Resilience in Latin America: Lessons from Macroeconomic Management and Financial Policies*

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1. Introduction

Imagine a really big global crisis, second only to the Great Depression. What would be its impact on emerging market economies, in particular Latin America? If this question had been asked ten years ago, the unanimous answer would have been "disaster." Actually the crisis happened, but it was not a disaster in emerging markets. Indeed, emerging market economies (EMEs) around the world suffered with the crisis, some of them had quite sizable contractions, but overall the damage was limited and the recovery was very strong. Therefore, an appropriate answer today to the above question would be "bad, but disaster, no."

The purpose of this paper is to examine the resilience of emerging market economies, with particular attention to Latin America. As I will argue below, this is the reward for good macroeconomic and financial policies, which allowed a significant monetary and fiscal expansion in the context of a resilient financial system.

To tackle this issue, one could do panel regressions on determinants of economic performance to gauge the main factors behind the recent economic success of emerging markets. Some recent, interesting work I will discuss below has pursued this route. However, I think this kind of work has some limitations. For one, the sample is still too short. Indeed, much better evidence will be gathered once a full business cycle has taken place. Now, what the evidence may by capturing is the deepness of the contraction and the speed of a still incomplete recovery. For another, dependent variables tend to be too blunt. The econometric work should be complemented with a more detailed analysis of particular cases, since there are institutional nuances and differences among apparently similar polices that statistical work cannot distinguish. This is what I plan to do in this paper exploring the resilience of emerging market economies to the global financial crisis.

The focus of this paper is on Latin America. However, there are issues that go beyond the region and are similar and relevant for the entire emerging world. Indeed, in

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several parts I will refer more generally to emerging market economies, and present evidence for a wider set of countries. This also allows placing the Latin America experience in a broader perspective.[1]

This paper follows with a discussion on the main factors that explain the success of emerging market economies. In particular it focuses on macroeconomic policies, exchange rate flexibility, and good luck. The next section is devoted in greater detail to the resilience of the financial system. Next is a discussion on international reserves, which are another factor that made emerging markets more resilient. The paper concludes with some final remarks.

2. The Resilience of Emerging Market Economies

Emerging markets, and in particular Latin American economies, were very resilient to the global financial crisis. Most of them suffered recessions, the others severe economic slowdown. But the effects of the crisis were much milder than traditional adjustment after global recessionary shocks. The recovery, in turn, has been very strong. Now that economies are fully recovered, and GDP has reached levels consistent with full capacity utilization, and even more in some cases, new challenges appear.

There are a number of factors that help explain this performance, and in this section I will briefly discuss some of them, leaving the others for the next sections. The main factors behind this unprecedented performance have been:

1. Good initial macroeconomic conditions which allowed strong monetary and fiscal stimulus.
2. A cornerstone of the macroeconomic framework was exchange rate flexibility. As flight to safety took place, currencies of emerging market economies depreciated sharply, eliminating incentives for speculation against them. The fear of floating of many other previous experiences was over. Flexibility has not been extreme, as several countries have used a combination of exchange rate intervention and capital controls to mitigate the appreciation of their currencies.
3. Good luck. Before the crisis, EMEs faced very good international conditions to expand exports. Latin American countries, most of them being exporters of primary commodities, enjoyed very good terms of trade as commodity prices skyrocketed during the second half of the 2000s. After a sharp decline in

[1] For the purpose of limiting the number of countries I work with Argentina, Brazil, Chile, Colombia Mexico, Peru, Uruguay and Venezuela. In some cases I exclude countries with no data available, which in this paper happens occasionally for Venezuela and Uruguay. For the case of Asia I consider the Korean Rep., India, Indonesia, Malaysia, the Philippines, and Thailand. For emerging Europe I consider the Czech Republic, Hungary, Latvia, Lithuania, Poland and Romania.

commodity prices during the crisis they bounced back to very high levels, which persist to this day.

4. Strong, well regulated, and fairly simple financial systems. The exchange rate depreciation did not cause a financial collapse and financial systems were able to resume lending as soon as conditions improved.
5. High levels of international reserves. This has been one of the few explanatory variables found to be relevant in potential explanations of why EMEs performed well during the crisis. Regardless of the reason to accumulate foreign assets, high levels of reserves played an important role as a deterrent of attacks on the currency and fear of foreign insolvency. They reduced the probability of a sudden stop. They also provided a cushion, although not used massively, to potential lack of foreign financing.

In this section I will focus on points 1 to 3, while the next section will be devoted to the financial sector, and the following to reserves accumulation.

The ability to conduct expansionary macroeconomic policies hinged upon the sound initial macroeconomic conditions that EMEs faced. Fiscal accounts were, as ever, healthy. Levels of public debt were relatively low. Countries that had a windfall gain from high terms of trade saved before the crisis, having resources to spend during the downturn. Other countries were able to borrow to finance their fiscal expansions.

On the monetary side, the control of inflation was key to allow for monetary loosening. Despite the sharp rise of commodity prices during the buildup of the crisis, which lead to increases in inflation, the subsequent slowdown put enough downward pressure on inflation to leave room for cutting down interest rates. The response of inflation to exchange rate developments was much more muted than in previous episodes, and this was much due to exchange rate flexibility that reduced the pass-through from exchange rates to inflation.[2]

Figure 1 shows the levels of public debt in Latin American economies, which were not only historically low, but declined in the years previous to the crisis. Argentina and Brazil have debts close to 60 percent of GDP, while the rest have levels below those of the other emerging markets, and, of course, much below the levels of advanced economies.

The actions of fiscal policy during the crisis were in sharp contrast with the traditional policy responses of Latin American countries to recessionary shocks coming from abroad. In the past, authorities used to rely on monetary and fiscal tightening. Fiscal policy usually had to be contractionary, not because of bad judgment, but because there was no space to expand fiscal policy. Creditworthiness deteriorated during periods of bad external conditions and the ability to finance the budget was severely impaired. Therefore, liquidity constraints became binding, forcing a fiscal adjustment.

[2] For further discussion on exchange rate flexibility and declining pass-through, see De Gregorio and Tokman (2007).

This gave origin to procyclical fiscal policies, which followed a simple rule that can be summarized as "spend as much as you can finance."[3]

In previous external crises monetary policy was usually tightened because of fear of depreciation. The potential inflationary and financial repercussions of the weakening of the currency were so pervasive that authorities were very reluctant to allow a full exchange rate adjustment, and defended the parity with high interest rates. This was due to a large extent to rigidities in the exchange rate regime that induced currency mismatches in the corporate sector and a high response of price setters to infrequent changes in the exchange rate.[4]

In contrast, during the global financial crisis countries such as Brazil, Chile, Colombia, Mexico and Peru cut rates to historical lows. Although in most cases they have been raised, they still have not returned to the pre-crisis levels (Figure 2). From a comparative perspective, the monetary and fiscal expansions of Latin American countries, as well as Asian countries, were quite sizable (Figure 3). In Latin America the monetary stimulus was relatively large. Chile had one of the largest fiscal stimuli, owed to large fiscal resources available in the sovereign wealth funds built up during the copper price boom that preceded the crisis.

Most Latin American countries use flexible inflation targets to conduct monetary policy. Although in many advanced economies this strategy has been questioned for ignoring financial factors, they were essential in allowing for sharp, credible and effective monetary expansions. Indeed, recent evidence has shown that since August 2008 inflation targeting regimes have had a positive effect on post-crisis economic performance (de Carvalho Filho, 2010). This should come as no surprise, since monetary policy played a secondary role during the crisis, being mainly the result of severe financial dislocations. Therefore, countries with sound financial systems were able to engineer large expansionary policies.

Previous to the global financial crisis, the problem with monetary policy was precisely to deviate from pursuing price stability. In the U.S., when bubbles burst, monetary policy was loosened in order to provide a safety net to the financial system. This strategy of letting the bubble grow and mopping the mess after it burst was the so-called Greenspan put. This was a key ingredient to bubble formation. The collapse of the housing bubble was so large, that the Greenspan put was ineffective. Here we can draw a parallel with emerging markets' old tradition of managing exchange rates. Permanent promises of exchange rate stability, which set bounds to asset prices on

[3] Frankel et al. (2011) provide a recent empirical investigation of the procyclicality of fiscal policies in emerging markets. Their analysis takes decades as periods, so it cannot distinguish the cyclicality of the budget during the crisis. However, they still find for the period 2000-2009 countries graduating from procyclicality.

[4] There is some evidence that even in periods previous to the floating of exchange rates the corporate sector was quite matched in terms of assets and liabilities in foreign currency. Therefore, the fear of a financial crisis after a depreciation may have been unfounded. For the case of Chile, see Cowan et al. (2005).

the way up when the currency appreciated and on the way down when currencies depreciated, induced currency mismatches in the private sector. The fear of floating provided an implicit insurance against sharp currency fluctuations and reduced private sector incentives to hedge currency exposure. In contrast, the period of floating exchange rates has been also characterized by the development of the foreign exchange forward markets.[5]

Exchange rate flexibility played a crucial role to dampen the adjustment. At the height of the crisis, currencies in Latin America depreciated sharply, and the financial systems were able to accommodate the depreciation without untenable stress. In a period of few months, depreciations were about 60 percent, something not seen before (Figure 4). The figure shows that this happened not only in Latin America, but also in Asia. The depreciation responded to fundamentals, under the prospects that emerging markets could be hit disproportionately by the crisis. As this did not happen, currencies strengthened again. But also, the search for safe havens resulted in a depreciation of more risky and less liquid emerging markets' assets. The fact that exchange rates adjusted abruptly reduced incentives to speculate against further weakening. The war chest that reserves provided was an additional factor that helped exchange rates to adjust without major disruptions.

Finally, emerging market economies also faced very good external conditions. This is the good luck component of the resilience. The rapid growth of the developing world, in particular China, generated strong demand for exports from developing countries. In the case of Latin America, on top of the greater market access, several countries, being primary commodity exporters, enjoyed significant terms of trade gains. This did not happen in Asia, where terms of trade were stable, owing much to their broad industrial production base. Figure 5 shows the evolution of the terms of trade in panel (a) during the last decade. In panel (b) the bar corresponds to the range between the minimum and maximum levels for the period 1980-2010, and the figure shows the last data and the average for the period 2000-2005. Every country, with the exception of Mexico and Uruguay, enjoyed significant gains during recent years.

Indeed, one of the main risk factors in Latin America is a decline in the terms of trade. IDB (2012) has provided some simulation experiments with a decline in terms of trade. They consider a risk scenario that involves a deepening of the Eurozone crisis and a slowdown in China, which would result in a decline of 30 percent in commodity prices. The simulation exercise, which yields a worldwide recession, with Chinese growth falling 3 percentage points and recessions in the U.S. and Europe, would cause a decline in output in Latin America of 0.6 percent, somewhat smaller, but more persistent, than that of the global financial crisis. Overall, this simulation shows indeed the vulnerability of the region to a global slowdown and a fall in the price of commodities. But, as during the global financial crisis, Latin America would not suffer a major collapse, as was typical in the past. Although the simulation cannot distinguish

[5] See De Gregorio and Tokman (2007). In the context of the Greenspan put, this point was raised more than ten years ago by Miller et al. (2002).

differences across countries, there should be some differentiated impact as long as the resilience to terms of trade shocks relies to a large extent on the dependency of the government budget to terms of trade, and not all countries are in the same position, in particular after the crisis where a significant portion of the fiscal space was already used.

3. Resilient Financial System

The regulation of the financial system has been based on making sure that institutions are solid from a solvency and liquidity point of view. In addition, after the financial crisis, much discussion has been focused on financial regulation that limits the risk of spillovers from the financial system and particular institutions to the whole economy. Thus, the use of *macroprudential* rules, in addition to traditional *microprudential* ones, is a necessary complement of financial regulation. Thus, macroprudential tools are those that limit the systemic financial risks.

Systemic financial risk may arise from the behavior of the financial system through the cycle—the time-series dimension—, or from the interaction of particular institutions with the rest of the financial system—the cross-section dimension. Regarding the business cycle, the most important concern is the excess procyclicality of financial activities, while in terms of contemporaneous spillovers, the concern is mostly with systemic institutions whose risks can contaminate the entire financial system. They are the SIFIs (systemically important financial institutions).

Whether a particular policy is macro or microprudential is not always obvious. For example, limiting currency mismatches has both a micro component to limit foreign exposure of particular financial intermediaries, and also a macro component to minimize the risk of a financial crisis due to significant aggregate mismatches. Indeed, a rule that reduces the risk of insolvency of single institutions to macroeconomic shocks, by definition will be also protecting the integrity of the whole system.

In this regard, Latin American countries have been applying macroprudential rules for a long time, even if they did not call it that. In the remaining of this section I will discuss some features of Latin American banking systems that help to explain their resilience to the global financial crisis.[6]

A first characteristic of the Latin American banking systems are their relatively high levels of capital and low levels of leverage (Figure 6). All countries had regulatory

[6] For recent examination of the use of macroprudential tools and the institutional arrangements of financial regulation in Latin America, see Céspedes and Rebucci (2011), Cifuentes et al. (2011), Jácome et al. (2012) and Tovar et al. (2012). Given the complexities that a full comparative analysis involves, the reviews are in general partial and focused on country experiences, as I also do in this section. In my case most of the examples and details come from the Chilean experience.

capital above the 8 percent required by Basle II.[7] This is the result of higher regulatory capital requirements and limits on leverage, as well as the internal strategies of local banks willing to hold larger levels of capital.

Of course, the crisis revealed that leverage could have been larger through off-balance-sheet investment operations that reduced leverage artificially. This is at the center of the issue of leveraging in the trading book. Proposals along the Volcker rule of separating investment banks from commercial banks go in the direction of reducing financial risks. The route followed in emerging markets, which avoids complicated regulation, is to set limits to the instruments that can be held by banks. For example, in the case of Chile, banks can only hold corporate and Chilean bonds. In terms of derivatives, only interest rate and exchange rate derivatives are allowed. All other operations must be done through other financial institutions, which are also subject to financial regulation and can be subsidiaries of banks. More recently, Brazil and Mexico have also been limiting the use of derivatives in the banking system.

The strong financial system did not avoid a sharp contraction of credit during the peak of the crisis. However, credit expansion resumed as the economies recovered. It is difficult to disentangle how much of this was due to a decline in the demand for credit or restrictions from the supply side. Certainly, both factors may have played a role, as the increase in uncertainty tightened financial conditions and reduced demand, as surveys on financial conditions showed.

The degree of financial deepness, from the point of view of the banking system, is usually measured by the ratio of private banking credit to GDP. Latin America ranks relatively low, as do many other emerging markets. Therefore, periods of financial deepening may be associated with credit booms, not only because average household debts are increasing, but also because of the entrance of new households to the banking system (bancarization).

Figure 7 shows the degree of deepness of the banking system for Latin America and other regions. First, indeed, the degree of deepness is quite low, except for the case of Chile, and in most countries of the region there was an increase during the 2000s. However this increase was much milder than that of emerging Europe or advanced economies. In the latter cases, it is more appropriate to talk about credit booms. The recent evidence is in sharp contrast with the experience of liberalization of the 1980s, which featured significant credit booms that were followed by the debt crisis, and the lost decade. During that period there was a rapid increase in domestic credit, fueled to a large extent by capital inflows in the form of external debt. Countries that had a higher expansion were also the ones that had greater output losses from the crisis (De Gregorio and Guidotti, 1995). Prudential regulation, together with macroeconomic

[7] Chile appears to have the largest leverage ratio in the region. However, it is one of the countries that had the lowest volatility of output, and the evidence shows that the lower the volatility, the higher the leverage. See Central Bank of Chile (2009) for further evidence.

policies that did not pursue unsustainable expansions may have been behind this fact, although more empirical research is needed to contrast both experiences.

Another myth that the debt crisis terminated was the idea that when the external imbalances are of private origin they are not a problem (the Lawson doctrine). The Chilean case was a prime example of a large private imbalance causing a very severe crisis. More recently we have seen this happen all over Europe.

The most used instrument to reduce credit expansion has been reserve requirements, by which banks are required to hold some fraction of their deposits as liquid reserves. Raising reserve requirements increases the costs of borrowing. All countries have reserve requirements, but as a macroprudential rule they must change along the business cycle. Brazil, Colombia and Peru have used in recent years changes in reserve requirements to stem credit booms. According to Tovar et al. (2012) the effects of this policy is moderate and transitory. Although reserve requirements may be effective, they have also some side effects as banks will look for new forms of funding to alleviate raising requirements, which may end up generating vulnerabilities. They may also move credit to unregulated credit providers, incentivizing the shadow banking system.

The Achilles heel of financial systems in emerging markets has been currency mismatches. However, this is not only in the banking system, which is easy to regulate. The problem has not been in the balance sheet of banks, but in the exposure of corporations that borrowed in foreign currency and have most of their activities in the non-traded goods sector. Moreover, in Emerging Europe even mortgages were done in foreign currency. This exposes the financial system to weaknesses stemming from currency mismatches of their borrowers. All Latin American countries, surveyed in IDB (2005), have regulations on currency mismatches in the banking system. This goes from quantitative limits to currency exposure to include exchange rate exposure in quantifying credit risk, with its consequences on capital requirements. At the corporate level, regulation also is based on requiring to internalize the risk of currency exposure of their borrowers. For example, in the case of Chile, this results in more provisions to foreign currency lending when the borrowers have most of their income in domestic currency. Of course, this requires more forward-looking provisions, something that is being currently studied and implemented in several Latin American countries (Cifuentes et al., 2011). In Peru, a dollarized economy, as well as Uruguay, additional capital requirements are applied to foreign currency lending to un-hedge borrowers.

From a factual point of view, as shown in the previous section, the balance sheets of banks were resilient to large, and unprecedented, fluctuations in the exchange rate. Only in the cases of Brazil and Mexico in Latin America, and Korea in Asia, some large corporations were exposed to exchange rate derivatives. These derivatives were highly complex and there was concern from the financial stability standpoint. The lesson to be learned from this event is that markets require more disclosure in the financial statements of corporations about their effective currency exposure,

especially when dealing with complex instruments. Banks should take this into account when making provisions and extending credit.

Another important source of financial risks is the exposure of the domestic banking system to foreign banks. Cross-border flows are highly volatile. Figure 8 shows the evolution of cross-border claims of foreign banks in Latin America and Asia. The cycle was more pronounced in Asia. In countries like Korea and Malaysia, the decline in 2008.IV was 6.7 and 5 percent of GDP, respectively, while the maximum decline in Latin America was in Chile, with a fall of 3 percent of GDP.

The composition of foreign claims according to the source country is presented in Figure 9 for emerging Europe, Asia and Latin America. While emerging Europe is more exposed to European banks, and Asia is more equally exposed across regions, Latin America is exposed to Spanish banks, mainly Santander and BBVA. Spanish banks have followed an arm's-length strategy. But the main feature, which could have made Latin American countries less affected by its exposure to foreign banks, is that most foreign banks operating as commercial banks have their affiliates constituted as subsidiaries. Thus, the subsidiary operates just as a domestic bank, with its own capital, its own board of directors, and strict rules for deposits of the subsidiary in the parent bank.[8]

Subsidiarization does not necessarily produce full "ring-fencing," as the cases of Central and Eastern European countries shows, where foreign banks also operated as subsidiaries. But subsidiarization also induces more local funding. Figure 10 shows that within the three regions, Latin America is the one where funding comes more heavily from local sources.[9] Indeed, Kamil and Rai (2010) examine why Latin American financial systems were resilient to the global financial crisis. They show that this happened because global banks' credit is mostly channeled in domestic currency and foreign banks operate as local subsidiaries, funded mostly with domestic deposits. Therefore, subsidiarization, strong regulation on currency mismatches, broad base of deposit funding, low reliance on short-term wholesale funding, and a simple trading book, may help to understand the strength and resilience of the banking system in the region.

Finally, another macroprudential tool being discussed for emerging markets is capital controls. As with the case of reserves accumulation discussed in the next section, capital controls are instruments used with a dual purpose: limiting exchange rate

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[8] Many countries adopt the same regulation for branches and subsidiaries. The most relevant difference is that branches do not have a local board, while subsidiaries do. With branches, the foreign bank is responsible for any problem in its affiliate, and hence a subsidiary limits contagion. In addition, subsidiaries can have local or other partners. These are strong incentives for banks to use the subsidiaries model to expand across regions.

[9] For further discussion on cross-border banking, see CIEPR (2012), and, for an analysis of vulnerabilities of Latin American economies to its exposure to Spanish Banks, see IDB (2012), chapter 8.

appreciation and fostering financial stability. However, these concerns have two different sources in terms of the financial accounts. The pressures on the exchange rate depend on net capital flows, while the financial stability considerations depend on gross flows.

Net inflows are the counterpart of the current account deficit, and the exchange rate depends on the savings-investment balance of the economy. In recent years, and contrary to the surge of capital inflows of the early 1990s, current account deficits in emerging markets have been limited, and even many commodity-exporting countries have built current account surpluses. Therefore, they are net exporters of capital. Of course, in the data we may see large net inflows, but they have been mostly associated with the accumulation of reserves, which has been geared to a large extent to protect competitiveness.

On the other hand, there has been a large increase in gross flows as a result of greater financial integration. These flows can have important effects on financial stability, and the use of macroprudential policies may be called for. This has been the case of Korea, where large inflows to the banking system have been considered a source of potential financial risks. Korea is a country with very large foreign funding. Korea implemented a capital levy on non-core liabilities in August 2011. Banks pay a levy of 20 basis points for foreign-currency-denominated liabilities of less than 12-month maturity (CIEPR, 2012). Although this levy may reduce foreign borrowing by banks, it does not necessarily reduce net inflows, as portfolio shifts may change the source of external funding. In Latin America, Peru has used a similar levy on foreign borrowing and also applied fees for the sale of Central Bank of Peru bonds. Brazil has experimented with broader capital controls, by using reserves requirements on foreign borrowing and a tax on transactions of fixed-income instruments and equity. Colombia applied an unremunerated reserve requirement, similar to that of Chile in the 1990s, during 2007-2008.

The evidence on the effects of capital controls on financial stability and on exchange rates is inconclusive. The preservation of financial stability has happened both in countries that did and did not apply capital controls, while exchange rates have behaved in similar patterns regardless of the use of capital controls. The jury is still out, but two final comments are in order. First, capital controls may be a tool in disguise to fight other distortions that encourage capital inflows, such as very high interest rates. This may have been the case of Brazil in recent years. And second, Chile, the poster child for capital controls during the 1990s, was able to weather the big financial storm without the use of controls. Perhaps the experience of the 1990s is reminiscent of the more recent case of Brazil, where very large interest rate differentials encouraged capital inflows.[10]

[10] For a review of the Chilean experience with capital controls, see Cowan and De Gregorio (2007), and for a large set of countries, see Magud et al. (2011).

4. The Accumulation of International Reserves

As discussed before, emerging markets have accumulated large amounts of reserves in the last years (Figure 11).[11] The holding of international reserves are one of the most common macroprudential policies in emerging markets to reduce the risk of balance of payment crisis, but also the process of reserves accumulation serves also for exchange rate purposes.[12]

International reserves play a dual role (Aizenman and Lee, 2005). On the one hand, they provide a buffer against sudden stops of capital inflows. This is the self-insurance, or precautionary, motive to accumulate reserves. International reserves reduce the risk of balance of payment crisis. On the other hand, the accumulation of reserves entails an intervention in the foreign exchange market, ameliorating the pressures for appreciation. This is the mercantilist motive of reserves accumulation. Although the impact of sterilized intervention is not entirely clear, it may transitorily prevent an appreciation of the currency.

The high level of reserves during the global financial crisis played an important role in the resilience displayed by emerging economies. Indeed, the level of international reserves has been one of the few variables that have shown to be relevant in mitigating the output costs of the crisis (Frankel and Saravelos, 2010; Gourinchas and Obstfeld, 2012). Indeed, during the peak of the crisis, countries that had larger volumes of reserves experienced a smaller increase of their CDS spreads. This reduced the impact of the crisis on financing costs.

International reserves may have rendered credible the provision of liquidity in some cases and protected the exchange rates in others. In particular, Brazil, Korea and Mexico, which intervened in complicated moments during the financial crisis, due to difficulties in their corporate sectors, may have seen the credibility of these measures enhanced by their massive reserves holdings. Thus, the level of reserves and the significant depreciation of their currencies may have helped mitigate the effects of the global financial crisis. As most countries did not deplete reserves massively, this could be interpreted as reserves having little impact as insurance. However, the financial resilience of emerging market economies strongly suggests that having a high level of reserves, even if unused, can be a strong deterrent to speculation when facing sharp changes in global financial conditions. The majority of models seeking to determine the adequate level of reserves assume that they are used. Still, their deterrent effect is substantial, whether used or unused.

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[11] The figures are expressed as percentages of GDP. In some cases the decline of this ratio is just the result that reserves have grown less than GDP valued in dollars, such as the case of Chile and Indonesia, although their levels in dollars has increased over time. The fact that in 2011 most countries had more reserves as a fraction of GDP does not imply they were never used, since some countries actually used a small fraction of reserves during the crisis, although they kept accumulating thereafter.

[12] The issues discussed in what follows are developed with greater detail in De Gregorio (2011).

The dual role of reserves accumulation explains why self-insurance is so prevalent in emerging markets, and the current level of reserves could indicate that EMEs are over-insured. But, understanding over-insurance is necessarily related with interpreting the other component of demand for reserves: to affect the exchange rate.

Other forms of insurance exist that are less costly than reserves, but with no incidence on the exchange rate. Furthermore, these could generate pressure to appreciate the currency by signaling less vulnerability to external financial turbulence. Commodity exporting countries can use *commodity hedges* instead of hoarding reserves and this could be a better instrument from the financial standpoint. Multilateral contingent credit lines can be used, as is the case of the IMF's Flexible Credit Line. Also bilateral agreements on currency swap lines can be signed, which, although common in relatively large economies, are not available for smaller ones.

This dual effect of reserves accumulation could explain why many countries seem to have invested more than necessary in this self-insurance. In fact, interventions in the foreign exchange markets have their origin in fear of having a misaligned exchange rate. Furthermore, the dual role of reserves may also explain why so few countries have contracted the Flexible Credit Line of the IMF.

The FCL is a good idea as insurance. A problem arises, however: What would happen if a country decided to take a contingent credit facility instead of hoarding reserves? First, such an economy would be safer, encouraging more capital inflows. Second, it would have less reason to intervene in the foreign exchange market because it would already be over-insured and would have other ways to obtain external funding in case of a sudden stop of private sources. So this is the difficulty that countries face when looking for cheaper insurance mechanisms: overlooking the fact that at the core of the decision on reserves is to affect the exchange rate.

In sum, the role of reserves as an insurance mechanism acts as a deterrent against sudden stops of capital inflows and destabilizing speculation against their currencies. But also, reserves accumulation has been a tool for exchange rate management. Certainly the holdings of reserves have a relevant carry cost that must be appropriately weighted when deciding to intervene in the foreign exchange market.

How much is the optimal level of reserves is an issue that has produced significant amount of research. It is not clear. However, the evidence from the crisis shows that emerging market economies were well protected with their actual levels of reserves, so, at least, they were not under-insured. On the other hand, keeping these levels of reserves is very costly, which limits the space for further accumulation, in particular when the costs of holding reserves are appropriately taken into account.

5. Final Remarks

Big financial crises have been common in emerging market economies. The debt crisis in the early 1980s in Latin America left many lessons for financial regulation. A first and major lesson was that more was no better than less financial deepening. The development of financial markets is a good thing, but leaving them unfettered was extremely risky and with very high probability it was an almost sure route to crisis. Indeed, studying this issue in Latin America many years ago I came to the conclusion that in Latin America growth during the eighties was lower in countries with more developed financial systems, since the collapse of their economies during the debt crisis was larger (De Gregorio and Guidotti, 1995). It was Carlos Diaz-Alejandro, by the mid-eighties, who eloquently said "good-bye financial repression, hello financial crash" (Diaz-Alejandro, 1985). Some recent research also points in the same direction, namely, beyond a certain level, financial depth has marginal contributions to growth (Arcand et al., 2012; Cecchetti and Kharroubi, 2012).

Today, serious international efforts are being made to set guidelines to strengthen financial markets. However, "if it ain't broke don't fix it" is a reasonable starting point for reforms in emerging markets. Current regulatory proposals are particularly geared to regulate complex financial institutions, which are not the typical banks in emerging markets. Banks in emerging markets are simpler, and that is a strong reason why they have been resilient. Regulation must follow the complexity of the institutions, and a first rule in emerging markets is to start examining whether to allow financial innovation or not. Whether its potential benefits outweighs its risks. Once that question is answered positively, the appropriate regulation must be discussed. An overhaul of existing regulation is not the best starting point.

Many countries have been creating financial stability boards to coordinate all relevant agencies dealing with financial stability. Those boards have to be given clear mandate and assigned responsibilities, avoiding overlap and conflicts among agencies. New layers to financial regulation must be added in consistency with the existing duties of current regulatory agencies. Central banks have to play a critical role in this area, not only because they should lead the design of macroprudential tools and preserve financial stability, but also because they have the independence, or should be granted it where they don't have it, to perform this task effectively. This will not avoid future crises, but it should minimize their probability of happening. Several relevant steps have been taken in Latin America in this regard.

Efficient and strict regulation of the banking system is essential for promoting financial stability. However, this endeavor also has its risks. As the banking system becomes better capitalized and more regulated, incentives to move financial intermediation to unregulated institutions increase. Thus, the shadow banking system may become larger and more risky. There will be always a tension between the extent and the perimeter of regulation, which must be permanently addressed. This has been a persistent problem with the application of capital controls.

Banking systems in Latin America are small and concentrated. Efforts to increase competition are always welcome. But, new tensions will appear as competition also encourages search for yield. Indeed, the search for yield in advanced economies was also responsible for excessive risk-taking. Coordination between competition authorities and financial regulators is important. Competition cannot be promoted at the cost of increased vulnerabilities.

As recently argued by Haldane and Madouros (2012), rules that become too complex are not necessarily robust.[13] Preserving simplicity in a complex financial system is not always possible, but avoiding the complexity that arises to accommodate the demands from different segments of the market may lead to inefficient regulation. The potential capture from vested interest may endanger financial stability.

One important attribute of regulators in emerging market economies, after having survived many crises, is a reasonable degree of prudence. In general regulators allow mainly activities that can be handled appropriately by financial intermediaries, but above all that can be understood and monitored well by market participants and financial regulators. The same happens with a significant part of the private sector, who know firsthand the perils of financial innovation. Indeed, when the private sector has paid the cost of their own mistakes they should become more aware of the risks. Bailing out those responsible for causing a crisis create moral hazard and do not induce prudence and discipline. However, the experience of some non-financial corporations dealing with complex derivatives previous to the crisis is a demonstration that financial policies cannot rely only on the good judgment of the private sector. Regulations, as well as appropriate risk management within firms, are central for preserving financial stability and minimizing the cost of disruptions.

Good macroeconomic policies and a strong financial system, with a little bit of luck too, have allowed emerging market economies to perform reasonably well during the crisis of the world economy. Persevering in fiscal responsibility, inflation control, flexible exchange rates and robust prudential regulation of the financial system are essential to go from recovery to sustained economic progress.

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[13] See also comments by De Gregorio (2012).

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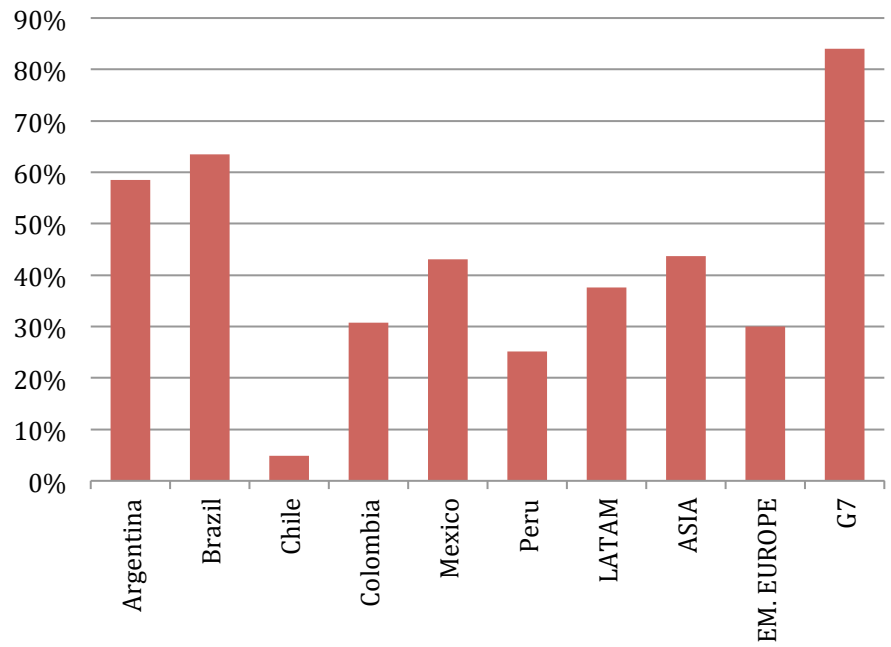
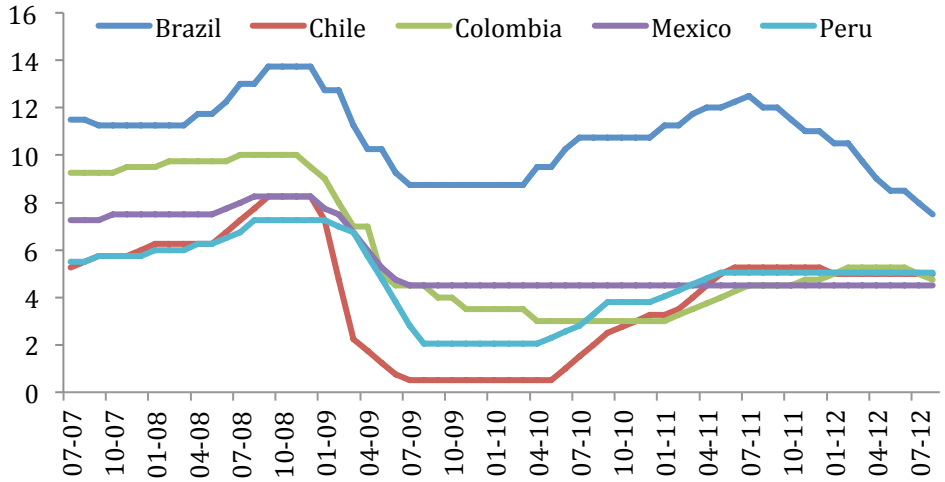
Figure 1. Gross Public Debt 2008
(% of GDP)



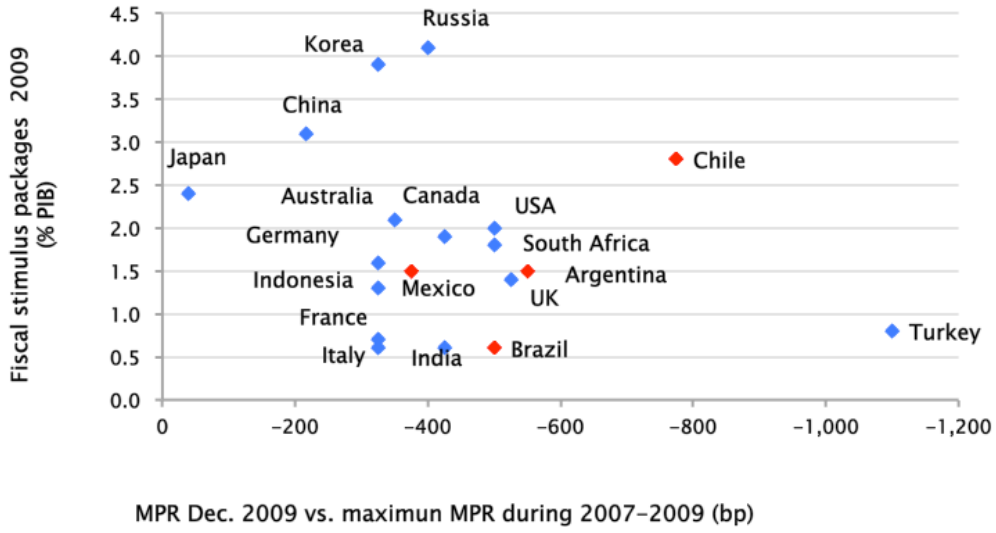
Source: IMF, Fiscal Monitor Statistics.

Figure 2: Monetary Policy Interest Rates



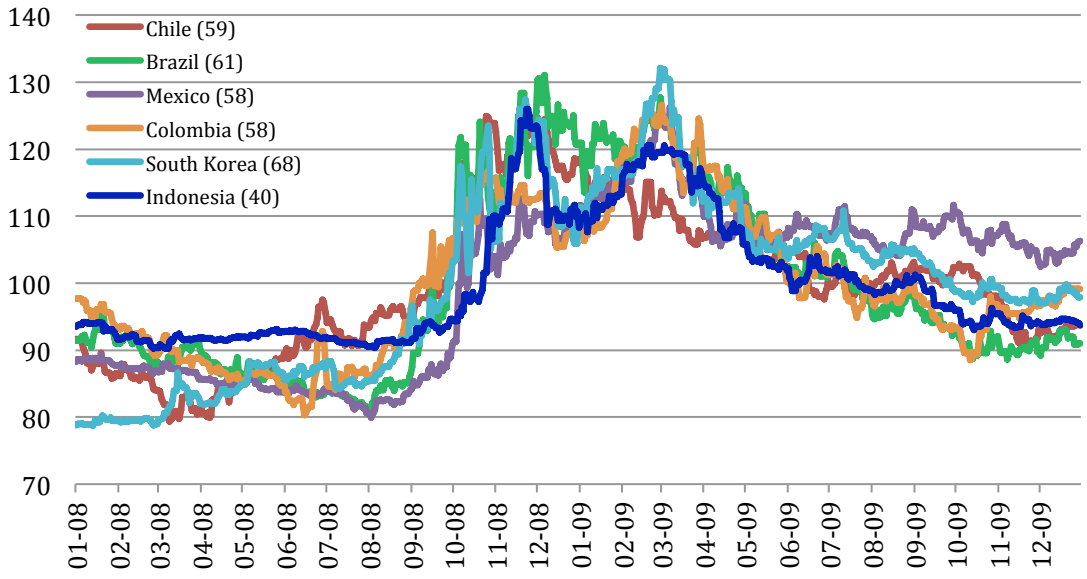
Source: Bloomberg.

Figure 3: Monetary and Fiscal Stimulus



Sources: Bloomberg, Central Bank of Chile, IMF and Ministries of Finance.
MPR: Monetary Policy Rate.

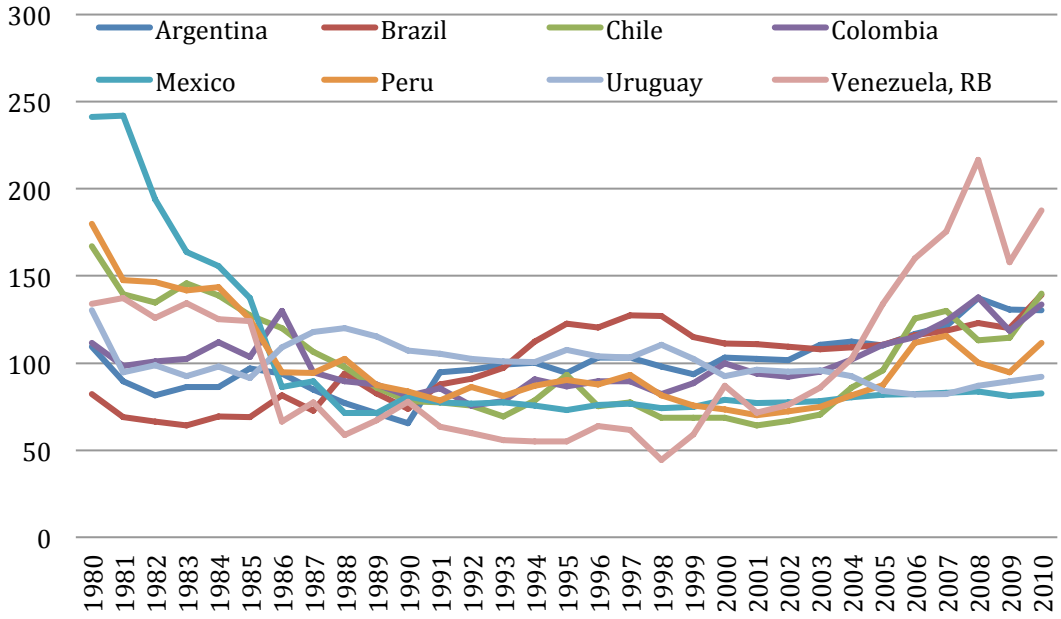
Figure 4: Exchange Rates during the Global Financial Crisis
(domestic currency per USD, period average=100)



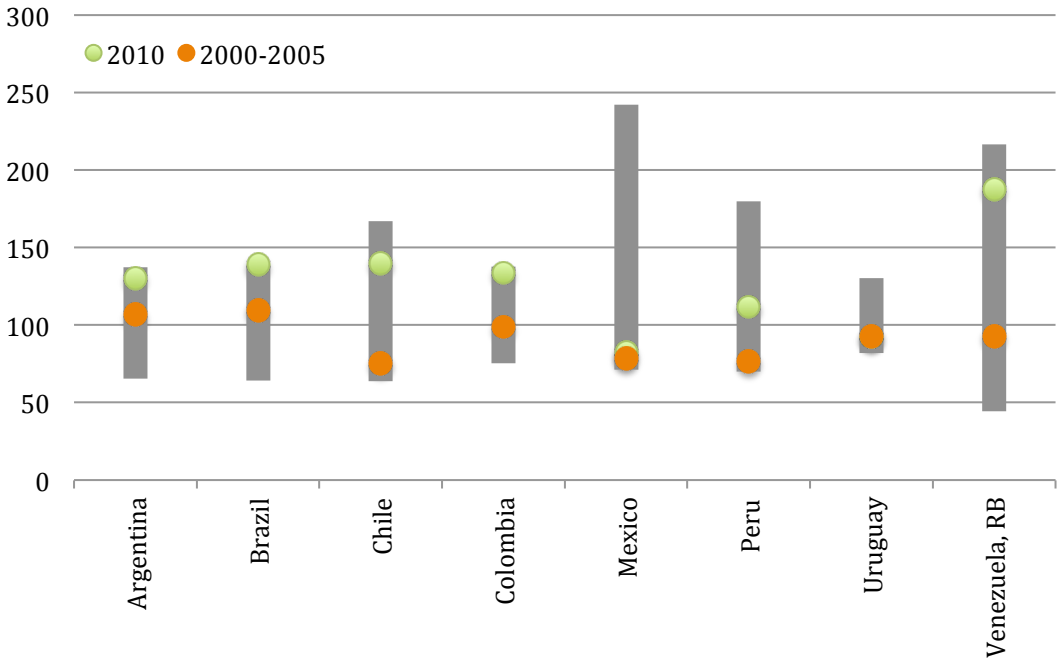
Source: Bloomberg. Figure in brackets indicates depreciation from bottom to top. An increase indicates a depreciation of the currency.

Figure 5: Terms of Trade
(Average 1980-2010=100)

(a) Evolution

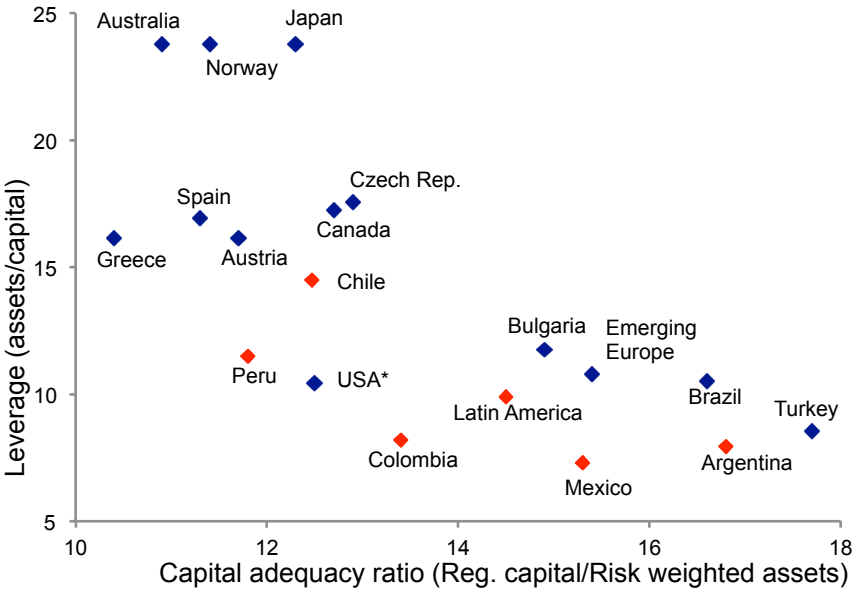


(b) Minimum, maximum, 2010 and 2000-2005



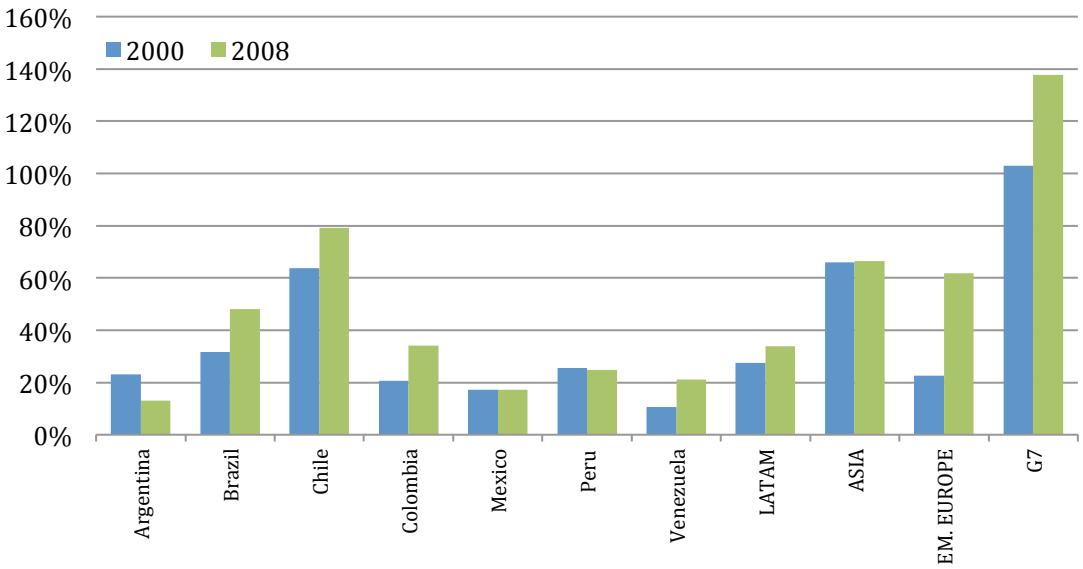
Source: World Bank, Net Barter Terms of Trade Index,
http://data.worldbank.org/indicator/TT.PRI.MRCH.XD.WD

Figure 6: Banks' Capital ratios
(times, percentage)



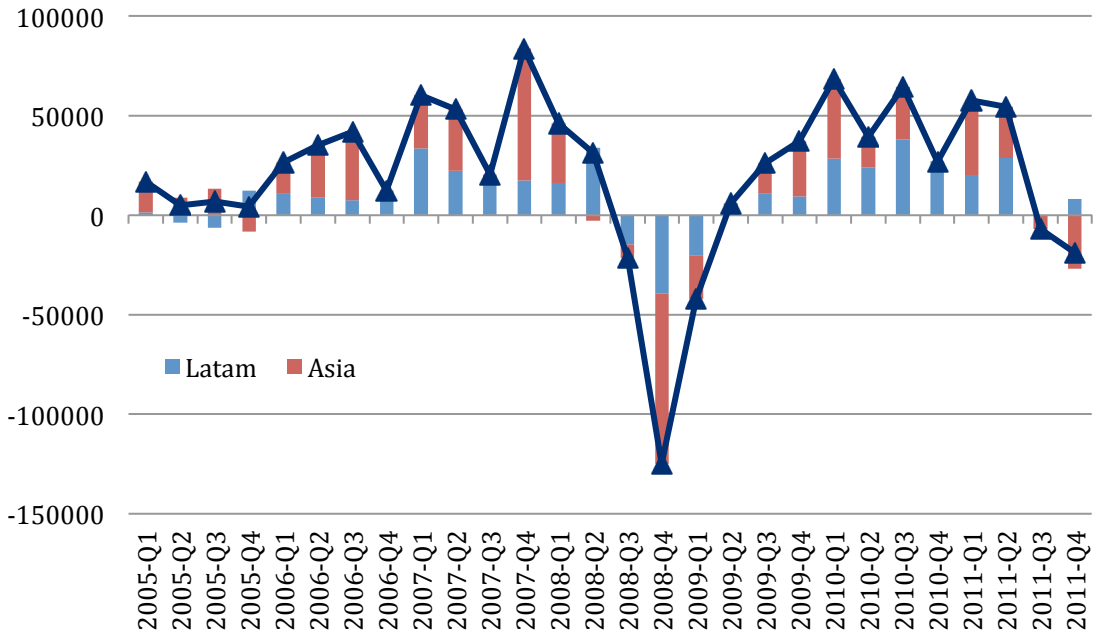
Sources: Central Bank of Chile, *Financial Stability Report*, 2009-I, IMF.
Considers only commercial banks. Investment banks are excluded and they have leverage ratios in 2008 of about 26.

Figure 7: Private Credit as Share of GDP
(percentage)



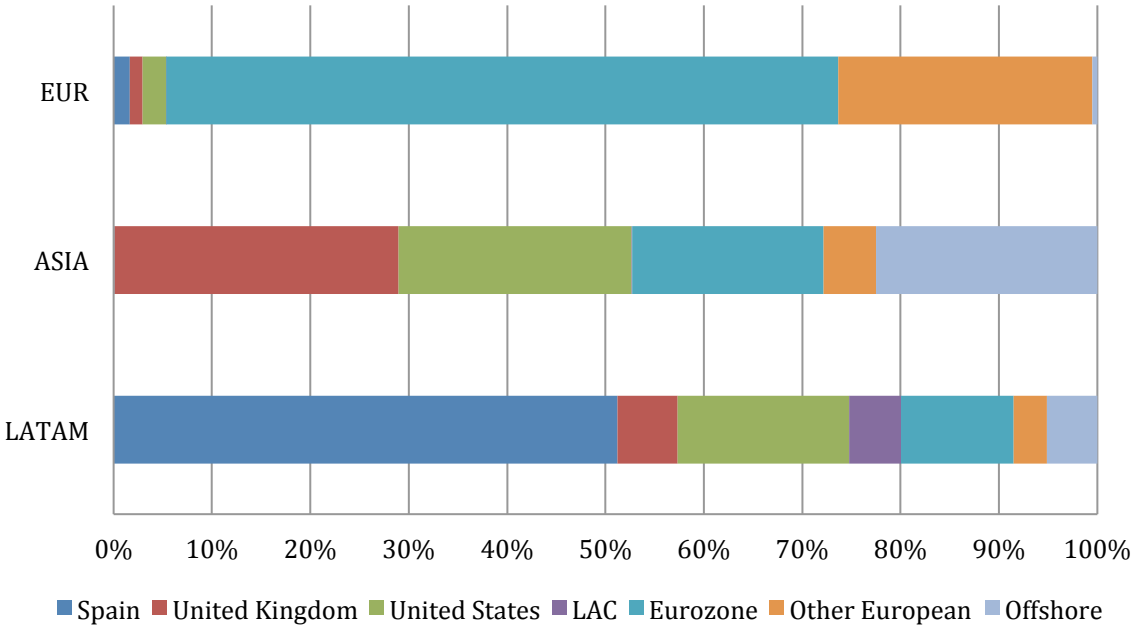
Source: IMF, IFS.

Figure 8: Quarterly Change in Cross-Border Claims on Latin America and Asia
(millions of US$)



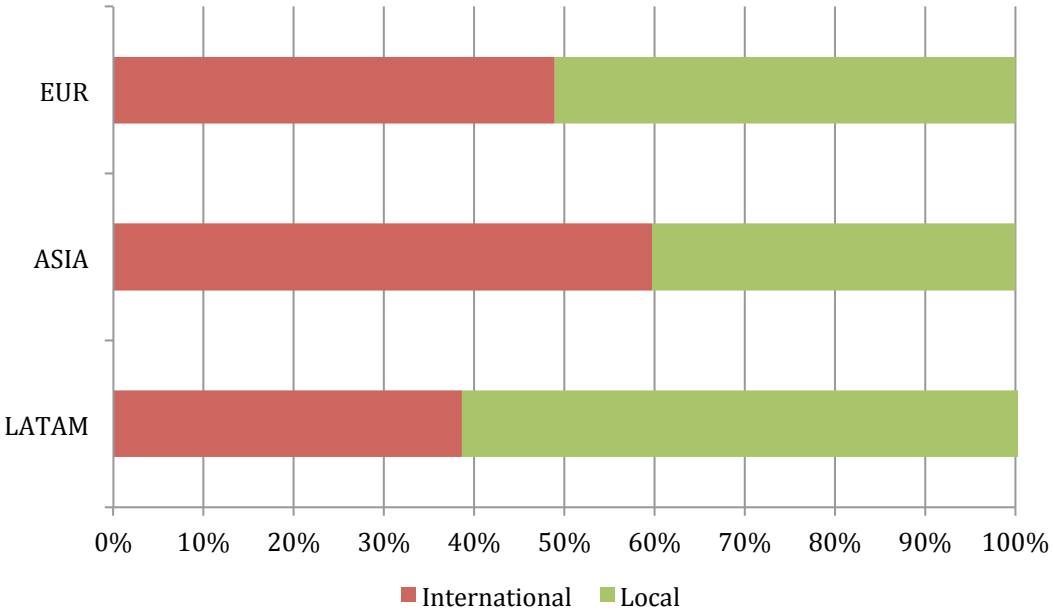
Source: Consolidated Banking Statistics (immediate borrower basis), BIS.

Figure 9: Foreign Claims of BIS Reporting Banks
(percentage, 2011.II)



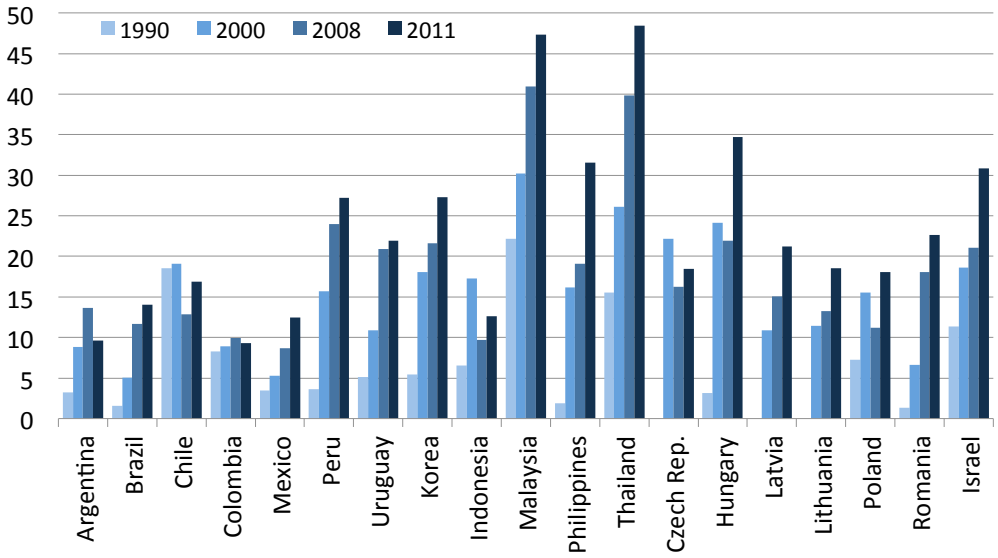
Source: Consolidated Banking Statistics (immediate borrower basis), BIS.

Figure 10: Composition of Foreign Claims
(percentage, 2011.II)



Source: Consolidated Banking Statistics (immediate borrower basis), BIS.

Figure 11: International Reserves
(% of GDP)



Source: IMF-IFS and WEO.