Managing Capital Inflows in Emerging Markets
The Case of Colombia

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1. Introduction

The return of large capital inflows after the global financial crisis poses one of the most important challenges for policy makers in the emerging world. In Latin America, capital inflows jumped from USD 65 billion in mid -2009 to more than USD 260 billion in 2010 (IDB, 2011). Their composition has also changed with larger shares being received as portfolio investment or external debt, instead of the FDI flows that prevailed before 2008. Although there are medium term fundamental reasons for this situation to persist (e.g. global rebalancing or monetary policy in the largest developed economies), the significant shift in the size and composition of capital flows implies serious challenges for macroeconomic and financial stability in some emerging countries.

The expansionary countercyclical monetary policy response to the crisis is being undone in the major economies of the region. While this is necessary to preserve price and financial stability, it entails considerable difficulties in an environment of large capital inflows and must be complemented with other macroeconomic and macro-prudential policy measures to prevent the emergence of critical vulnerabilities in the future. Thus, the management of capital flows must be understood in the context of an efficient policy mix. This is not something new for Latin America. The remarkable resilience of our economies in the face of the global crisis was, in part, the result of countercyclical macroeconomic and financial policies undertaken *before* the crisis that minimized financial fragility, anchored inflation expectations and contained aggregate expenditure growth. We must learn from our success as well as from our failures.

This note presents some thoughts about an adequate policy response to the new wave of capital flows and the specific role that macro-prudential FX regulation plays in Colombia.

2. Risks of Capital Inflows

The strong resumption of capital inflows is a concern in most of the largest Latin American economies not only because of their increased size, but also because of their composition. In 2006, large FDI flows made up the largest chunk of total inflows (63%) (IDB, 2011) and were driven by rising relative prices for the commodities exported by these countries. After the crisis, relative commodity prices resumed their upward trend and FDI recovered, but a larger share of capital inflows has taken the form of portfolio investment and foreign debt (69%) (IDB, 2011 and IMF(a), 2011). Together with a monetary or fiscal policy stance that is still loose, these phenomena are legitimate sources of alarm.

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Several countries in the region are already in an expansionary phase of their business cycles, as measured by their output gaps (IMF (b), 2011). In this situation, loose macroeconomic policies themselves risk an overheating of the economy. Large capital inflows may amplify the expansion by fueling expenditure. This is particularly the case with non-FDI flows. Commodity-related FDI is usually concentrated in a few exporting sectors of the economy and is associated with a large imported component. Foreign debt or portfolio investment flows are more easily irrigated to several sectors in the economy, so they may have a larger impact on domestic spending and the demand for non-tradable goods and services. Therefore, they may represent larger risks for external sustainability, inflation or excessive real appreciation of the local currency.

Also, large capital inflows may push credit and asset price growth even under flexible exchange rate regimes. Increased demand for local assets, including bank liabilities, would raise the money demand. In an Inflation Targeting regime, this is accommodated by the Central Bank, so additional credit expansion is allowed. Of course, this effect is much smaller than under a fixed exchange rate regime in which non-sterilized intervention multiplies credit and the defense of the exchange rate maintains an expectation of significant appreciations of local assets. Again, these impacts are likelier with non-FDI inflows, which are more easily channeled through domestic financial or capital markets. In consequence, the probability of asset bubbles and of firms and households over-extending may mount.

Moreover, the composition of the capital inflows may exacerbate other risks. Short term debt flows raise liquidity or currency risk for the real sector or the financial system. In general, the combination of loose macroeconomic policies and large capital inflows in the expansionary phase of the cycle increases financial and real vulnerabilities, and makes the adjustment of the economy after a "sudden stop" more painful. The experience of some of our economies in the nineteen-nineties is a grim reminder in this regard.

The above concerns are particularly relevant for countries in an intermediate stage of financial development. In countries with a low degree of financial development, capital inflows are "naturally" restricted by illiquid asset markets and high transaction costs. In countries with advanced financial development, there are deep FX and other derivative markets, and sufficient capacity to effectively and safely manage large capital inflows. Risk is more easily dispersed and valued, so that the financial and macroeconomic hazards posed by capital inflows are alleviated.

In countries with an intermediate level of financial development, liquid financial markets and instruments exist and permit the investment of foreign capital, but the ability to safely deal with these inflows is limited. Liquidity and currency mismatches in the financial or the non-financial sectors are important issues, and the markets for hedging instruments are sometimes not well-developed. Indeed, the literature on the subject establishes that a well-functioning financial market is a pre-requisite for countries to reap the benefits of capital openness (e.g. IMF, 2010 and Yellen, 2011).

Thus, in these countries the financial system constrains their ability to benefit from capital inflows and exacerbates the impact that the latter have on the business cycle, the exchange rate, asset prices and credit.

3. Policy Options

What are the policy options for these countries? From the foregoing discussion, it follows that the policy prescription should include measures that do not seriously hamper financial development on a permanent basis, so that the country may enjoy the advantages of an open capital account in the long run (larger investment, greater competition for the domestic financial institutions, better institutions and practices, discipline on domestic policies and enhanced risk sharing). More generally, policy actions should minimize costly distortions for the economy and ensure sustainable growth.

Hence, an adequate policy mix to respond to large capital inflows should include the following elements:

a. Keeping aggregate expenditure on a sustainable growth path. This requires taking measures in the following dimensions:

- A fiscal policy that increases public saving. This is crucial in the context of an overheating economy to curb unsustainable external imbalances and inflationary risks. It is also necessary to ease the costs of the real appreciation of the currency since it implies a lower demand for non-tradable goods, smaller net (external) public financing requirements and a reduced need for distortionary tariffs and taxes that increase local costs of production.

- A monetary policy aimed at keeping inflation and inflation expectations on target as well as smoothing the business cycle. In particular, this means avoiding the creation of excessive credit that could fuel large domestic spending. If sustained capital inflows and other fundamental factors imply an inevitable real appreciation of the currency, then the worst way to get that is by means of an increased inflation rate. It could not only be very costly to revert later on, but also limit the ability of the central bank to react counter-cyclically to a change in external conditions.

- Exchange rate flexibility to prevent capital inflows from translating into an unwarranted expansion of local credit. Higher terms of trade and foreign demand for commodities that usually come with capital inflows are also better handled by allowing the exchange rate to work as a shock-absorber and thus avoiding a heavy impact on domestic demand and inflation. Exchange rate flexibility also permits countercyclical monetary policy responses to external and internal shocks (by granting independence to monetary policy) and is a vital tool for limiting currency mismatches (by forcing agents to internalize exchange rate risk).

b. Maintaining financial stability through appropriate micro and macro–prudential policies. These types of policies are important because:

- They reduce local financial distortions (e.g. agency problems or maturity mismatches) that become exacerbated when large capital inflows are intermediated through the domestic financial system. Adequate and possibly countercyclical capital, provisioning and reserve requirements are examples of policy measures that are useful in this regard.

- They enhance the ability of the financial system to intermediate foreign capital in a *sustainable* fashion. By keeping the financial intermediaries' liquidity, currency, credit and market risk in check, they ensure that foreign funding is stably channeled toward projects with good risk/return profiles without exposing the economy to systemic hazards that may lead to an abrupt interruption of payments or credit supply.

- For the same reasons, they improve the ability of the economy to absorb external shocks. As the vulnerability of the financial and non-financial agents is reduced, the probability of contagion from trouble elsewhere falls (the country may differentiate itself more easily) and the adjustment of the economy after a shock is less costly (real or financially adverse external shocks need not translate into domestic financial instability). Furthermore, tightening monetary policy, in the case of an overheating economy, or a depreciation of the currency, in the case of a negative foreign shock, are more feasible in the absence of excessive leverage, liquidity and currency risks.

All the components of this policy mix are important. A current worry is the fiscal policy stance in some countries. As mentioned before, central banks are undoing the expansionary monetary policy they implemented during the crisis. With a background of large capital inflows and loose monetary policy in the developed world, this move may be attracting foreign capital which could result in strong currency appreciation and the possible accumulation of financial stability risks. In this context, a pro-cyclical fiscal policy would aggravate these outcomes.

Macro-prudential measures could be adjusted to compensate for this, but at the cost of introducing distortions as they would probably deviate from their desirable, long run levels. In a protracted episode of capital inflows and expansionary fiscal policy, this cost grows fast when macro-prudential measures are effective and financial development may be hindered. Alternatively, the persistence of fundamental factors encouraging currency appreciation and high domestic returns (overheating economy and expansionary fiscal policy) may in time reduce the effectiveness of some macro-prudential measures as agents have incentives to circumvent them. This is especially the case of capital controls. The fiscal policy component of the policy mix is, therefore, critical.

On the other hand, prudential policies should not necessarily be regarded as "measures of last resort," as stated by Ostry et al. (2010 and 2011). Depending on the size and speed of the capital inflows or the other shocks that may be occurring at the same time, there could be a role for the *simultaneous* use of macroeconomic and macro-prudential policy

measures, including capital controls. As it will be explained below, macro-prudential policies must be viewed as parts of policy packages aimed at mitigating specific risks the economy is facing. For example, if policy-makers are concerned about rapidly growing leverage on the part of residents, a cost/benefit analysis may show that capital controls are necessary along with internal macro-prudential policies *and* a countercyclical fiscal policy.

The specific role of capital controls and FX regulation in managing capital inflows must be regarded in this setting; i.e. as macro-prudential measures that belong to a policy package. In this sense, they must be used as complements, not substitutes, of appropriate fiscal, monetary, exchange rate and other macro-prudential policies while acknowledging that their use often stems from institutional or policy shortcomings that must be addressed in time. This is the context in which we design FX regulation and capital controls in Colombia.

4. FX regulation and capital controls in Colombia

Specifically, in Colombia FX regulation and capital controls are used to enable the operation of a flexible exchange regime and a countercyclical monetary policy, and to curb excessive leverage and external liquidity risk exposure by the private sector. To allow exchange rate flexibility and the adequate functioning of countercyclical policy, we use regulation of *indefinite* duration that restricts currency and FX maturity mismatches of financial intermediaries. To limit leverage and external liquidity risk, we use *temporary* instruments like the URR.

These policy measures are always decided within a cost/benefit analysis framework in which the policy objectives are clearly stated. Of course, the assessment of the cost/benefit balance is not always easy. Some costs are hard to quantify and refer to medium to long term effects of the policy actions. For example, the costs of constraining financial intermediaries' currency risk or FX maturity mismatches are not clear. Furthermore, some benefits of the policy measures are highly uncertain or the evidence of their effectiveness is controversial. For example, the evidence of the effectiveness of URR in reducing total capital inflows or to influence the exchange rate is far from clear-cut.

a. Indefinite FX regulation. This refers basically to two measures:

- Limits to the net open FX position of financial intermediaries are set at 20% and -5% of net worth. This restriction is very common in emerging economies (Ostry, et al. 2011) and is obviously intended to limit currency risk of systemically important institutions in an economy in which the nature, size and frequency of external shocks require sharp adjustments of the real exchange rate.

- Foreign loans obtained by local financial intermediaries may only be used to fund assets denominated in the same currency and with a maturity that is less than or equal to that of the loans. This measure is intended to prevent FX maturity mismatches in the financial system due to the fact that the Central Bank can play only a limited role as "lender of last resort" in foreign currency given a finite level of international reserves.

As can be seen, Colombian regulation in this regard is rather tough by international standards and is based on the perception that its benefits are greater than its costs in most states of nature. Among the benefits that are concrete, certain and highly valued by the Central Bank are the preservation of financial stability and the ability to float without significant restrictions after an adverse external shock. The presence of large currency mismatches in the financial or the non-financial sectors may be a heavy constraint on allowing the exchange rate to work as a shock absorber, which is what happened to several countries in the region during the nineteen nineties.

Since these macro-prudential regulations are applied to financial intermediaries that are closely monitored by the Central Bank and the Government, their effectiveness is almost certain. On the other hand, their cost in terms of long term financial deepening and development are uncertain and hard to assess. This explains the indefinite character of these measures.

An illustration of the effects of these regulatory measures is given by the fact that Colombia did not experience the stress episodes that other countries underwent in their FX and monetary markets after the Lehman bankruptcy. The Colombian Peso depreciated by more than 30% between August 31st, 2008 and March 31st, 2009 without causing any serious financial trouble. Better yet, the Central Bank was able to reduce reserve requirements in the last quarter of 2008 and to aggressively cut policy interest rates throughout 2009 with no fear of exchange rate-related bankruptcies or skyrocketing inflation expectations.

In addition to the regulation just described, the Central Bank has imposed limits on the "cash" net FX open position and the gross FX derivative position of financial intermediaries as a proportion of their net worth. The former is similar to the net FX open position, but excludes derivatives. It constrains the intermediation of foreign funding by local financial institutions and curtails the appreciation (depreciation) of the currency by restricting the capacity of Colombian banks to buy (sell) FX forward to residents or non residents that wish to increase (decrease) their exposure to Colombian peso risk. This measure has been in place since 2004. The limit on the gross FX derivative position of financial intermediaries was established in 2007 to control the counterparty risk of some institutions that had very large long and short positions in the OTC FX derivative market and to complement other policy actions aimed at moderating the appreciation of the currency.

Both measures are deemed to be effective because, again, they apply to financial intermediaries under strict supervision by the Government and the Central Bank. In addition, financial institutions are central elements in the architecture of the Colombian spot and derivative FX markets, so limits on their operations are bound to affect the equilibrium prices in those markets. However, unlike the regulation of currency and FX maturity mismatches, the cost of these measures is more tangible and is related to the insufficient supply of hedging instruments for exporters and other agents. In particular, the "cash" net FX open position limit has been binding at several points for a limited time,

during which, consequently, forward rates have been consistently below the level implied by the interest rate differential.[2]

Hence, the desirability of making these measures permanent is less clear than in the case of the regulation of currency and FX maturity mismatches, and is a matter of continuous discussion and scrutiny at the Central Bank. Interestingly, these policies are similar in nature and scope to the ones implemented by Korea a few years later (Ostry et al., 2011).

b. Temporary FX regulation. In this case, the benefits expected from the policy actions are greater than their costs in *some* specific circumstances. Moreover, the effectiveness of the measures tends to wane over time, as agents are able to find means to circumvent them. These are the reasons why measures in this category are transitory in nature. In Colombia, the URR belongs to this group. This is a requirement to hold a fraction of a foreign loan as an unremunerated deposit at the Central Bank for a specific period of time. Hence, by design, the URR discriminates against short term debt flows. In Colombia, the URR was widely used in the nineteen nineties. It was set to zero after the sudden stop of 1999 and was reactivated in 2007 for more than a year. A similar requirement was established by the Government for portfolio investment for roughly the same period.

The effectiveness of URR has been a matter of extensive study and discussion, both in Colombia and elsewhere (Rincón and Toro, 2010). Overall, it seems to be useful for shifting the composition of capital flows away from short term debt inflows and into longer term debt and other types of capital flows. Its effects on the size of total inflows, the exchange rate and the autonomy of monetary policy are more controversial. Some studies find no effect on total inflows or the exchange rate, but argue that it may have a role in reducing the response of the exchange rate to movements in local interest rates. An exploration of the coherence of these results would be in order. Other studies find significant effects in total inflows.

In our most recent experience (2007-2008), the URR was imposed in combination with marginal reserve requirements on domestic deposits, again as part of a policy package. The purpose was to curb excessive credit growth. It was believed that marginal reserve requirements could attract capital flows by raising domestic lending interest rates. This would have caused a larger external indebtedness, possibly with some degree of currency mismatch. Since the idea was to keep leverage in check, URR was viewed as a natural complement to domestic reserve requirements.

Based on the evidence and on this experience, we conclude that URR may be useful for containing total leverage (internal and external) of residents. It could have also been helpful in reducing external liquidity (rollover) risk since it shifts flows from short term debt to longer term debt and different types of capital inflows. Therefore, in some cases, temporary measures like the URR may help preserve financial stability.

[2] The limit on gross FX derivative positions has not been binding for most intermediaries since 2007.

4. Conclusions

The current performance of capital flows and of the aggregate growth creates risks for the sustainability of growth and financial stability in a significant number of emerging countries, especially in those which are commodity producers and have a financial system at an intermediate level of development.

The macroeconomic policy steps taken to confront these risks should minimize costly distortions of the economy and ensure sustainable growth. Specifically, to keep aggregate expenditure on a sustainable growth path, the following are necessary: a fiscal policy that increases public savings, a monetary policy directed towards keeping inflation and inflation expectations low and stable as well as contributing to smooth the economic cycle, and exchange rate flexibility. It is also wise to protect the stability of the financial system through appropriate micro- and macro-prudential policies.

The specific role of capital controls and of FX regulation in handling capital flows should be understood in the overall framework of the three basic pillars of macroeconomic policy. That is, their use should always be understood to be a complement to, not a substitute for, appropriate policies in the fiscal, monetary, foreign exchange and macro-prudential fields. It should also be recognized that their use normally arises from weaknesses in the institutional and policy framework that should be faced in a timely fashion. At least, that is what we at the central bank of Colombia have understood.

Specifically, in Colombia, FX regulation and capital controls are used to enable the operation of a flexible exchange regime and a countercyclical monetary policy, and to curb excessive leverage and external liquidity risk exposure by the private sector. To allow exchange rate flexibility and adequate functioning of countercyclical policy, we use regulation with an indefinite duration that restricts financial intermediaries' currency and FX maturity mismatches. To limit leverage and mitigate external liquidity risk, we use temporary instruments, like the URR.

These policy measures are always decided within a cost/benefit analysis framework in which the policy objectives are clearly stated. Of course, the assessment of the cost/ benefit balance is not always easy and the instruments that are used do not always prove to be the last resort instruments. Depending on the size and speed of the capital inflows or the other shocks that may be occurring at the same time, there could be a role for the simultaneous use of macroeconomic and macro-prudential policy measures, including FX regulations.

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