, but I want insist, there was nothing abnormal from the historical perspective.

Growth prospects were also much better in EMEs, and we have seen advanced economies not growing, not closing the gap with emerging markets. So there were differential returns favouring emerging markets.

However, an important issue that has implications for policymaking is how capital inflows are absorbed. The answer seems to be different today than in the past.

Our understanding of capital inflows advanced a lot in the mid-1990s following a famous paper by Calvo, Leiderman and Reinhart on the surge of capital inflows in EMEs and the

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<sup>1</sup> This note draws on remarks prepared for the BIS-sponsored high-level panel "Responding to capital flows: what have we learned?" at the LACEA meetings in Santiago, Chile in November 2011. At the time, José De Gregorio was Governor, Central Bank of Chile.

potential for sudden stops.<sup>2</sup> But if we look at the data from that time, capital inflows were financing increasing current account deficits. In the case of Chile, we had a current account deficit close to five per cent of GDP, close to the average in Latin American countries. Asian countries had also accumulated large current account deficits before the Asian crisis of the second half of the 1990s. But the situation over the past decade was very different, because while there were a lot of gross inflows there were also large gross outflows. On average, EMEs have had current account surpluses, so capital inflows were not financing unsustainable expenditure growth, but resulted in portfolio diversification. In some economies this occurred via foreign reserve accumulation, and in others through private sector investment abroad. Many governments invested in sovereign wealth funds.

These differences have been observed in Chile. In Chile in the early 1990s, we had large gross and net inflows, and a current account deficit of nearly five per cent of GDP in some years. More recently, we have had a current account surplus. Most inflows were domestic corporations borrowing abroad, taking advantage of very low interest rates, so it was not the same story. We suffered one thing that all the emerging markets have been experiencing, an exchange rate appreciation, but in our case it was not the result of capital coming in, but rather was much more related to a strong economy with very strong terms of trade, in which case the natural thing is to expect an appreciation.

We may worry about appreciation, but we also have to be very careful in the diagnosis, because if the cause was not capital inflows, the appropriate solution to achieve a reversion in the exchange rate would not be found by looking at the capital account.

## Challenges and policy implications

It is difficult to try to separate policies to deal with capital inflows, but we must consider at least two dimensions. One is that of the impact of capital inflows on the business cycle; we know from experience that our economy can become addicted to capital inflows, and if for some external reason there is a sudden stop (in such inflows), we suffer a very costly crisis. The lesson is that we have to be very careful on the upturn. However, the issue is not necessarily, as they say, a sudden stop, but that the inflows might be financing unsustainable expansion.

If capital inflows lead to an economy that is extremely overheated, we may end up with a sharp downturn. Headwinds in financial markets may deepen the downturn, so the sudden stop may be seen as an amplification of the business cycle. Thus, appropriate policy responses to the impact of capital inflows on the business cycle have much more to do with countercyclical policies – that is, with fiscal policies and policies related to the exchange rate and inflation – than with the financial system.

The other dimension is financial stability. Capital inflows create vulnerabilities such as excessive credit growth – I will not define “excessive”, because it is very debatable – vulnerabilities in the financial system, currency mismatches, excessive dependence of the financial system on foreign financing, and potentially asset price bubbles. All these concerns regarding financial stability represent an important mandate for central banks.

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<sup>2</sup> See G A Calvo, L Leiderman and C M Reinhart, “Inflows of capital to developing countries in the 1990s”, *Journal of Economic Perspectives*, vol 10, no 2, pp 123–39, spring 1996, and G A Calvo, L Leiderman and C M Reinhart, “Capital inflows and real exchange rate appreciation in Latin America: the role of external factors”, *IMF Staff Papers*, vol 40, no 1, pp 108–51, March 1993.

## What are the appropriate tools?

If the concern is with unsustainable macroeconomic conditions, we have to use our traditional macroeconomic tools. The first tool and the first line of defence in response to capital inflows would be exchange rate flexibility. Why? Because we eliminate one-sided bets on our currency that create incentives for capital inflows. And I will focus on exchange rate flexibility because it is extremely important from the policy point of view. Of course, this may not be enough, and I will comment on that.

With exchange rate flexibility, monetary and fiscal policies can help limit the risk of unsustainable macroeconomic conditions. In particular, an inflation targeting regime tends to lean against the wind because as the exchange rate appreciates – because of capital inflows, or, in our case, because of strong terms of trade – there is less pressure on inflation. If the exchange rate appreciation is persistent, it gives room for some monetary easing or less tightening, which in turn reduces the pressure for exchange rate appreciation. Countercyclical fiscal policy also reduces pressures for currency appreciation, higher inflation or higher interest rates.

All this may be insufficient because the exchange rate may be subject to extreme tensions that may lead to a bubble. The traditional problem in emerging markets is that we do not have the typical housing bubble like in advanced economies. What we have in emerging markets are bubbles in all our assets. If an exchange rate bubble leads to appreciation it makes all our asset prices volatile. You can try to fight the appreciation by tightening monetary policy, but this could just create more incentives for carry trades, which would, of course, make things worse.

In Chile, we are very careful when evaluating the exchange rate because we have to be careful to see whether it is not a bubble. However, you cannot call all deviations from trend misalignments; many times the exchange rate movement is due to market forces. But still you may want to affect the exchange rate, and here you have some tools.

The tool that we have been using in Chile is foreign exchange market intervention. Of course, this is a deviation from a pure float, but there are reasons for doing it. We initiated the last round of intervention at the beginning of 2011. We announced that we wanted to do two things: first, to accumulate reserves, because it is always good to have reserves (I will make some comments on this), and second, to smooth changes in the exchange rate. The exchange rate will appreciate because we are a strong country, but the intervention provides some time for adjustments to take place in the economy.

So, foreign exchange intervention has these dual roles. One role is to provide insurance, because as you accumulate foreign reserves you are better prepared for sudden stops. What is surprising is that we have not seen massive use of reserves during the global crisis because there were no massive sudden stops. This does not mean that reserves are useless, because having enough foreign reserves may serve as a deterrent for sudden stops by making it unprofitable to attack your currency. So, accumulating reserves is useful to protect your economy from financial and boom-bust cycles. Another role of exchange rate intervention is exchange rate stabilisation.

The insurance role explains why the IMF has implemented flexible credit lines (FCL, or the original contingent credit line, which was basically contingent reserves). It is much cheaper than accumulating foreign reserves, and the funds can be drawn down very quickly if needed. But this approach has been unsuccessful. Just four countries have requested the FCL. The reason is that although the FCL is good insurance, it may not dampen exchange rate appreciation. First, you do not intervene anymore, and second, financial markets will think that you have problems, which could increase speculative capital inflows.

Having said that, exchange rate intervention has to be consistent with monetary policy in terms of the inflation targeting regime. This means it has to be exceptional – otherwise you

become addicted to intervention. Also, in order to preserve monetary policy stability, it has to be consistent with the inflation target. In particular, you cannot look for a target in the exchange rate because your target is inflation. Also, you want to keep all the monetary independence so intervention has to be sterilised.

Of course, sterilised intervention is not as effective as unsterilised intervention, such as that being implemented by the Swiss National Bank. They just create money to intervene, and this is much more effective than if they sterilised. Sterilised intervention is also more costly, but is consistent with the inflation targeting regime.

Finally – and this is what we have learnt – in order to make intervention more credible and more exceptional we do it in a very mechanical and transparent way. We do not want to fight with the market; we just say that we will do some intervention of a fixed amount on a daily basis.

I have talked about macroeconomic policy and foreign exchange intervention. Let me turn now to the third tool, financial regulation to preserve financial stability. I will focus on currency mismatches. The experience of late 2008 shows that currency mismatches were not severe in most emerging markets because currencies fluctuated a lot and markets and the financial system remained strong. There were some problems in some countries, such as Mexico, Brazil and Korea, because corporations were highly exposed to risks of domestic currency depreciation through foreign exchange derivatives positions. However, you can also include foreign currency risks in provisioning requirements and design rules so the financial system provides funding for hedging currency risks at the corporate level.

In Chile, currency mismatches are limited, in part because of regulations. We have liquidity requirements in different currencies, provisioning policies, and also restrictions on the use of derivatives. Other measures can further limit risks of currency mismatches. For example, in Korea they have imposed capital requirements on foreign debt because they think that the levels of foreign debt in the banking system threaten financial stability.

And then there is the most debatable tool, capital controls, which can also be used if needed. The big issue is whether they are effective. They may be more effective (and this is what experience shows) in economies with low degrees of financial integration. In economies like Chile, however, we could seek to impose capital controls in response to anxiety about foreign investors bringing in money from abroad. But while this might address the capital inflows of foreigners, it would not address the possible repatriation of capital from abroad by local investors. For example, in Chile capital controls cannot be applied to pension funds if they want to repatriate their quite sizeable investments abroad.

There is also the issue of how to apply capital controls, and this also depends on the depth of the financial system and how easily foreign investors can find loopholes. In a sense it is a bit cynical or incoherent to, on the one hand, say, “Please come to my country; it is great and we want to grow. Welcome, investors!” and on the other say, “But we have to control them”. This kind of schizophrenia is also bad from the point of view of applying the right policies. For that reason, I think taxation or plain controls on all types of capital movements, without distinction, may be more effective if the purpose of authorities is to reduce capital inflows.

Experience shows that the outcome in different economies did not depend on whether or not they applied capital controls; the soundness of the financial system and the strength of financial policies were much more important. And this is what I would like to focus on in my closing remarks.



## **Closing remarks**

There is a traditional distinction made between push and pull factors of capital inflows. The push factors were things from abroad, such as the foreign interest rate. Pull factors were domestic characteristics.

However, the distinction might not help fully clarify the underlying drivers of capital flows. For example, push factors might include a very weak global economy. And pull factors might be thought to be high real domestic interest rates. However, experience has shown that the pull factors or high interest rates are sometimes the result of policy distortions, such as trying to control or target the currency.

For example, in Chile during the 1990s a high domestic interest rate was associated with attempts to avoid appreciation, or to make appreciation smoother and more gradual. This, however, was a stimulus to capital inflows, because as an investor you would want to get in because of high interest rates and before they give up defending the currency. The weak defence of the currency may gradually create incentives for more capital inflows, for financial vulnerability. The implication for policymaking is that when thinking about capital inflows we should look first at the source of the appreciation, the source of the capital inflows and the coherency of the policy framework to deal with the resulting tensions.

Thank you very much.

# Challenges for emerging market economies

José Sidaoui<sup>1</sup>

## Introduction

I would like to start by thanking the organizers of this conference, the BIS, for their invitation to participate in this panel. In my presentation I will talk about some of the challenges posed by capital flows to emerging market economies (EMEs), in particular Mexico. I will focus on the driving forces behind these flows and how policymakers cope with them. Needless to say, the views I express here are entirely my own and do not necessarily reflect those of Banco de México.

Since the emergence of the global economic crisis, movements in capital flows have been exacerbated. The current global environment poses two main challenges. The first is the need to rebalance global demand across different economies: those with excess savings should direct policy toward increasing domestic demand; those with insufficient savings should strive to adjust domestic demand to sustainable levels. The second challenge is how to deal with the abundant global liquidity induced by loose monetary policy in many advanced economies, which has resulted in record low interest rates.

Usually, EMEs have benefited from capital inflows because they allow economies with insufficient savings to access foreign resources to finance domestic expenditure to promote growth. However, they have always posed challenges.

Furthermore, new challenges arise from the current global environment, among them the sheer size of the capital flows and their source – the abundance of global liquidity.

Despite the recent turmoil, several analysts claim that if world financial markets calm down in the wake of a positive outcome to European problems, EMEs are likely to receive more capital in the near term. Loose global monetary conditions are likely to persist for a while, and to the extent that EMEs perform better than advanced economies, capital may flow towards them in significant volumes.

Policymakers in EMEs need to address the risks associated with capital-inflow surges. The right policy prescription depends on the nature of the capital flows and the specific conditions in each country. In my view, an important issue is whether capital inflows are mainly driven by improved economic fundamentals or by abundant global liquidity – that is, whether they are motivated basically by carry-trades.

Although in theory it may seem feasible to discriminate between fundamental and carry-trade capital inflows, in practice it is very difficult to disentangle the two. Nevertheless, one should make every effort to differentiate between them, as the distinction has important implications for policy.

When capital inflows are driven by economic fundamentals, the adjustment calls for an appreciation of the equilibrium real exchange rate. The policy response should be geared towards allowing markets to function freely in order to facilitate the transition towards the new equilibrium real exchange rate.

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When they are driven mostly by short-term profit considerations, such as carry-trades, then the policy response should be a mix of monetary, fiscal, and financial policies to prevent misallocation of resources. Avoiding this misallocation quite often entails implementing policies that should, in turn, also prevent credit booms and busts, and the misalignment of asset prices and of the exchange rate.

The surge in capital inflows to EMEs observed during 2010 and in the first part of this year appears not to be mostly driven by fundamentals. Instead, these flows appear to be more related to carry-trade operations, given the wide interest rate spreads between EMEs and advanced economies. Under these circumstances, global external factors play a prominent role. As soon as external conditions change, there is often a rapid change in risk aversion and a sudden reversal of capital flows.

At this juncture, policymakers from several EMEs have attempted to offset the concomitant exchange rate appreciation. Very often, they have ended up intervening in the foreign exchange market, accumulating substantial amounts of international reserves, and incurring huge social costs without achieving their objective.

Countries with inflation rates below the central bank target could respond to portfolio capital inflows by relaxing their monetary policy stances. By doing this, they narrow domestic and foreign interest-rate differentials, thus reducing the appeal of carry-trade operations.

Oftentimes, however, policymakers have limited degrees of freedom when choosing the response. Consider the case of those countries with inflation rates above their central bank's target; relaxing their monetary policy stance is just not an option. A similar limitation appears when it comes to fiscal policy. Whereas the traditional prescription is that, other things being equal, fiscal policy should be tightened in order to induce a depreciation of the real exchange rate, several countries have actually done the opposite in response to the downturn of the business cycle, expanding fiscal policy in order to provide a countercyclical stimulus to their economies.

## **The Mexican experience with capital inflows**

Now I would like to turn to the Mexican experience. In 2010 and in the first months of this year, the country received a significant amount of capital inflows. Last September and October, as a result of renewed turmoil in international financial markets, there was a reversal of capital flows, mostly short-term, and a significant depreciation of the peso.

We have not been able to draw a clear-cut distinction between capital inflows that are related to fundamental reasons and those fueled by carry-trades. However, the analysis of a series of statistical indicators – coupled with market intelligence – suggests that most capital inflows received during the last couple of years have been primarily driven by fundamentals.

Over the past two years, the country received roughly 69 billion dollars,<sup>2</sup> of which 44% were FDI, while the rest was portfolio investment. Within this category, nearly 28 billion dollars<sup>3</sup> were invested in long-term government bonds, while the rest were invested in either short-term debt or equity instruments.

In this setting, open and developed domestic financial markets have been an important factor behind the capital flowing to the country. For instance, Mexico was included in Citigroup's World Global Bond Index (WGBI) almost one year ago. The current weight of our debt in this

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<sup>2</sup> USD 68.6 billion.

<sup>3</sup> USD 27.5 billion.

index stands at 0.6%. Considering that numerous asset managers and institutional investors follow this index, we have reason to believe that they are the ones behind most of the capital inflows the Mexican economy has attracted. Following the inclusion in the WGBI, the holdings of long-term bonds by foreign investors have grown quite rapidly, from 34 to almost 50 billion dollars, and now account for more than 40% of the total. Thus, one may argue that the profile of foreign portfolio investors in Mexico has changed.

However, it is also true that carry-trade opportunities have attracted short-term capital flows. Most of the recent interest in this type of investment was channeled through positions in derivatives on the foreign exchange market. In addition, an appetite for this type of investment was also present in the Cetes market (short-term government paper). During the most recent episode of volatility, we witnessed a sudden reversal of a large part of these flows. Investors reduced their positions in the OTC market: there was an outflow of more than 13 billion dollars. The same is true when one looks at Cetes holdings, which declined by 25%.

In Mexico, as in many other EMEs with capital inflows, policymakers faced various challenges. In our case, these did not appear to be as significant as in other countries. None of the challenges have so far posed a major threat to financial stability. Allow me to underscore a few facts.

First, capital inflows did not lead to a credit boom, nor did they stimulate disproportionate leverage on the part of households or firms. Indeed, different credit indicators have been growing at a pace consistent with the business cycle, while the level of non-performing loans has declined from the peak reached during the financial crisis. Furthermore, there is simply no evidence of an asset-price bubble in any relevant market.

Second, external accounts were and are compatible with a stable, balanced path. While non-oil exports have continued to grow at a healthy pace to this day (16.7% yoy in 2011), imports of consumption goods have barely reached their pre-crisis level. Therefore, there is no evidence of an unsustainable consumption boom. Further, the current account deficit is less than 1%<sup>4</sup> of GDP, and can easily be financed. Overall, it appears that capital inflows during the period when the exchange rate was appreciating did not lead to a serious or persistent misalignment of the real exchange rate.

Third, capital inflows also did not lead to higher inflation in the prices of non-tradable goods. Quite the opposite: inflation in the non-tradable sector is running at 2% and has steadily fallen during the last nine months.

Finally, although most of the main banks in Mexico are subsidiaries of European banks, Mexican institutions have remained well capitalized and closely supervised, which has enabled them to continue expanding credit. Thus, the presence of these global banks has not resulted in a reversal of capital flows or impaired their ability to carry out their business in the local market.

This said, looking ahead, policymakers in Mexico still face a number of risk factors stemming from capital flows. Perhaps among the most important is the possibility that additional inflows could lead to pronounced exchange rate appreciation, and thus to exchange-rate misalignments and distortions to the real sector. On the other hand, there is always the threat of a sudden disorderly reversal of the flows on a major scale, with the potential to destabilize domestic financial markets.

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<sup>4</sup> 0.66% of GDP.

## Mexican policy response to capital inflows

Before describing the specific policies implemented to address the large capital inflows, a background comment is due on the Mexican macroeconomic policy stance.

The government carried out a fiscal reform in 2009, in order to improve public finances, rather than as an explicit policy to address capital flows. With the benefit of hindsight, and after the crisis in Europe, Mexico did the right thing at that particular juncture. Moreover, fiscal discipline may have also encouraged long-term capital flows and thus helped make the economy less vulnerable.

As mentioned, the appropriate monetary policy response should have been to reduce the policy rate to narrow the differentials between domestic and foreign interest rates, thus reducing incentives for carry-trades. However, at that time, inflation was still above our target. The central bank had to make additional efforts to consolidate price stability and to bring inflation to the target. Thus, there were no degrees of freedom to relax monetary conditions.

In this way, sound macroeconomic policies have implicitly been part of the response to capital flows.

Thus, given the fact that there were almost no degrees of freedom for further explicit actions on the macro front, in general the policy response to the capital flows has rested on two pillars.

The first has been to allow for an orderly exchange rate adjustment. Financial authorities have been fully committed to a floating exchange rate regime and have implemented policies geared towards enhancing the regime's resiliency. The determination to allow market forces to set the exchange rate has been behind every decision related to FX policy.

Moreover, Mexico has refrained from introducing measures to restrict capital mobility, allowing markets to function freely. Exchange rate movements have probably provided the most important element of the financial and economic adjustment to capital inflows.

The second pillar in Mexico's policy response has been to take advantage of the capital inflows in order to reduce economic and financial vulnerabilities.

The central bank has replenished its stock of international reserves by using a rule-based accumulation mechanism. The stock of international reserves is now almost USD 58.1 billion higher than before the collapse of Lehman Brothers in September 2008, a time when the level of reserves was deemed by rating agencies and other analysts to be too low, especially when compared to those of Mexico's peers. The increase in international reserves has been fueled by two sources: oil-related revenues from the state-owned monopoly Pemex and direct purchases from the market through a put-option mechanism. To complement these resources, a Flexible Credit Line with the IMF was negotiated. International reserves currently stand at USD 140.3 billion, or 13.3% of Mexico's GDP.

These actions have reinforced investors' confidence. In particular, in a context of strong fundamentals, Mexico has been able to take advantage of abundant liquidity to promote the development of domestic financial markets, which has brought great benefits. Some of the most important ones are as follows.

Interest rates of government paper have declined more than 200 basis points from their peak with positive spillovers in the private sector. Furthermore, the government has been able to extend the duration of its peso-denominated debt to seven and a half years, making it less vulnerable to refinancing risk. This is a radical difference with respect to the situation 15 years ago, when most government liabilities were short-term.

The presence of foreign investors has reinforced domestic regulators' commitment to continuously improve upon the financial infrastructure. Sophisticated foreign investors have also been prodding domestic institutional investors, such as pension funds, making them

more efficient. Thus, domestic institutional and foreign investors have played a key role in fostering demand for long-term debt instruments, and in supporting the development of the markets for derivatives.

Increased investor appetite for Mexican exposure allowed the government to improve its presence in the sovereign dollar-denominated debt markets. Recently, a 100-year bond was issued with a YTM of 5.96%. Moreover, local corporations have also benefited from this environment.

Finally, the flexible exchange rate regime and the improved confidence among market participants have allowed the peso to become an important global currency. According to BIS data, the Mexican peso ranks 13th among the most traded currencies in the world. Its volume has almost doubled in the last decade; the market is liquid and deep, and operates with narrow spreads. Moreover, since entering the CLS platform, the peso operates 24 hours a day.

Despite the benefits of the current policy, it could have drawbacks. First, international reserve accumulation has expanded liquidity considerably in the financial system. Banco de México has been forced to increase its peso-denominated liabilities in order to sterilize this excess liquidity. Fortunately, there is no clear evidence that this policy has so far had a negative impact on the interest rates paid by the central bank. However, there are limits to the extent to which the central bank can sterilize its purchases of foreign currency. There is a quasi-fiscal cost corresponding to the difference between what the central bank earns on international reserves and what it pays on its domestic debt.

Second, excess liquidity has also changed the way monetary policy is implemented. Since 2010, open market operations have been used to drain liquidity on a daily basis, which contrasts with the historic behavior of the central bank as a provider of liquidity to the market.

Finally, there is another source of risk. Foreign investors hold a very large share of fixed-income securities, particularly in the middle segment of the yield curve. Of course, this poses a potential risk should a massive sell-off take place, which brings up the issue of a sudden stop, which would be a threat to financial stability.

To conclude, Mexico's experience with the recent increase in capital flows has had an important effect on both foreign exchange and debt markets. So far, none of these markets have shown signs of potential instability. As a matter of fact, they have weathered the latest episodes of financial turmoil quite well. Specifically, the floating exchange regime has proved itself a successful tool in allowing orderly adjustments. Similar performance was observed in debt markets, since higher global risk aversion has not resulted in massive outflows.

For an economy such as ours, capital flows and globalization are here to stay. Strong fundamentals and a competitive economy are crucial to taking advantage of foreign savings.

A policy oriented towards the development of domestic financial markets has paid off, as a way to enhance the potential benefits of foreign savings and as means to reduce the risk of sudden reversals.

Thank you very much.

# Lessons on the “impossible trinity”

Ramon Moreno<sup>1</sup>

Many economists think of possible policy responses to capital flows in terms of the so-called “impossible trinity,” or “policy trilemma”, according to which, with an open capital account, a central bank cannot simultaneously exercise monetary control and target the exchange rate. This framework helps highlight the trade-offs faced by policymakers in small open economies and what choices they have made in order to resolve them.

Indeed, a review of monetary frameworks around the world suggests that over the past two decades or more, many countries have concluded that the best way to resolve the impossible trinity is by seeking to maintain open capital accounts, and then allowing the exchange rate to float so as to exercise domestic monetary control – often in an inflation targeting framework. The countries represented in this panel are prominent examples.

In practice, however, the choices made by policymakers are not so clear-cut. I will illustrate this by discussing:

- the implications of central bank intervention in foreign exchange markets under floating exchange rate regimes;
- much more briefly, the fact that floating might not give as much monetary policy independence as one might have expected; and
- the renewed interest in capital controls.

## Central banks intervene under floating

Even when committed to floating, *many authorities still enter the foreign exchange market*. One motive is prudential, to have enough foreign reserves to deal with episodes of financial stress. Thus, authorities in many emerging market economies (EMEs) accumulated large amounts of foreign currency during the period of capital inflows up to 2008, and deployed them successfully to counter interruptions in external financing after the Lehman bankruptcy.

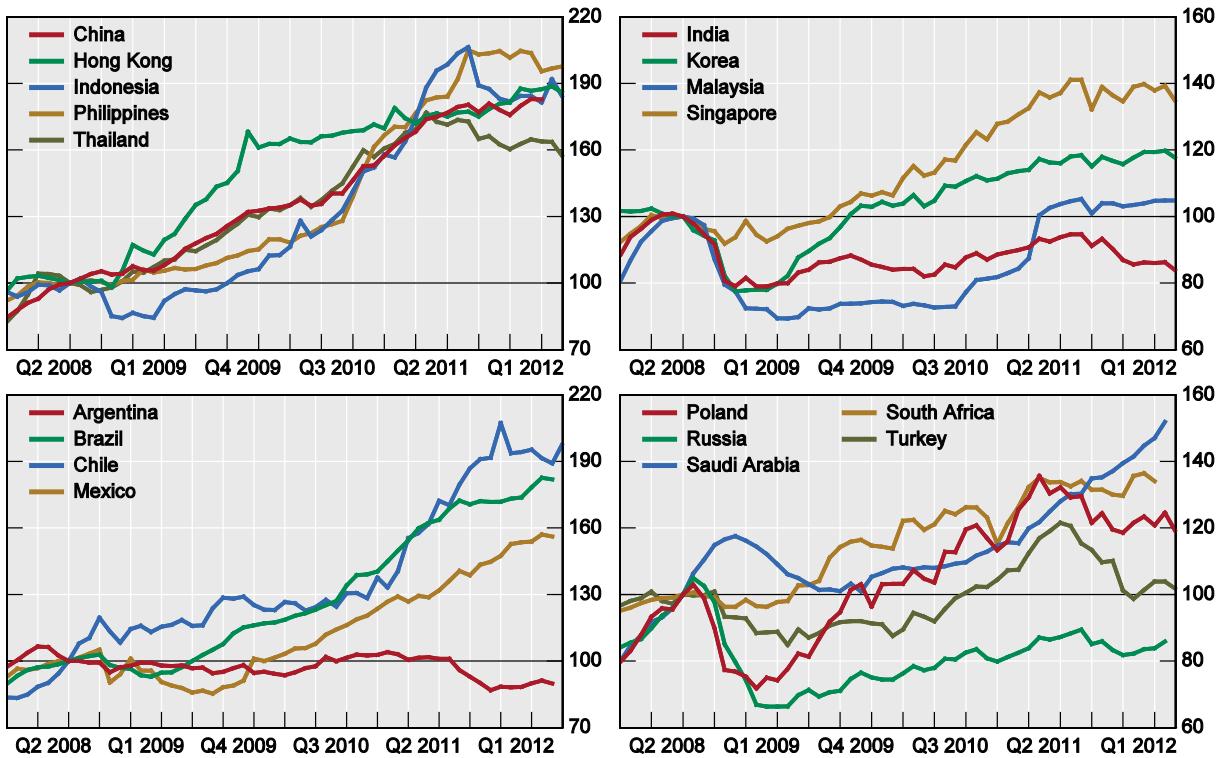
However, it is hard to tell when foreign reserve holdings are enough. Recent experience and related research suggest that we cannot rely exclusively on some popular rules of thumb, such as a 100% foreign reserve cover for short-term external debt (the so-called Guidotti-Greenspan rule). Prior to the Lehman bankruptcy, this ratio was above 100% in many EMEs, and experience in the aftermath of Lehman suggests that foreign reserves were sufficient or even ample in most countries and appeared to be too small only in a few cases. Nevertheless, as shown in the graph, many EMEs have continued to accumulate foreign reserves so that they exceed pre-Lehman bankruptcy levels.

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Graph  
**Foreign reserve accumulation**

June 2008 = 100



Sources: IMF, *International Financial Statistics*; national data.

Why is foreign reserve accumulation continuing, thus ensuring the regular presence of central banks in foreign exchange markets? One explanation is that what may be considered the appropriate level of foreign reserves varies over time, in response to changes in risk aversion or “beauty contest” effects, in which authorities face pressure to raise foreign reserves to match those of their peers or risk costly downgrades in sovereign ratings. Another explanation for continued foreign reserve accumulation is concerns that self-insurance might be inadequate in the face of a very large global shock. For example, some BIS research suggests that in the aftermath of the Lehman bankruptcy, international policy responses to provide additional US dollar financing were more effective than foreign reserve drawdowns in stabilising markets (Baba and Shim, 2010).

Given the impossible trinity, a pertinent question is whether continuing central bank entry into foreign exchange markets poses risks for monetary control. The following points may be highlighted:

- Central banks in many cases implement their foreign exchange reserve accumulation so as to minimise the impact on exchange rates, for example by preannouncing a fixed schedule for foreign reserve accumulation.
- Some central banks will occasionally intervene in the foreign exchange markets to influence exchange rates in some way, which can lead to a loss of monetary independence, particularly if the goal is to target an exchange rate level. A number of Latin American authorities, however, stress that they do not target an exchange rate level, which could expose them to speculative attacks, but seek to dampen exchange rate volatility, or correct persistent deviations of the exchange rate from some estimated equilibrium.



- Finally, foreign reserve accumulation can lead to costly changes in the size and composition of a central bank's balance sheet. This can raise concerns about the ability of central banks to sterilise, although such concerns are mitigated by the widespread use of interest rate operating targets. Another concern is exposure by central banks to possible losses (eg from changes in the exchange rate or the value of the foreign reserve assets held), which some argue can lower the capacity to exercise monetary control.

## **How much monetary independence under floating?**

Floating exchange rates can provide monetary independence by allowing central banks to adjust the policy rate to achieve their inflation target. However, capital flows can affect monetary conditions even when central banks don't intervene. For example, periods of large capital inflows can lead to lower bank deposit and lending rates, as well as lower bond rates – even if the central bank policy rate remains unchanged. An implication is that efforts by central banks to adjust monetary conditions may be countered by continuing capital inflows even if the policy rate target is met. This has generated interest in other instruments that can potentially be used to influence financing conditions without attracting capital inflows, such as reserve requirements or macroprudential instruments. The merits of alternative instruments and their effectiveness are the subject of ongoing research. If you are interested in this topic, I would like to invite you to attend the second BIS panel on “Financial stability and macroprudential policies”.

## **The revival of capital controls**

Many EMEs, including Chile and Mexico represented in this panel, have in recent years favoured the maintenance of open capital accounts and flexible exchange rates. However, some authorities have recently sought to restrict capital inflows, notably foreign portfolio debt investments. The reasons vary. Some authorities appear to want to limit persistent movements of the exchange rate away from equilibrium. Others appear to be concerned that foreign investments in domestic financial markets can impair the effectiveness of monetary policy measures. Many commentators now see a role for capital controls in the menu of instruments available to EMEs. Charles Engel will discuss some of the pros and cons.

## **References**

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# Capital controls: what have we learned?

Charles Engel<sup>1</sup>

My job here is to give a perspective from academia on the role of capital controls. This is a bit intimidating, since one of the most prominent contributors to the academic literature is Governor De Gregorio. Still, I will plunge in like a brave soldier.

My main objective is to draw some conclusions from both the theoretical and empirical literature on capital controls. Before I begin, however, I have to deliver a warning. There are problems with the literature that are unavoidable, and I think in the end the theoretical and empirical literature is inconclusive.

1. The literature has come up with a number of reasons why capital controls are an optimal, or at least a welfare-improving, second-best policy. The problem is that it might be too easy to come up with these rationales for capital controls. After all, the typical model says that a planner can achieve optimal allocations, but we know in practice that an economy left to a central planner does not allocate resources efficiently. Our models have difficulty capturing the power of the market to achieve desirable allocations of resources.
2. The empirical literature tends to find that capital controls have weak effects on capital flows. However, the empirical literature is plagued by a problem that is common to almost all analysis of macroeconomic policies. Policies are implemented in response to economic conditions. Even the best policies don't completely cure economic problems, so the problems will persist even after the implementation of the policy. We then tend to find that economic policies are followed by bad economic outcomes. It is hard to measure the impact of the policies on improving those outcomes.

For example, controls on capital inflows are usually implemented when policymakers find a trend of high and increasing inflows. It is almost impossible to measure what would have happened in the absence of controls. We tend to find no relation between the introduction of controls and the pace of inflows, but I don't think we can conclude that capital controls are ineffective in slowing down inflows.

## Theory

I offer now a few observations on the theory that justifies capital controls. I will focus on policies that impose barriers to capital inflows. I should say that policies that limit capital outflows often act like those to limit inflows, since foreign investors will be more reluctant to bring money into a country if they think they will have trouble getting it out.

In their recent survey, Magud et al. (2011) offer four potential objectives of capital controls:

1. Reduce the volume of capital flows.
2. Alter the composition of capital flows toward longer maturities.

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<sup>1</sup> Professor of Economics, University of Wisconsin, This note is based on remarks prepared for the BIS-sponsored high-level panel "Responding to capital flows: what have we learned?" at the LACEA meetings in Santiago, Chile in November 2011.

3. Reduce real exchange rate pressures.
4. Allow for a more independent monetary policy.

But why should these be objectives of policy? I would like to take what I would call a modern macroeconomic view: policies should be implemented in response to market distortions. Precisely what market distortions are we concerned with?

I lump them into two categories. First are distortions in capital markets. Second are other macro distortions that lead to currency misalignments.

### **Capital market distortions**

These distortions are what lead to the objective of reducing inflows or altering their composition. Here is a short list of distortions the literature has focused on:

1. Bubbles or waves of optimism. Here the concern is that inflows are not always driven by market fundamentals but instead by some sort of emotions that sweep through financial markets. It's difficult for a neoclassical economist to accept that these exist, but it is also difficult to deny they exist. If flows are driven by this type of market behavior, it is easy to understand why policymakers might want to limit capital inflows. Just one example is the problem of irreversibility of projects. Once entrepreneurs receive funds to start a project, there may be an inefficient waste if funds are withdrawn by lenders on a whim.
2. We can all recite in our sleep the dozen reasons why financial institutions might take on excessive risk, and leave it to governments to bail them out. Smaller countries might have particular problems bailing out the financial system. The case of Iceland should make my point clear. Imposing prudential regulations on the local financial system may be hopeless if the rest of the world is not following the same rules. Capital controls might be a sensible way of dealing with the problem. Controls at least limit the size of the mess that the government will have to clean up.
3. Borrowers and lenders might not take into account aggregate demand or real exchange rate externalities. When there is an unexpected slowdown in the economy, or an unexpected real depreciation, wary lenders might reduce new lending and contract external balances. That might be sensible from an individual standpoint. But as each lender calls in loans, investment projects and/or consumption decline. This leads to a contraction in demand, and potentially a weakening of the currency as well. This in turn has spillover effects on other loans. When the loans are made, these spillover effects are not internalized by either borrower or lender – it is an externality. Although this problem arises even in a closed economy, it is particularly an issue in small open economies that borrow in foreign currency. Policies that limit foreign lending, maybe especially loans denominated in foreign currency, may be an optimal response to this distortion.

### **Currency misalignments**

A second rationale for capital controls arises when there is a reason to control currency fluctuations. In a world of perfect, unfettered capital mobility, policymakers can only influence exchange rates to the extent that they devote monetary policy to their exchange rate target.

Effective capital controls allow policymakers to influence exchange rates through sterilized intervention. To the extent that sterilized intervention is available as a policy instrument, monetary policy can be devoted to other targets such as inflation or the output gap.

Is there a rationale for targeting the exchange rate? Most definitely (see Engel, 2009, 2011). A disastrous myth that many economists share is that somehow freely floating exchange

rates will enhance overall economic efficiency and lead to better allocations. This surely is not necessarily true in a world of slow adjustment of nominal wages and prices.

When exchange rates fluctuate, they influence relative prices and wages across countries because nominal wages and prices don't adjust as fast as exchange rates move. Of course, if foreign exchange markets are gripped by bubbles or waves of optimism, exchange rate movements can be distortionary.

But even if foreign exchange markets are efficient, the fluctuations of exchange rates don't lead to efficient movements in international wages and prices. Take the example of the huge appreciation of the dollar when Lehman Brothers failed. Maybe this was justified in financial markets by risk or liquidity considerations. But it also was a windfall gain for German manufacturers at the expense of American firms. What is the efficiency rationale for that? It only had an effect on relative prices because euro prices and wages in Germany and dollar prices and wages in the US could not adjust as fast as the exchange rate.

The counterargument to this is to give examples where the exchange rate moves in the right direction. Greece would benefit from a real devaluation, and that could be achieved quickly if they could have a nominal depreciation.

But in almost every case where you can point to a nominal exchange rate that moved in the right direction in response to a shock, you cannot make the case that it moved the right amount. Nominal exchange rates are influenced by expectations of the future, including expectations of monetary policy and financial market conditions, and influenced by risk, all in ways that don't lead to optimal changes in international relative prices and wages.

So, controlling exchange rates might be a legitimate activity, given the distortion of sticky wages and prices. Capital controls allow sterilized intervention to have an effect.

*Some caveats:* Unfettered capital flows might deliver better outcomes than a controlled regime, even taking into consideration the flaws in capital markets. At least three reasons may be cited:

- International flows will, in an ideal world, move capital to its most productive use.
- International investors might impose more market discipline on local economies, driving out inefficient firms in favor of better organized and managed companies.
- International inflows might spur development of local capital markets.

Furthermore, controlled exchange rates might be more misaligned than uncontrolled exchange rates. It is difficult to determine an optimal exchange rate level.

Lurking behind all of these reservations is the concern that capital controls might be implemented to serve some political purpose, or for the gain of the policymakers' friends, family and political supporters. A hands-off policy is obviously much more transparent.

## Empirical literature

Here are five "facts" from the empirical literature:

1. Controls on capital flows are not effective in limiting the size of flows. This is highlighted most recently in the paper by Forbes and Warnock (2011) that examines a large cross-country panel of data. The data have gross flows – inflows and outflows – rather than just net flows. And they have the gross flows demarcated by whether the owner of the capital is a foreigner or a local resident. The authors find no evidence that the degree of capital flows has any influence on the size of flows from foreigners during extreme episodes – episodes of capital surges (when

foreigners bring large amounts of money into a country) or episodes of stops (when they take money out.)

This is consistent with a long line of literature, including the paper by De Gregorio et al. (2000), that finds little effect of capital controls on the size of flows.

However, this finding is subject to the caveat I raised initially on measuring the effects of any policy.

2. However, there is evidence that controls can tilt the composition of flows. De Gregorio et al. (2000) find that Chilean controls changed the composition of flows toward longer maturities. This finding is confirmed in the recent study by IMF researchers Ostry et al. (2011) The meta-study of Magud et al. (2011) finds this to be a robust outcome over many empirical studies. Ostry et al. also find that the currency composition of flows can be effectively altered by policies that discourage borrowing in foreign currencies.
3. Ostry et al. (2011) find that countries with capital controls rebounded more quickly from the financial crisis than those that did not have controls. They examined the change in economic growth from 2004–07 to 2008–09, and found that countries with capital controls did better. This finding holds up even when capital controls are instrumented with a binary variable that measures whether a country had a BIT (bilateral investment treaty) with the US – countries with BITs tended to have fewer capital controls.

Still, we have to wonder whether these findings are capturing the effects of capital controls per se, or other features of economies that adopted capital controls.

4. Chinn and Ito (2006) find that allowing capital inflows does speed the development of local financial markets, especially local equity markets. But there is a threshold effect – this works only in countries that score highly in measures of bureaucratic quality and law and order. Again, the question we need to worry about is whether the openness of capital markets is more a proxy for other conditions with the economy that allow for development of financial markets.
5. There is mixed evidence on the question of whether capital controls actually allow countries to control real exchange rates and have more independent monetary policy, though the meta-study of Magud et al. tends to favor this conclusion. It is appropriate again to emphasize the limitations of the empirical studies on the effectiveness of capital controls:
  - It is very hard to separate the effects of capital controls from the conditions that led the controls to be imposed. It is also hard to separate out, in a cross-country study, the presence of capital controls from other features of the economies of countries that tend to adopt capital controls.
  - At the very best, we have not gotten far on the question of whether capital controls actually benefit the economy, in the short run and especially the long run. Also, we have essentially no evidence on the relative benefits of capital controls versus other policies to deal with the distortions that I mentioned.

## Final thoughts

One major concern that all countries face now is the stability of our financial institutions. We are seeing once again in Europe, as we did in the US and other countries in 2008, that governments are the ultimate insurers of our financial system. If governments are to provide

this insurance, the cost must be regulation to ensure financial institutions do not follow policies that lead to excessive risk.

Emerging markets are in an especially bad position. They do not have the resources to bail out the financial system if there is a collapse in their own countries. But they cannot unilaterally impose higher standards than the richest, most financially developed, countries. Unilateral risk management policies may not be effective, as global financial institutions might find ways to disguise the risk to the emerging market's financial system.

But worse, if the regulations are effective, capital might flow away from those countries that impose the regulations, even if they are productive economies deserving of inflows.

The emerging markets have a strong interest in how banking and financial regulations are being pursued in the US, Europe and other major financial markets. It's important to make their voices heard.

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