

NUMBER PB10-18

JULY 2010

Dealing with Volatile Capital Flows

Olivier Jeanne

Olivier Jeanne, senior fellow at the Peterson Institute for International Economics, is also professor at the Department of Economics of Johns Hopkins University, Baltimore; research affiliate at the National Bureau of Economic Research; and research fellow at the Center for Economic Policy Research, London. This policy brief is his presentation at the G-20 Workshop on a “Framework for Strong, Sustainable and Balanced Growth,” Toronto, May 8–9, 2010.

© Peter G. Peterson Institute for International Economics. All rights reserved.

The set of tools and mechanisms with which emerging-market countries insure themselves against volatile capital flows is in a state of flux. Most emerging-market countries had accumulated an unprecedented level of international reserves before the global financial crisis that started in 2008. The crisis itself led to a large increase in International Monetary Fund (IMF) resources and the introduction of a new lending facility, the Flexible Credit Line (FCL). Meanwhile, some progress was made toward transforming the Chiang Mai Initiative into an Asian Monetary Fund, and the Greek debt crisis even prompted calls for the creation of a European Monetary Fund.

Against this background, I discuss some questions that may be useful to have in mind when thinking about the reform of international liquidity provision for emerging-market countries to deal with volatile capital flows:

- How have emerging-market countries dealt with capital flow volatility in the current crisis? What was the role of reserves versus international crisis-lending arrangements?
- What is the appropriate level of reserves for emerging-market countries? At what level will their precautionary demand for reserves be satiated (if any)?

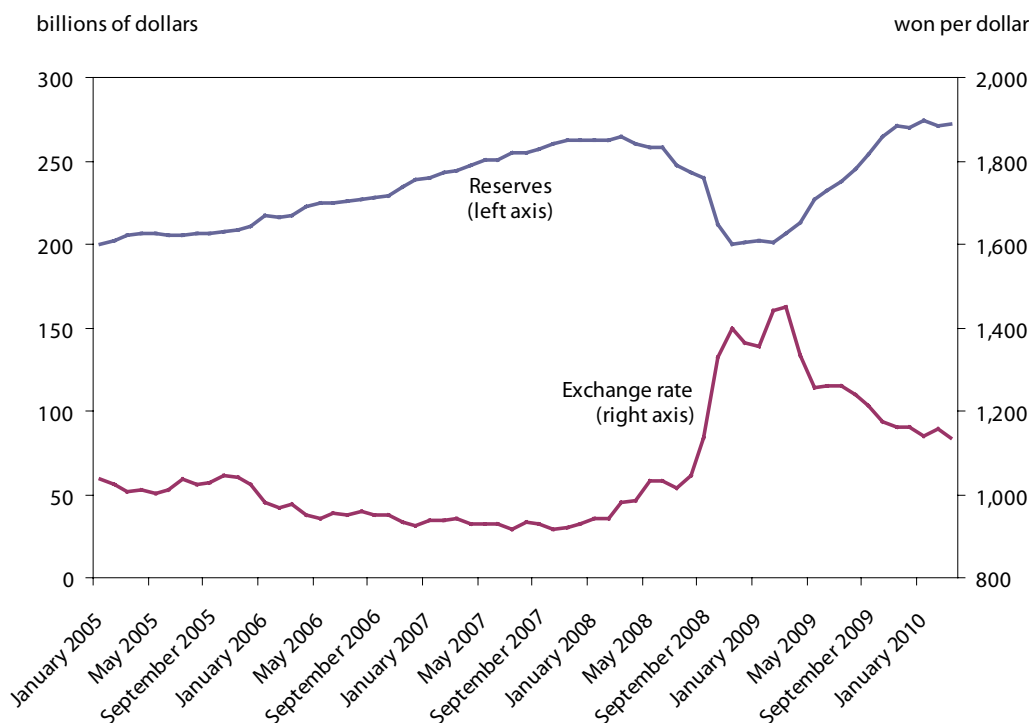
- How can international crisis-lending and liquidity-provision arrangements be improved? Can such improvements significantly reduce emerging-market countries’ demand for reserves?
- Looking forward, what role can financial regulation and capital controls play in dealing with volatile capital flows?

EMERGING-MARKET COUNTRIES’ RESERVES AND CAPITAL FLOW VOLATILITY IN THE CURRENT CRISIS

How have emerging-market countries’ reserves been used in the current crisis, and were international liquidity-provision arrangements important to deal with capital flow volatility? The experience of South Korea is interesting in this regard, because it is a good example of an emerging-market country having accumulated a substantial level of reserves and having—perhaps as a result—fared relatively well in the crisis. Furthermore, South Korea chairs the G-20 and has been a very active contributor to the debates on reforming international financial safety nets (Lim 2010).

As shown in figure 1, South Korea entered the crisis with about \$270 billion of foreign exchange reserves (amounting to approximately 30 percent of its GDP). The level of reserves started to decrease (and the won to depreciate) in early 2008, a trend that took a sharp turn for the worse after Lehman Brothers’ failure in September. Reserves then fell abruptly to about \$200 billion while the currency sharply depreciated, and Korean banks started to encounter difficulties in rolling over their short-term foreign debt. It is only after Korea entered a \$30 billion swap arrangement with the US Federal Reserve in October 2008 that the exchange rate and reserves stabilized. The Korean central bank was then able to reconstitute its stock of reserves (returning to the precrisis level by the end of 2009). The real economy was relatively spared throughout, with an unemployment rate that never exceeded 4 percent.

Whereas the experience of South Korea can be used to illustrate the benefits of maintaining a high level of international

Figure 1 South Korea: International reserves and exchange rate

Source: International Monetary Fund, *International Financial Statistics*.

reserves,¹ it also highlights a double paradox. First, even countries with large reserves had to rely on external liquidity provision to restore confidence in their economies; and second, the access to international liquidity was provided by foreign central banks² rather than by the existing international crisis-lending arrangements such as the IMF. This in turn raises two questions. First, if reserves amounting to 30 percent of GDP were not sufficient to avoid a confidence crisis, what level of reserves do emerging-market countries really need? And second, how can the existing international crisis-lending arrangements be reformed to fulfill their role more effectively in a crisis?

RESERVE ADEQUACY

Conventional rules of thumb suggest that emerging-market countries have accumulated an excessive amount of reserves.

1. However, as noted by Blanchard (2009), there is little correlation between emerging-market countries' precrisis level of reserves (reserves to GDP ratio in 2007) and how countries have fared during the crisis (GDP growth between 2008Q3 and 2009Q1).

2. The swap with the US Federal Reserve in October 2008 was followed by a swap arrangement with China and an expansion of existing yen swap arrangements in December 2008.

First, international reserves have become a large multiple of short-term external debt, although short-term debt is a good measure of a country's vulnerability to a sudden stop in capital flows. Second, many developing and emerging-market countries now have floating exchange rates and the fixed pegs that remain do not need to be sustained by a large amount of reserves.³ Third, the observed accumulation of reserves is difficult to explain by a cost-benefit analysis weighing the benefits of reserves in terms of crisis prevention and mitigation against the opportunity cost of not investing the reserves more productively (Jeanne 2007).

It would be tempting to conclude, on this basis, that reserves were not accumulated, at the margin, for precautionary motives but for other reasons—e.g., as a way of resisting currency appreciation and maintaining a competitive exchange rate. Although this view is plausible for China, it is not entirely convincing for countries such as Brazil, Korea, Mexico, or Singapore that had to rely on swap lines with the Federal Reserve in the crisis. But why did these countries'

3. For example, who would argue that China needs a large amount of reserves to defuse the risk of a speculative attack leading to a *devaluation* of its currency? However, it is mainly the risk of a speculative attack against a fixed peg, or of a run on dollar deposits, that justifies maintaining a high ratio of reserves to M2.

substantial level of reserves turn out to be insufficient in the fall of 2008?

The key issue in answering this question is how the reserves are used in a crisis. In principle, a rollover crisis in external debt does not require more reserves than the amount of short-term debt whose repayment is demanded by foreign creditors.⁴ This

The lack of a clear benchmark for the appropriate level of precautionary reserves, and for the appropriate use of reserves, is a problem, both at the country level and at the global level.

is the case, however, only if the reserves can be targeted to the domestic debtors affected by the rollover crisis *at the precrisis exchange rate*, as those debtors may become insolvent (rather than simply illiquid) if international liquidity is provided at a depreciated exchange rate. If the currency mismatches in domestic balances sheets⁵ cannot be unwound quickly at the precrisis exchange rate, then the authorities effectively end up defending an exchange rate objective and using the reserves to resist the depreciation of the domestic currency.

Whether emerging-market countries used their reserves in the most effective manner in the fall of 2008 is an important debate that requires further research.⁶ In the event, these countries went beyond using the reserves for the repayment of short-term external liabilities and tried to limit the fall in the dollar price of a range of domestic assets, including the exchange rate. With free capital mobility, however, the amount of reserves required to defend the foreign currency price of domestic assets may be a large fraction of M2 and even a multiple of M2 if speculators can borrow in domestic currency from domestic banks (Jeanne and Wyplosz 2003).

The lack of a clear benchmark for the appropriate level of precautionary reserves, and for the appropriate use of reserves, is a problem, both at the country level (where excessive reserve accumulation comes at the cost of domestic consumption or

investment) and at the global level (where it contributes to global financial imbalances). Absent a clear and well-accepted notion of how reserves should be used in a crisis, it is unlikely that economic research will lead to a “magic formula” for the optimal level of reserves that can be applied uniformly across countries. However, the international community could make more efforts to develop a normative framework for the appropriate level of reserves in emerging-market and developing countries.

In this regard, I suggest that the IMF request the member countries to provide a cost-benefit analysis of the appropriate level of reserves that are held for precautionary reasons in the context of its annual Article IV consultations. In the first stage of this process, the IMF would simply record each country’s analysis. In the second stage, comparing notes across countries and over time would hopefully lead to multilateral discipline, as it would be difficult for a country to change its criteria every year so as to justify an increasing level of reserves.

INTERNATIONAL CRISIS-LENDING AND LIQUIDITY-PROVISION ARRANGEMENTS

Why did Korea not rely on IMF lending in the fall of 1998? The main reason is that the US Federal Reserve provided liquidity more expeditiously than the IMF, with little conditionality or stigma effect. This raises the question of how the IMF can “compete” effectively with the Federal Reserve in providing the appropriate amount of liquidity to the appropriate countries and under the appropriate conditions.

Before I turn to a discussion of this question, it is important to emphasize another possible reason why an intervention by the Federal Reserve dominated IMF lending. Having an unlimited capacity to create dollar liquidity, the Federal Reserve may have been in a much better position than the IMF to restore confidence for the kind of crisis that Korea was facing. This point is worth emphasizing because, if what is required is *true lending-in-last-resort in a foreign currency*, no other institution than the central bank issuing that currency can fulfill this role effectively.⁷

Coming back to the IMF, its conditionality has been streamlined, and there have been efforts to create more effective precautionary facilities since 2000, following the critiques against its heavy-handed intervention in the 1997–98 East Asian crisis. The build-up in emerging-market reserves and the global financial imbalances then provided another motivation

4. This is the rationale behind the “Greenspan-Guidotti rule” of full coverage of short-term external debt by reserves, which was proposed as a substitute to the old three-months-of-imports rule following the 1994–95 Mexican crisis.

5. The currency mismatches that matter involve primarily short-term debt, as the exchange rate has a good chance of having gone back to its precrisis value when long-term debt becomes due.

6. One question is whether the reserves spent on foreign exchange interventions could not have been used more effectively by targeting them toward the domestic agents indebted in foreign currency through some form of discount-window lending.

7. The international safety nets would then need to involve the central banks issuing the main world currencies. For example, Truman (2008) proposed a multilateralization of the Federal Reserve swaps through the IMF. However, participating in such an arrangement may be inconsistent with central banks’ mandates.

for making IMF resources more substitutable to countries' own reserves. In this regard, the FCL, introduced in March 2009, marks an important shift from *ex post* conditionality for crisis countries to *ex ante* conditionality for countries with sound fundamentals (Jeanne, Ostry, and Zettelmeyer 2008).⁸

Given the way that it is structured, however, it is clear that one dollar of FCL is worth substantially less than one dollar of country's own reserves. The FCL works as a renewable credit line, which at the country's discretion can initially be for either a six-month period or a 12-month period with a review of eligibility after six months. Thus, access is guaranteed for a relatively short period, and future prequalification

Crisis lending at the regional level is not new.... What is new is the emergence of regional institutions that may, in the future, provide alternatives to IMF conditionality.

is neither guaranteed nor easily predictable. The criteria for prequalification are somewhat vague, and their future interpretation by the Fund staff and Board is uncertain.

Although it might seem desirable to make access to the FCL more predictable, moving in this direction involves hard trade-offs. Lengthening the period of prequalification creates a risk that countries will have access even after their policies have deteriorated. Another approach would be to use quantitative criteria à la Maastricht to prequalify countries. However, this approach would make it difficult to adapt the criteria to evolving sources of vulnerability in the global financial system and may lend itself to manipulation by the participating countries. Those trade-offs are bound to arise in any liquidity arrangement that seeks to make access both predictable and selective.

This being said, there is certainly scope for improving the FCL or for offering a richer menu of FCL-like facilities. First, the IMF could make its prequalification decisions more predictable without committing itself to rigid rules, through its jurisprudence. In particular, the staff reports that are released to explain why countries qualify for the FCL could do a better job of stating the general criteria behind the Fund's decision. The IMF could also provide a menu including different levels of access to the FCL with variable premia and lending terms (Ostry and Zettelmeyer 2005, Ubide 2007, Blanchard 2009).

As desirable as these improvements to the FCL seem, they are unlikely, in the end, to make IMF resources a very close

substitute to countries' own reserves because there will always be hard constraints on the automaticity with which access can be granted. Thus, one may be forgiven for being skeptical that the FCL or FCL-like mechanisms will have a large impact on emerging-market countries' reserve accumulation and global financial imbalances.

Another issue where conditionality is important is the future coexistence of the IMF with regional liquidity-provision arrangements such as the Chiang Mai Initiative. Crisis lending at the regional level is not new: In many cases (e.g., the 1994–95 Mexican crisis) IMF lending has been supplemented with regional resources. What is new is the emergence of regional *institutions* that may, in the future, provide alternatives to IMF conditionality. Indeed, it is difficult not to think that the main purpose of those arrangements (which otherwise seem to have little benefits in terms of risk pooling since crises are more often regional than global) is to provide alternatives to IMF conditionality.

Reducing the IMF's monopoly power over the definition of conditionality may ultimately lead to positive outcomes, but it also seems important to avoid inefficient coordination problems as we move toward a new institutional equilibrium. One natural first step would be a two-tier system in which the regional level lends up to a certain extent, which can be increased by IMF lending associated with more demanding conditionality.⁹ Looking forward, one could imagine moving toward a regime in which those roles are reversed—i.e., with the regional level defining conditionality and the IMF being a complementary source of funds. This model might make sense if regional conditionality is politically more acceptable than IMF conditionality (a notion that remains to be tested), but it would imply a significant reallocation of power, staff, and resources from the IMF to regional arrangements.

FINANCIAL REGULATION AND CAPITAL CONTROLS

Financial opening in emerging-market countries may have benefits in decreasing the cost of equity capital and can have a positive effect on domestic investment. However, the economic gains of international financial flows seem modest for developing and emerging-market economies (Gourinchas and Jeanne 2006). Moreover, a voluminous literature surveyed by Aizenman (2004) emphasizes the risks of liberalization and the vulnerability of emerging-market financial systems to capital mobility.

Against this background, the conventional wisdom on

8. Three countries, Mexico, Poland, and Colombia, have qualified for the FCL, for a total amount of \$79 billion of IMF resources. They have not drawn on the FCL so far.

9. This approach is currently adopted by the Chiang Mai Initiative, in which countries can access 20 percent of their quotas without IMF conditionality.

capital controls is evolving. Chile has some experience with prudential capital controls on inflows and some countries have introduced such controls in the current crisis. Recent research allows us to understand better the welfare case for optimal capital controls. For example, capital controls can mitigate booms and busts in capital flows and asset prices (Jeanne and Korinek 2010). From this point of view, controls can be viewed as one component of the new macro-prudential policy

framework that has been called for in the global financial crisis. The benefits of capital controls must be weighed against their costs, which are many and have justified the opposition of the IMF to their use. This opposition is, however, softening (Ostry et al. 2010), which I view as a positive development. Looking forward, the IMF and the international community should play a more active role and develop with its members a code of good practice for prudential capital controls.

REFERENCES

- Aizenman, Joshua. 2004. Financial Opening and Development: Evidence and Policy Controversies. *American Economic Review* (May): 65–70.
- Blanchard, Olivier. 2009. Global Liquidity Provision. Presentation at the Jornadas Monetaria y Bancarias of the BCRA, Argentina.
- Gourinchas, Pierre-Olivier, and Olivier Jeanne. 2006. The Elusive Gains from International Financial Integration. *Review of Economic Studies* 73, no. 3: 715–41.
- Jeanne, Olivier. 2007. International Reserves in Emerging Market Countries: Too Much of a Good Thing? In *Brookings Papers on Economic Activity* 1, ed., W. C. Brainard and G. L. Perry. Washington: Brookings Institution.
- Jeanne, Olivier, and Anton Korinek. 2010. Excessive Volatility in Capital Flows: A Pigouvian Taxation Approach. *American Economic Review, AEA Papers and Proceedings*: 403–407.
- Jeanne, Olivier, and Charles Wyplosz. 2003. The International Lender of Last Resort: How Large Is Large Enough? In *Managing Currency Crises in Emerging Markets*, ed., Michael Dooley and Jeffrey Frankel. Chicago: University of Chicago Press, 89–118.
- Jeanne, Olivier, Jonathan Ostry, and Jeromin Zettelmeyer. 2008. *A Theory of International Crisis Lending and IMF Conditionality*. IMF Working Paper 08/236. Washington: International Monetary Fund.
- Lim, Jean. 2010. The FX Liquidity Insurance for Sudden Reversals of International Capital Flow. Presentation at the conference on Mitigating Risks in the International Financial System, Incheon, February 26.
- Obstfeld, Maurice, Jay C. Shambaugh, and Alan Taylor. 2008. *Financial Stability, the Trilemma, and International Reserves*. NBER Working Paper 14217. Cambridge, MA: National Bureau of Economic Research.
- Jonathan Ostry, Atish Ghosh, Karl Habermeier, Marcus Chamon, Mahvash Qureshi, and Dennis Reinhart. 2010. *Capital Inflows: The Role of Controls*. IMF Staff Position Note SPN 10/04. Washington: International Monetary Fund.
- Ostry, Jonathan, and Jeromin Zettelmeyer. 2005. *Strengthening IMF Crisis Prevention*. IMF Working Paper 05/206. Washington: International Monetary Fund.
- Truman, Edwin M. 2008. *On What Terms Is the IMF Worth Funding?* Working Paper 08-11. Washington: Peterson Institute for International Economics.
- Ubide, Angel. 2007. Rethinking the IMF Business Model: Proposals for Assessment and Reform of the IMF's Medium Term Strategy. In *The International Monetary System, the IMF, and the G-20: A Great Transformation in the Making*, ed. Richard Samans, Marc Uzan, and Augusto Lopez-Claros, World Economic Forum and RBWF. Palgrave Macmillan.

The views expressed in this publication are those of the author. This publication is part of the overall programs of the Institute, as endorsed by its Board of Directors, but does not necessarily reflect the views of individual members of the Board or the Advisory Committee.