

## 25

---

**Capital Account Management**

Hélène Rey

**Benefits of Financial Integration: Theory and Evidence**

I will start by asking basic questions about international capital flows. Many policy discussions are based on the premise that international capital flows bring some important benefits to countries' economies. When asked more precisely, policymakers identify two main benefits of international capital flows: improvements in allocative efficiency and in risk sharing. Because of financial integration, capital can flow to places where it is put to its most productive use, that is, places where the marginal product of capital is highest. This view comes, of course, straight from the neoclassical growth model.

Policymakers would add that international capital flows are also beneficial because they enable better risk sharing, which is again a statement conveyed by many economic models.

**Empirical Evidence**

Numerous studies exist that actually try to look at the data for the effects of international capital flows on growth or on consumption volatility, trying to test for these two types of gains. Surprisingly, these effects are hard to find in macroeconomic data: the benefits of capital flows are remarkably elusive. As attested by the most recent surveys reviewing a long list of empirical papers, it is hard to find robust evidence of an impact of financial openness on growth or on improved risk sharing (e.g., Eichengreen 2002; Kose et al. 2006; Obstfeld 2009; Jeanne, Subramanian, and Williamson 2012).

To be fair, some papers point toward the existence of threshold effects: Capital flows would be beneficial only after a country has reached a certain amount of institutional or financial sector development. There are also some differences if one looks across different types of capital flows: Some capital flows seem better at delivering growth and risk-sharing benefits than others. But this evidence is not very conclusive because, often, the sample used seems to make a difference. Some papers using microeconomic data find a decrease in the cost of capital at the time of financial integration. So the question is, why don't we see more of an effect at the aggregate level?

There is also some recent research analyzing the role of global banks and looking at whether the large international capital flows that we see within the internal realm of global banks have had any effect on the real side of the economy. Cetorelli and Goldberg (2012) point toward a better allocation of liquidity within global banks. But one might wonder whether this comes together with a weakening of the monetary policy transmission, as global banks can reshuffle liquidity across borders to offset the effect of national monetary policies. If global banks can allocate liquidity among their various subsidiaries and branches, that may have benefits, but it might also be a way of circumventing the effects of monetary policy.

So, from the point of view of the empirical evidence, the jury is still out. So far, however, the evidence seems surprisingly less conclusive than what one might have thought, given both our strong theoretical priors and the sheer size of international capital flows in the world economy.

### Calibrated Models

The neoclassical growth model is behind many of our economic intuitions regarding why the free flow of capital could be beneficial. Interestingly, even within that paradigm, realistic calibrations indicate that gains tend to be small. Gourinchas and Jeanne (2006) have shown, in the context of small open economies and in a deterministic setting, that gains were second order. All that international financial integration does in that context is to speed up transition toward the steady state of the economy. Coeurdacier, Rey, and Winant (2013) allow for uncertainty and estimate welfare gains from allocative efficiency and risk sharing together, within the context of a general equilibrium neoclassical growth model. They find that even in such a world, where the interaction between the

precautionary savings motives and allocative efficiency effects is modeled explicitly, welfare gains are small. Such a model can, in particular, generate the realistic outcome that a volatile emerging market ends up exporting capital when it opens up its financial account (unless it is an extremely capital-scarce country, far away from its steady state at the outset). So both on the empirical side and on the theoretical side it is hard to find support, at this juncture, for large, quantifiable benefits of international financial integration.

I am not necessarily claiming that benefits to international financial integration do not exist, only that they have been elusive so far. In that light, it would be useful to identify more precisely the channels through which capital flows may be beneficial. We should look at more specific types of flows, and more closely at potential effects on total factor productivity.

### Costs of Financial Flows

On the cost side, having gone through a number of crises in emerging markets and in advanced economies, we have some ideas about costs to international financial integration and capital flows. Reinhart and Reinhart (2008) wrote about capital flow bonanzas, that is, periods in which international liquidity is abundant and there are large capital flows into emerging markets, which may be subject to sharp reversal.

These large capital flows tend to be correlated with inflation in asset prices. There is a surprisingly large common component in risky asset prices (Miranda-Agrippino and Rey 2012). In other words, although we might think that risky asset prices around the world are largely determined by specific country macroeconomic conditions, local conditions, that would be wrong. There is an important global factor.

Associated with these capital flow bonanzas has been excessive appreciation of currencies, which strained the competitiveness of the tradables sector. Within the euro area the loss of competitiveness of the periphery has been to some extent caused by massive inflows of capital, which have bid up the price of real estate. The banking system has channeled massive capital flows into a number of countries, such as Spain and Ireland, fueling real estate investment booms that have increased non-tradables' prices and unit labor costs.

### Changes in the International Financial Landscape

The main change in the international financial landscape in the past 20 years has been the tremendous increase in cross-border gross asset flows and positions (see Lane and Milesi-Ferretti 2007; Gourinchas and Rey 2013). We need new frameworks, new ways of thinking through the benefits and costs of integration that take into account the importance of gross flows (in addition to net flows). That is to say, thinking about current account sustainability is not enough—we need to worry also about gross flows.

For financial stability purposes, gross flows matter, and they matter more as the external balance sheets of countries expand. In terms of the transmission of the 2008 financial crisis to Europe, for example, the position of the euro area vis-à-vis the United States was roughly balanced; there was no current account issue. But there were massive exposures through the gross positions of European countries. Their financial systems were exposed to US toxic assets, exchange rate movements, and funding risk. This illustrates that there are potentially massive valuation effects (capital gains and losses) when external balance sheets are large. This is really what has changed in the past two decades and what we need to take into account. It is no longer only about current account and net flows; it is also about gross flows and large gross positions at the financial sector and country level. Risk transmission can be heightened through various channels, including a currency mismatch between assets and liabilities or a maturity mismatch.

### Procyclicality of Credit Flows

Credit flows are procyclical (Committee on International Economic Policy and Reform 2012; Bruno and Shin 2013). They grew at a fast rate in the 2003–2007 precrisis period. There is a positive feedback loop between greater credit supply, asset price inflation, and a compression of spreads. Smaller risk premiums amplify the credit boom; as measured, the risk is low and balance sheets look healthier as asset prices go up. By relaxing constraints, this creates additional space for lending and for credit, and so on.

This mechanism occurs when value-at-risk constraints operate in the banking sectors (Adrian and Shin 2012). This is a major positive feedback loop between credit supply and risk spreads, one that contributes to the

procyclicality of credit flows and their importance in the run-up to the crisis.

### Managing Balance Sheets

In the presence of positive feedback loops, we need circuit breakers. The traditional feedback loop that has confronted policymakers is the following. Large capital inflows into a growing economy tend to create inflation, exchange rate appreciation, and expectation of inflation. In such a situation, the central bank response is often to increase the interest rate to keep inflation under control, but because yields are now higher, capital keeps flowing in and the exchange rate keeps appreciating. This positive feedback loop justified the use of capital controls or, more broadly, capital flow management. Beside this traditional feedback loop is this new feedback loop described above, which has to do with credit flows and the procyclicality of leverage. High credit flows bid up asset prices, improve balance sheets, and lead to more flows and credit creation. The large balance sheets being built up have to be monitored carefully. This is all the more important because valuation effects can be of the same order of magnitude as current account movements (Gourinchas, Rey, and Truempeler 2012).

When should one intervene? When should one activate circuit breakers to cut those positive feedback loops?

It is important, in my view, not to wait too long; not to wait, for example, for the quasi-certainty that there is a bubble in asset prices or real estate to intervene. Rather, one should continuously stress-test the balance sheet of the financial sector and of the country and judge whether large but realistic changes in asset prices could jeopardize financial stability. If so, macroprudential intervention or some type of capital flow management intervention should take place. I understand the difficulty of doing stress tests in general and estimating second-round effects in particular, but doing stress tests on a continuous basis, even if it is an imperfect process, is a necessary monitoring tool.

What are the tools available for intervention? The choice between macroprudential tools and capital management tools has to be somewhat pragmatic, depending on where the problems are and on the different institutional settings. Macroprudential tools tend to be more targeted. But capital controls may be appropriate if there is a lot of direct cross-border lending and the banking system is circumvented.

## Conclusions

We should not forget in this whole discussion of circuit breakers that there are usually important domestic distortions that interact with capital flows. In practice, for political reasons, we see many subsidies to investment in real estate. These subsidies are instrumental in creating the initial bubble in real estate prices and investment. By all means, the first thing to do is to remove these distortions. It is also important to remember that excessive borrowing by a country means that someone else is lending excessively: Macroprudential policies apply to lenders just as well as they apply to borrowers.

I have discussed the use of capital flow management and macroprudential tools from an *ex ante* point of view (to prevent crises), but there may be also, in some cases, an important role for capital account management *ex post* (after a crisis). For example, capital controls can be used to avoid major capital losses for households and companies that borrowed in foreign currency and are heavily exposed to further exchange rate depreciation. This type of *ex post* policy intervention may have been useful in a country such as Iceland where there are large amounts of krona-denominated assets in portfolios of foreign investors and where massive capital flight and large, ensuing depreciation would have been likely in the absence of controls (see Baldursson and Portes 2013).

But we have to keep in mind that in this crisis, we have to deal with clearly subpar preventive policies, which have left us with a very difficult situation. Meanwhile, we must really think hard about better governance looking forward.

## References

- Adrian, T., and H. S. Shin. 2012. "Procyclical Leverage and Value at Risk." Federal Reserve Bank of New York Staff Report 338, Federal Reserve Bank of New York, New York. [http://app.ny.frb.org/research/staff\\_reports/sr338.pdf](http://app.ny.frb.org/research/staff_reports/sr338.pdf).
- Baldursson, F., and R. Portes. 2013. "Gambling for resurrection in Iceland: the rise and fall of the banks." CEPR DP 9664.
- Committee on International Economic Policy and Reform. 2012. "Banks and Cross-Border Capital Flows: Policy Challenges and Regulatory Responses." Brookings Institution, Washington, DC. <http://www.brookings.edu/~media/research/files/reports/2012/9/ciepr/09%20ciepr%20banking%20capital%20flows>.

- Bruno, V., and H. S. Shin. 2013. "Capital Flows, Cross-Border Banking and Global Liquidity." NBER Working Paper 19038, National Bureau of Economic Research, Cambridge, MA, May. <http://www.nber.org/papers/w19038>.
- Cetorelli, N., and L. Goldberg. 2012. "Liquidity Management of US Global Banks: Internal Capital Markets in the Great Recession." *Journal of International Economics* 88 (2): 299–311.
- Coeurdacier, N., H. Rey, and P. Winant. 2013. "Financial Integration and Growth in a Risky World." Manuscript, London Business School, London; NBER, Cambridge, MA; and Department of Economics, Sciences Po, Paris. [http://www.helenerey.eu/AjaxRequestHandler.ashx?Function=GetSecuredDOC&DOCUrl=App\\_Data/helenerey\\_eu/Working-Papers\\_en-GB/\\_Documents\\_2012-13/71507397123\\_67186463733\\_CRW\\_slides\\_040713\\_HR.pdf](http://www.helenerey.eu/AjaxRequestHandler.ashx?Function=GetSecuredDOC&DOCUrl=App_Data/helenerey_eu/Working-Papers_en-GB/_Documents_2012-13/71507397123_67186463733_CRW_slides_040713_HR.pdf).
- Committee on International Economic Policy and Reform. 2012. "Banks and Cross-Border Capital Flows: Policy Challenges and Regulatory Responses." Brookings Institution, Washington, DC. <http://www.brookings.edu/~media/research/files/reports/2012/9/ciepr/09%20ciepr%20banking%20capital%20flows>.
- Eichengreen, B. 2002. "Capital Account Liberalization: What Do the Cross-Country Studies Tell Us?" *World Bank Economic Review* 15:341–366.
- Gourinchas, P.-O., and O. Jeanne. 2006. "The Elusive Gains from International Financial Integration." *Review of Economic Studies* 73:715–741.
- Gourinchas, P.-O., and H. Rey. 2013. "External Adjustment, Global Imbalances, and Valuation Effects." In *Handbook of International Economics*, ed. Gita Gopinath, Elhanan Helpman, and Ken Rogoff. Elsevier: North Holland.
- Gourinchas, P.-O., H. Rey, and K. Truempler. 2012. "The Financial Crisis and the Geography of Wealth Transfers." *Journal of International Economics* 88 (2):266–283.
- Jeanne, O., A. Subramanian, and J. Williamson. 2012. *Who Needs to Open the Capital Account?* Washington, DC: Peterson Institute.
- Kose, M. A., E. Prasad, K. Rogoff, and S. J. Wei. 2009. "Financial Globalization: A Reappraisal." *IMF Staff Papers* 56:8–62.
- Lane, P., and G. M. Milesi-Ferretti. 2007. "The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970–2004." *Journal of International Economics* 73 (2): 223–250.
- Miranda-Agrippino, S., and H. Rey. 2012. "World Asset Markets and Global Liquidity." Manuscript, London Business School, London.
- Obstfeld, M. 2009. "International Finance and Growth in Developing Countries: What Have We Learned?" *IMF Staff Papers* 56 (1).
- Reinhart, C., and V. Reinhart. 2008. "Capital Flow Bonanzas: An Encompassing View of the Past and Present." In *NBER International Seminar in Macroeconomics*, ed. Jeffrey Frankel and Francesco Giavazzi. Chicago: University of Chicago Press.

PROPERTY OF MIT PRESS: FOR PROOFREADING AND INDEXING PURPOSES ONLY

R