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Capital Flows and Capital Account Management

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International financial integration and capital account management have been central issues in the policy discussion in recent years. However, these issues are not new in emerging market economies. Some of these economies have had disastrous experiences with financial crisis, most of the time caused by mishandled financial integration and weak macroeconomic policies. The resilience of emerging market economies, in particular their financial systems, during the recent global financial crisis shows that some key lessons have been learned.

The external balance has usually been at the center of financial and currency crises. Periods of exuberance, capital account liberalization, rigidities in the exchange rate, and weak financial systems create periods of overheating, which are followed by costly adjustments. Domestically, these episodes have been induced either by fiscal profligacy or by unsustainable private sector booms. How to take advantage of foreign financing while making the economy resilient to changes in international conditions has become an important question for policymakers and researchers.

Before proceeding with the discussion, it is useful to clarify some ideas. Often, there is no clear distinction between net and gross capital inflows and little understanding regarding how to tackle them and the potential consequences and risks.

Net capital inflows are the counterpart of current account deficits.[1] Excessive net inflows may be an indication that the economy is running an unsustainable current account deficit. Domestic expenditures could be at levels that cannot be permanently financed and thus will be followed by a sharp correction. At first glance, the current account—or net inflows—is what matters for exchange rates, in particular for the real exchange rate, which is the relative price between domestic and foreign goods that gives the signal for resource allocation and demand patterns consistent with savings/investment decisions.

Gross inflows, in turn, are the response to portfolio allocation. Gross flows are central to financial stability. The form and volume that gross flows take have a direct impact on the vulnerability of the financial system. It has long been long argued, rightly, that foreign investment and equity flows are more stable, while banking flows are more likely to be subject to sharp reversals.

In this regard, a separation between net and gross inflows becomes relevant. Net inflows have to do with real exchange rates and competitiveness, while gross flows have to do with financial stability. There are interactions between net and gross flows

as well as exchange rate developments and financial stability, but as a starting and organizing distinction it is a useful one.

I will discuss three relevant issues on financial integration, as well as the challenges capital flows impose on policymaking. First, I will review the evidence on capital flows, then I will discuss the benefits of financial integration. Finally, I will go over the issue of capital account management and policies to limit the vulnerabilities coming from financial openness.

Evidence on Capital Inflows to Emerging Markets

After running significant current account deficits before the debt crisis, Latin America had no access to voluntary international capital markets. Capital flows resumed in the early 1990s as result of low world interest rates and the resolution of the debt crisis. These developments raised several policy concerns (Calvo, Leiderman, and Reinhart 1994), and the expression "the problem of capital inflows" was coined. This preoccupation was intensified by the Mexican crisis of the mid-1990s and later by the Asian crisis.

Capital inflows were financing increasing current account deficits. These deficits could become unsustainable and force a severe adjustment. Unsustainability can be driven by the current or the financial capital account. In the first case, mounting artificial appreciation of the currency as result of exchange rate rigidities would be followed by massive depreciation and a currency crisis. In the second case, when the source is the capital account, even an apparently sustainable current account deficit could be reversed by a sudden halt in capital inflows due to changes in foreign investors' risk appetite, fear of insolvency, or simply contagion after a general withdrawal of investors from emerging markets. Of course, making the distinction between capital- and current-account-driven reversal is quite a difficult task, since they are ex post the same. It is surprising that the cross-references between current account reversals and sudden stops are rather scarce.

As figure 1shows, in the mid-1990s there was indeed a deficit in the current account in emerging markets. It started earlier in Asia and lasted until the Asian crisis. In Latin America, it started in the early 1990s and lasted until 1998. On average, it was not massive, but there were disparities across countries. Mexico had an average deficit of 6.2 percent from 1992 to 1994. Something similar occurred in some Asian countries that were hit during the Asian crisis, such as Malaysia and Thailand. However, it was not the case in Korea and Indonesia. The reversal in Asia was sharp, while in Latin America it took place more gradually after the late 1990s and was followed by several years of low growth.

Things have been rather different recently. During the 2000s, emerging markets were net exporters of capital. Emerging market economies have been running, on average, current account surpluses; hence, on net terms, capital has been flowing out of these markets. Only recently, Latin America had a current account deficit.

During recent years, capital has been flowing "uphill" (Prasad, Rajan, and Subramanian 2007) from developing countries to advanced economies. This phenomenon has been dominated by the large deficits in the United States and the large surpluses in oil exporting countries. China has also played a relevant role in financing the U.S. current account deficit, as shown in figure 2. This pattern is evident since the mid-1990s, but it was much more pronounced in the years before the crisis. The line in the figure shows the current account balance of Latin America, the new industrialized Asian economies, and developing Asia.[2] They have clearly been net exporters of capital since the late 1990s.

What is the basis for concerns about capital inflows to emerging market economies? There are two reasons. The first is that gross inflows have increased over time, despite outward net flows. Figure 3 shows gross inflows for the sample of Asian and Latin American countries. The increase in gross flows is very significant. The figures show, consistent with the usual narrative, that the most important and stable component of inflows in Latin America is foreign direct investment (FDI). Banking debt flows, which make up the bulk of the "other investment" category, are much less important and also more volatile. In contrast, in Asia, the role of portfolio flows and banking flows is much more important; indeed, the retrenchment of debt flows during the global financial crisis was much more severe in Asia than in Latin America.[3] This suggests several policy issues regarding financial stability and the vulnerability of emerging markets to external financial turmoil.

However, despite a contained current account deficit, it is possible to observe net (nonofficial) capital inflows if there is accumulation of international reserves. Under no foreign reserves accumulation, net capital flows equal the current account. Since emerging markets have been accumulating large amounts of international reserves, capital flows could be flowing into emerging markets despite a surplus in the current account. Figure 4 replicates figure 2, adding to the current account balance the accumulation of international reserves. It is clear that despite no demand to finance excess domestic expenditure, capital has been flowing to emerging markets because of the additional demand for reserves. Indeed, surges in capital inflows during recent years have come together with large accumulations of reserves and moderate current account deficits, even surpluses in some countries. This is very different from the experience of the 1990s, when the incidence of current account deficits was much more relevant (De Gregorio 2013).

In recent years, emerging market economies have not been flooded by capital flows, and net flows have come together with reserve accumulation. Causality among reserves, capital flows, and current account balance is a difficult issue. In the accounting definitions, accumulation of reserves (ΔR) is equal to the balance in the current account (C) plus the balance in the financial account (F). If there is an increase in reserves, $\Delta R>0$, $\alpha\Delta R$ will result in an improvement in the current account balance, while the remaining $(1-\alpha)\Delta R$ will result in an increase in capital inflows.

If the accumulation of reserves results only in an increase in capital flows, α will be zero. In contrast, if all the accumulation of reserves absorbs capital that is flowing in, without further flows, the current account should be affected with a value of α equal to one. There is little evidence on this and estimates are wide, ranging from 0.4 (IMF 2012) to 0.8 (Bergsten and Gagnon 2012).[4] Of course, the value of α depends on the characteristics of the countries, but in order for this parameter to be large, one needs to show that the effects of sterilized intervention on the exchange rate are sizable; otherwise, it is difficult to affect the current account through reserve accumulation. But evidence on the impact of intervention on exchange rate is elusive and, at most, the effects are limited. Therefore, according to this indirect evidence, the value of α is likely to be low. However, much more research is needed, since this issue is at the core of other issues such as currency manipulation, capital flows absorption, and the impact of reserve accumulation in the global adjustment.

Financial Integration

The evidence on the positive effects of financial integration on economic performance is elusive. Most surveys and recent research have found small or no significant effects, and the policy conclusion is generally that in order to reap the benefits from financial integration it must be done within a healthy regulatory and supervisory framework. Certainly, unfettered financial integration has proved to be risky and, most of the time, has had very negative consequences. However, the evidence does not support financial autarky. Indeed, the evidence also shows that as countries grow, their level of financial integration increases.

Several recent papers survey and provide additional evidence on financial integration and growth. For example, Obstfeld (2009)concludes that "Despite an abundance of cross-section, panel, and event studies, there is strikingly little convincing documentation of direct positive impacts of financial opening on the economic welfare levels or growth rates of developing countries." And from a policy point of view, "This survey discusses the policy framework in which financial globalization is most likely to prove beneficial." Obstfeld also reports that high levels of income are correlated with high levels of financial integration. Of course, causality does not go from financial integration to development but from high levels of income to more financial integration.

Similarly, Kose and others (2009) find that "overall, our critical reading of the recent empirical literature is that it lends some qualified support to the view that developing countries can benefit from financial globalization, but with many nuances. On the other hand, there is little systematic evidence to support widely cited claims that financial globalization by itself leads to deeper and more costly developing country growth crises." They also find that financial integration might have collateral effects that may induce productivity growth, such as improved institutional quality and better macroeconomic policies.

In a recent meta-regression analysis, based on 2,340 regressions, Jeanne, Subramanian, and Williamson (2012) "fail to produce robust evidence of a positive relationship between financial globalization and growth, raising questions about the pursuit of all forms of international financial integration as an urgent policy goal."

However, the evidence shows that there are important differences according to the type of capital flows. Borensztein, De Gregorio, and Wha-Lee (1998) found that for countries with a minimum level of human capital, FDI spurs economic growth. This evidence is confirmed by Jeanne, Subramanian, and Williamson (2012), who found "somewhat reassuringly, portfolio equity and FDI flows are more likely to generate positive and significant effects on growth compared with banking or portfolio debt flows."

The evidence on the weak link between financial integration and economic growth does not come from the impact of financial integration on the incidence of financial crisis. As reported by Kose and others (2009), based on evidence from Edwards (2005), countries with higher capital mobility do not have more external crises, and the cost of crisis is no greater in countries that restrict capital inflows.

The most supportive evidence on the potential benefits of financial integration comes from looking at threshold effects. The conclusion from this literature is that economies need a minimum level of governance, institutional development, quality of macroeconomic policies, and other characteristics to be able to absorb capital flows without detrimental effects on growth. This point was first raised in Prasad and others (2003) and recently revisited by Chen and Quang (2012). These findings may be related to indirect effects of opening up on productivity growth. Still, the evidence is not strong enough to provide definite conclusions.

Two additional findings have raised doubts about the benefits of financial integration. First, countries that have grown the most are those that rely less, not more, on foreign savings (Prasad et al. 2007). However, this is probably because countries that have grown fast, especially in East Asia, have relied more on a very high savings rate and capital accumulation, so their need for net foreign capital are relatively small. We know there is a two-way relationship between savings and growth. High-savings economies, in part because of higher growth, have less need of foreign finance. A second and related finding is the "allocation puzzle" of Gourinchas and Jeanne (2011), in which capital flows to low, not high, total factor productivity growth countries. However, as the authors emphasize, this is also related to the links between savings and growth, rather than a direct consequence of financial integration. Therefore, these additional findings are not necessarily related to the effects of integration on economic growth, but they point toward more fundamental determinants of economic growth that also have an impact on the degree of financial integration.

Summing up, the evidence shows the following:

- There is not a clear link from financial integration to economic growth. Financial integration by itself is not an engine of growth. However, there is no evidence that it is harmful.

- The type of capital flows matters for economic growth. FDI and portfolio equities tend to be more supportive of economic growth, while this is not the case for banking flows. This could be because financial crises come mostly from distortions in the banking sector.

- High income is correlated with high financial integration. As economies develop, their financial integration with the global economy increases. Therefore, financial integration is a result of economic growth, and we do not know what would happen if economies avoided integration while they grew. Is it possible to keep growing with a closed capital account? The evidence indicates that this is unlikely.

- Some evidence shows that there are some threshold effects; that is, countries need to have some minimum institutional standards to benefit from financial globalization.

The main policy implication is that opening up requires a regulatory and supervisory framework that allows a country to reap benefits from integration while preserving financial stability and avoiding costly financial crisis. Economies must face the challenge of integration as growth proceeds.

Latin American experience regarding financial integration and the incidence of crisis is quite informative. As figure 5 shows, Latin American countries have become more integrated but also more resilient. During the debt crisis, there was less financial integration and integration was more tilted to debt flows. Latin American countries financed rapid credit booms, and countries that increased credit the most suffered deeper crises (De Gregorio and Guidotti 1995). Being financially open, given appropriate domestic regulation, does not necessarily result in greater vulnerability. The Achilles heel has been the credit boom.

This discussion has some relevance to trade openness. A cursory look at the global evidence indicates that more open economies did not have worse cycles during the crisis than more closed economies. Economies more open to trade could have suffered much more at the beginning of the crisis, but their whole cycle was not necessarily worse. Being open to trade does not make an economy more vulnerable.

Management of the Capital Account

The first line of defense against massive capital flows is exchange rate flexibility. Unsustainable exchange rate management and one-sided bets are an incentive for capital flow volatility. In addition, an inflation-targeting regime and sound fiscal

policies should help prevent excessive capital inflows, which is the same as excessive current account deficits.

However, this is not enough. First, the value of the currency needed to reduce incentives for capital inflows might be sufficiently high that policymakers find it inconvenient. There is a well-grounded bias to have relatively weak currencies in order to foster export-led growth. In this case, capital controls would be serving a competitiveness purpose. Second, the nature of flows might be such that authorities find it prudent to change the composition of flows or reduce some specific inflows, such as excessive reliance on short-term banking flows. In this case, the control would be serving a financial stability purpose and can be considered a macroprudential tool.

Before discussing policies toward short-term management of capital flows, it is important to comment on long-term financial integration. Many years ago, there was a lot of discussion on sequencing. What must come first: financial opening or financial liberalization? This is no longer an issue. The first task is to develop the domestic financial system. Setting a strong supervisory and regulatory framework is crucial to ensure that the capital account has a sound domestic financial system. Foreign financial institutions might help with the development of the domestic financial system, but they might also be a cause of concern if regulation is weak.

The form in which international banks operate in different countries is quite important to ring-fence the domestic financial system from problems originating in the home countries of the foreign banks. A first important step is to encourage foreign banks to have the same rules and regulations as domestic ones. This calls for the establishment of subsidiaries of foreign banks rather than branches. Subsidiaries have their own boards, which are responsible for bank operations in the host country, and they have strong limits on operations with the parent company. Branches can more easily transmit turbulence to the host country. Subsidiarization is not a panacea, but it has worked reasonably well in Latin America.

A highly debated issue is the use and effectiveness of capital controls. When capital controls are used for financial stability purposes, it is possible to relabel them as macroprudential tools. When their purpose is to affect the exchange rate and the current account balance, they are capital controls, although some may call them macroprudential tools as a communication device.

The empirical evidence on effectiveness is varied, since capital controls are used for several goals and effectiveness is country-specific. They are used to control the volume of flows, to change their composition, to ensure monetary independence, and to depreciate the exchange rate. These objectives combine some financial stability concerns with macroeconomic stability concerns. The latter refer to limiting exchange rate pressures and reducing net flows, which is the same as reducing the current account balance.

Regarding purely financial stability concerns, the main risk of gross inflows stems from cross-border banking flows. A number of macroprudential tools can be used to preserve financial stability, and restrictions on cross-border flows can be one of them. In Korea, a tax levy on banks' noncore liabilities was implemented in order to curb the increasing importance (deemed to be a source of vulnerability) of cross-border flows (Bruno and Shin, 2013).

Recent work (Magud, Reinhart, and Rogoff 2011; Ostry et al. 2011; and Habermeir, Kokenyne, and Baba 2011) has reviewed the existing evidence. Broadly, the evidence has not found significant effects on the exchange rate. Some small effects have been found on the volume of inflows. The most frequent finding is that capital controls affect the composition of inflows, increasing maturity.

Let me use the evidence from Chile, the poster child for market-based capital controls, to clarify some points.[5] Most of the claims about effectiveness look at the statistical significance without looking seriously at the economic significance. An effect could be significantly different from zero but of a very small, and therefore irrelevant, magnitude. In the case of Chile, the paper by Gallego, Hernandez, and Schmidt-Hebbel (1999) is the only one that found significant effects on the volume of flows. They estimated that the total impact of capital controls in Chile was to reduce inflows by about 2 percent of GDP, while total capital inflows amounted to nearly 27 percent of GDP. Certainly, it is a very small effect, and not robust across studies.

Only some small short-run effects have been found on the real exchange rate. Only Edwards and Rigobon (2009) estimate statistically significant effects on the extent of the appreciation of the peso. However, the magnitude of such effect is economically small. According to their estimates, the elimination of the control, which consisted of an unremunerated reserve requirement, from its maximum would have appreciated the exchange rate between 2 percent and 2.5 percent.

The most frequent finding has been, not only in Chile, a change in the composition of inflows. The evidence for Chile is that short-term debt would have declined by 0.5 percent to 1 percent of GDP as a result of capital controls (Cowan and De Gregorio 2007). Again, this is not an economically significant effect.

To be consistent with the discussion of the evidence on financial integration, one could argue that capital controls do no harm. However there are two concerns, supported by some evidence, regarding negative effects of capital controls.

As long as capital controls are able to change the composition of debt flows by increasing the cost of short-term relative to long-term borrowing, firms that rely on short-term debt (mostly small and medium enterprises and firms with short credit history) will be negatively affected. There is some evidence in the Chilean case of a change in the structure of financing, which could have induced distortions (Forbes 2007). However, this is a characteristic of most macroprudential tools aimed at

tapering credit expansion: They have the unavoidable cost of making credit more expensive, otherwise they would be ineffective.

Although I do not think this effect could have been too significant—because the quantity effect is not so large—the main risk of capital controls is to create the false idea of insulation. Policymakers may think they have gained monetary independence to set the interest rate at any level without repercussions on the exchange rate. Indeed, the most famous Latin American cases of capital controls—Chile in the 1990s and Brazil in the late 2000s—took place in the context of very high interest rates, which could have been partly responsible for the large appreciations their currencies went through. Indeed, by late 1996, at the peak of the capital inflow surge in Chile, the monetary policy rate was about 15 percent,[6] while the federal funds rate was at 5.25 percent. Brazil had a similar experience: By mid-2008, when the Real reached its maximum, the monetary policy rate was at 12 percent and rising to 13.75 percent, while the federal funds rate was at 2 percent.[7]

Because of concerns about potential costs, some countries might find it worthwhile to apply capital controls, as the effectiveness is country-specific. For controls to be effective and minimize costs and distortions, it is important that macroeconomics policies are well aligned with macroeconomic and financial stability. Controls could serve as a complement and not a substitute for sound macroeconomic and financial policies. But having strong macroeconomic policies and a strong financial system could make it unnecessary to consider capital controls, as was the experience in many emerging markets that made it successfully through the global financial crisis.

References

Bergsten, C. Fred, and Joseph E. Gagnon. 2012. "Currency Manipulation, the US Economy, and the Global Economic Order," Policy Brief PB12-25, Peterson Institute of International Economics, Washington, DC.

Borensztein, Eduardo, Jose De Gregorio, and Jong Wha-Lee. 1998. "How Does Foreign Direct Investment Affect Economic Growth*?*" *Journal of International Economics* 45(1): 115–135.

Bruno, Valentina, and Hyun Song Shin. 2013. "Assessing Macroprudential Policies: Case of Korea." Princeton University, Princeton, NJ, unpublished.

Calvo, Guillermo A., Leonardo Leiderman, and Carmen M. Reinhart. 1994. "The Capital Inflows Problem: Concepts and Issues." *Contemporary Economic Policy* 12: 54–66.

Chamon, Marcos, and Marcio Garcia. 2013. "Capital Controls in Brazil: Effective? Efficient?" International Monetary Fund, Washington, DC, unpublished.

Chen, Jinzhao, and Thérèse Quang. 2012. "International Financial integrations and Economic Growth: New Evidence on Threshold Effects." Working Paper 2012-06, Université Paris Ouest, Paris.

Committee on International Economic Policy Reform (CIEPR). 2012. *Banks and Cross-Border Capital Flows: Policy Challenges and Regulatory Responses.* Washington, DC: Brookings Institution.

Cowan, Kevin, and José De Gregorio. 2007. "International Borrowing, Capital Controls and the Exchange Rate: Lessons from Chile." In S. Edwards (ed.), *Capital Controls and Capital Flows in Emerging Economies: Policies, Practices and Consequences.* Chicago and London: National Bureau of Economic Research (NBER) and University of Chicago Press.

De Gregorio, José. 2013. *How Latin America Weathered the Global Financial Crisis.* Washington: Peterson Institute of International Economics, forthcoming.

———, and Pablo Guidotti. 1995. "Financial Development and Economic Growth." *World Development* 23(3): 433–448.

Edwards, Sebastian, and Roberto Rigobon. 2009. "Capital Controls, Exchange Rate Volatility and External Vulnerability." *Journal of International Economics* 78(2): 257–267.

Edwards, Sebastian. 2005. "Capital Controls, Sudden Stops, and Current Account Reversals." NBER Working Paper 11170, Cambridge, MA, National Bureau of Economic Research.

Forbes, Kristin J. 2007. "One Cost of the Chilean Capital Controls: Increased Financial Constraints for Smaller Traded Firms." *Journal of International Economics* 71(2): 294–323.

Gallego Francisco, Leonardo Hernández, and Klaus Schmidt-Hebbel. 1999. "Capital Controls in Chile: Effective, Efficient?" Working Paper 59, Central Bank of Chile, Santiago.

Gourinchas, Pierre-Olivier, and Olivier Jeanne. 2011. "Capital Flows to Developing Countries: The Allocation Puzzle." University of California at Berkeley, Berkeley, CA, unpublished.

Habermeier, Karl, Annamaria Kokenyne, and Chikako Baba. 2011. "The Effectiveness of Capital Controls and Prudential Policies in Managing Large Inflows." IMF Staff Discussion Note 11/14, International Monetary Fund, Washington, DC.

International Monetary Fund (IMF). 2012. "External Balance Assessment (EBA): Technical Background of the Pilot Methodology." International Monetary Fund, Washington, DC, unpublished, August 3.

Jeanne, Olivier, Arvind Subramanian and John Williamson. 2012. *Who Needs to Open the Capital Account?*, Peterson Institute of International Economics, Washington DC.

Kose, M. Ayhan, Eswar S. Prasad, Kenneth Rogoff, and Shang-Jin Wei. 2009. "Financial Globalization: A Reappraisal." *IMF Staff Papers* 56(1): 8–62.

Magud, Nicolas E., Carmen Reinhart, and Kenneth S. Rogoff. 2011. "Capital Controls: Myth and Reality – A Portfolio Balance Approach." NBER Working Paper 16805, Cambridge, MA, National Bureau of Economic Research.

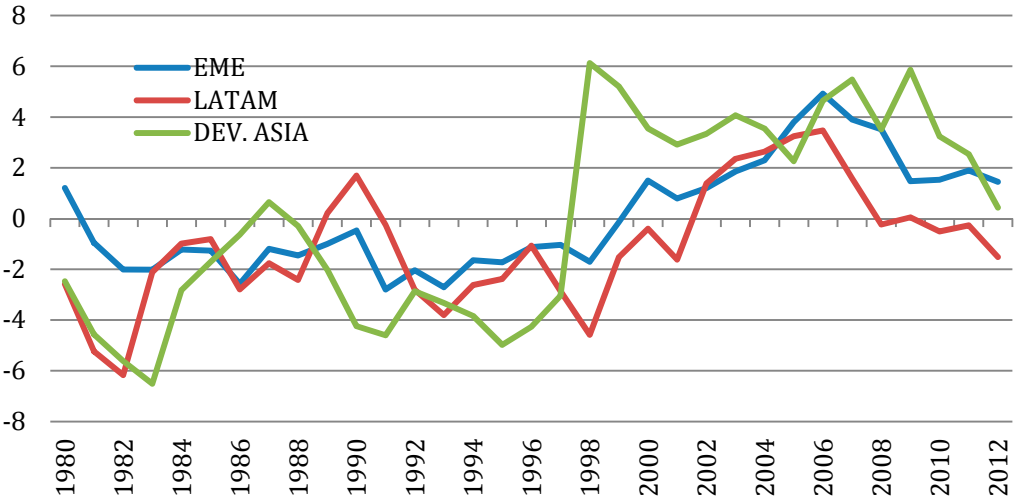
Obstfeld, Maurice. 2009. "International Finance and Growth in Developing Countries: What Have We Learned?," *IMF Staff Papers*, 56(1): 63-111

Ostry, Jonathan D., Atish R. Gosh, Karl Habermeier, Luc Laeven, Marcos Chamon, Mahvash Qureshi, and Annamaria Kokenyne. 2011. "Managing Capital Inflows: What Tools to Use?" IMF Staff Discussion Note/11/06, International Monetary Fund, Washington, DC.

Prasad, Eswar S., Raghuram G. Rajan, and Arvind Subramanian. 2007. "Foreign Capital and Economic Growth." *Brookings Papers on Economic Activity* 38(1): 153–230.

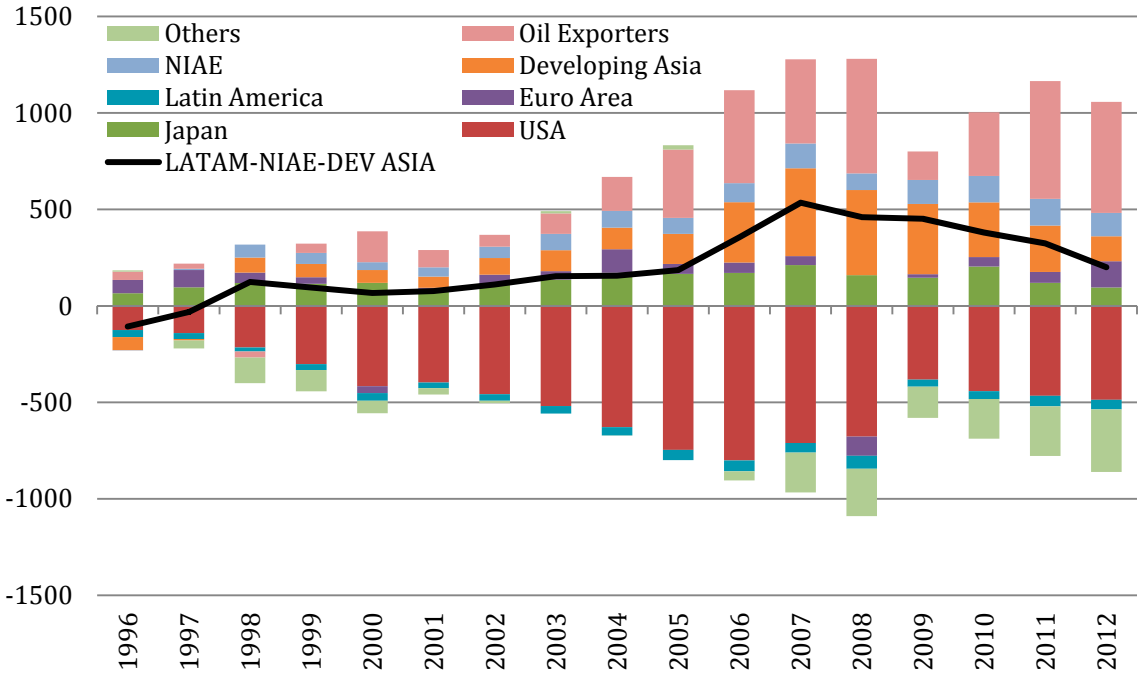
Prasad, Eswar S., Kenneth Rogoff, Shang-Jin Wei, and M. Ayhan Kose. 2003. *Effects of Financial Globalization on Developing Countries: Some Empirical Evidence.* IMF Occasional Paper 220, International Monetary Fund, Washington, DC.

Figure 1. Current account balance
(% of GDP)



Source: International Monetary Fund, *World Economic Outlook.* Latin America and developing Asia are simple averages across countries. Latin America: Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela. Developing Asia: China, India, Indonesia, Korea, Malaysia, Philippines and Thailand. Emerging markets (EME) corresponds to the IMF's weighted average definition.

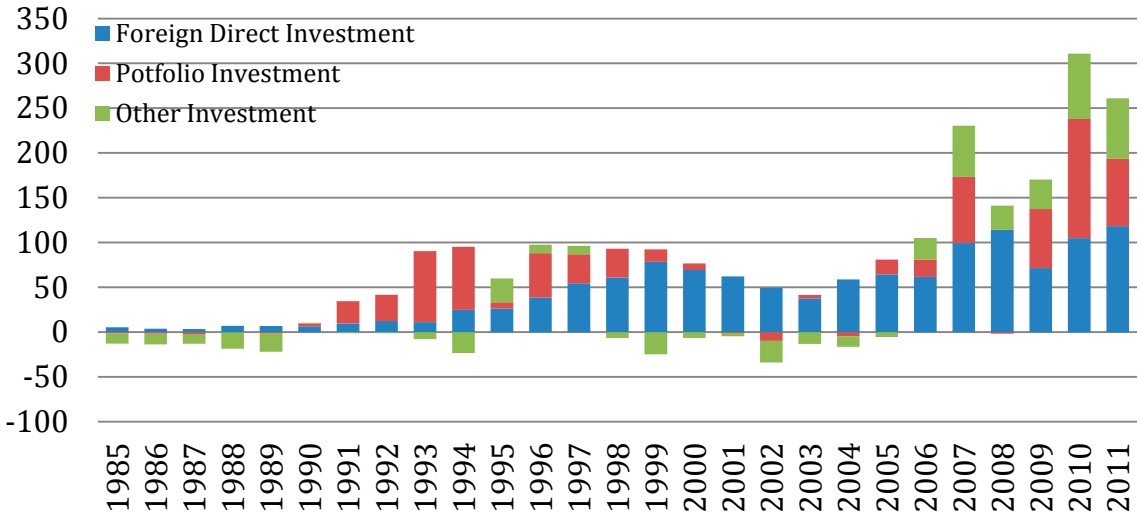
Figure 2. World current account
(billions of U.S. dollars)



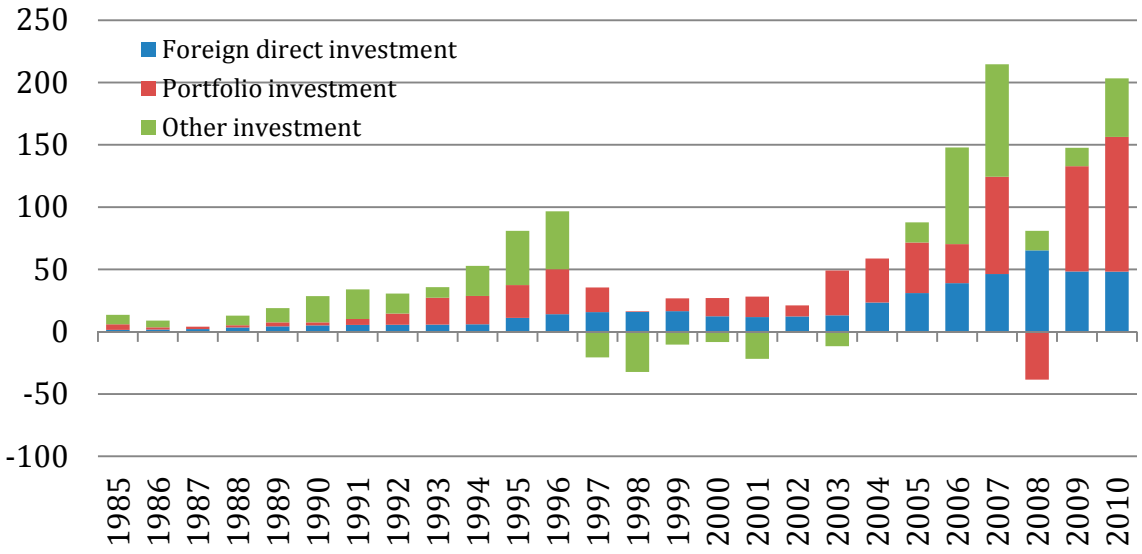
Source: International Monetary Fund, *World Economic Outlook* (WEO); 2013 is the WEO forecast. NIAE: New Industrialized Asian Economies.

Figure 3. Gross capital Inflows
(billions of U.S. dollars)

(a) Latin America

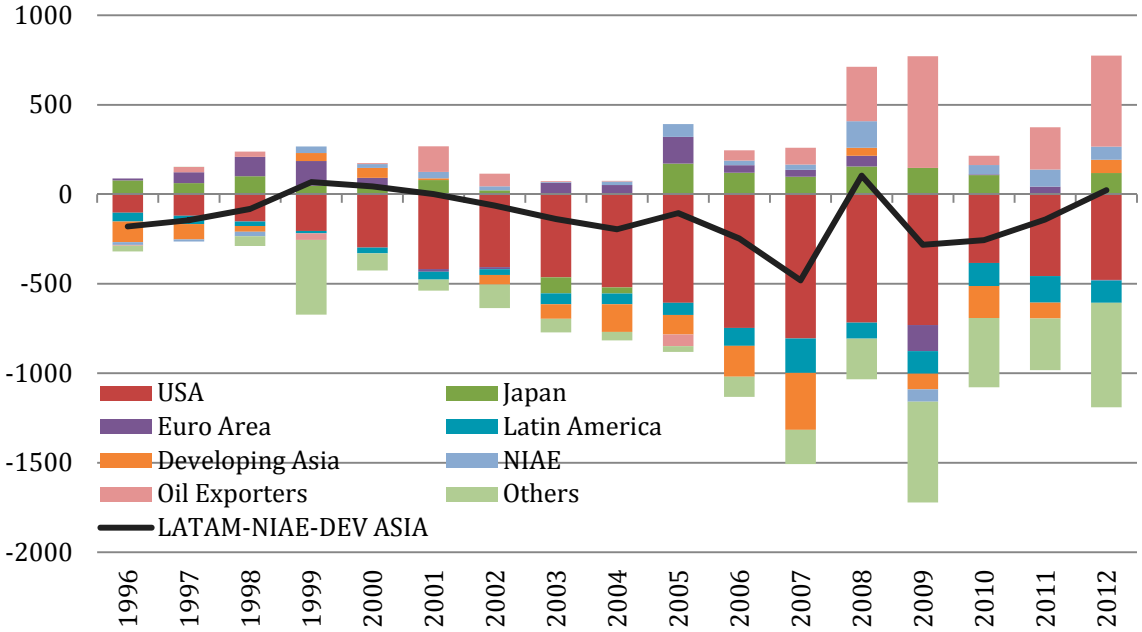


(b) Asia



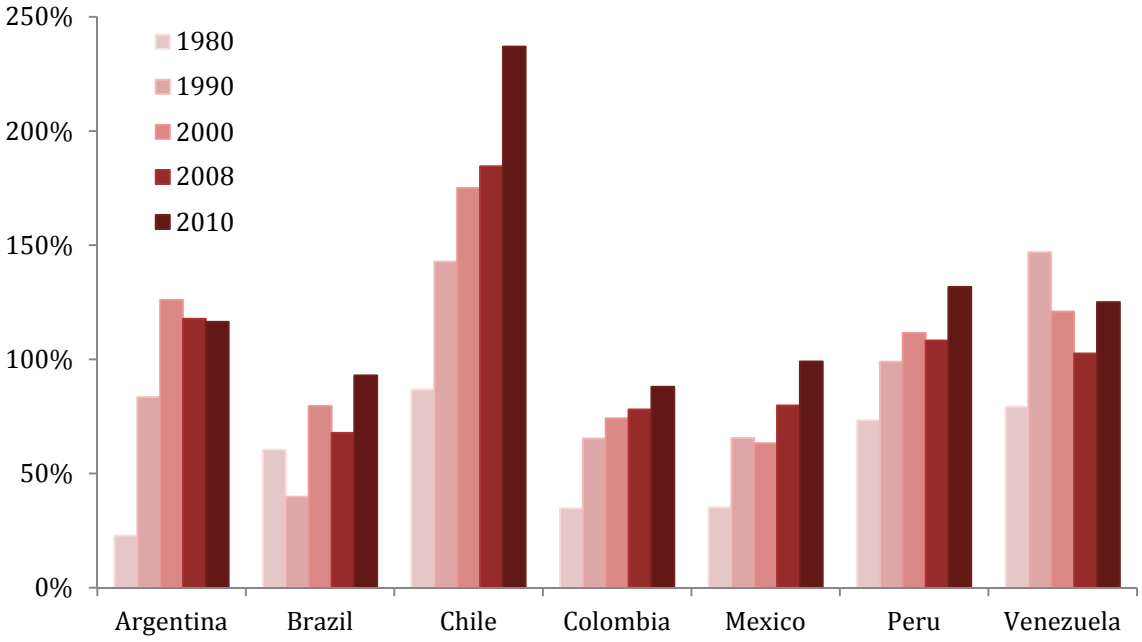
Source: International Monetary Fund, International Financial Statistics.

Figure 4. World current account plus reserves accumulation
(billions of U.S. dollars)



Source: International Monetary Fund, *World Economic Outlook.*

Figure 5. International financial integration in Latin America
(% of GDP)



Source: Lane and Milesi-Ferretti database.
Note: The index corresponds to international assets plus liabilities over GDP.

[1] This ignores accumulation of reserves here; that is discussed below.
[2] The countries in each category are those defined by the IMF in the *World Economic Outlook*.
[3] For further discussion on cross-border banking flows, see CIEPR (2012).
[4] The elasticity computed in IMF (2012) is interacted with capital controls, and the value ranges from zero for no capital controls to 0.4 with the strongest capital controls in the sample.
[5] For details, see Cowan and De Gregorio (2007). For a discussion on Latin America, see De Gregorio (2013).
[6] By that time, monetary policy was set in UF (unidad de fomento), an indexed unit of account, so to have the nominal equivalent, which is the one used in the text, I use the yearly inflation rate at that time.
[7] In the case of Brazil, Chamon and Garcia (2013) find no significant effects on the exchange rate, concluding that the IOF (Portuguese acronym for Tax on Financial Transactions) did not prevent appreciation. They argued that the "real game changer" for the appreciating trend of the Real (which has reverted in recent years) was the cut in the monetary policy interest rate.