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Financial Crises

Gross Capital Flows: Dynamics and Crises

Capital flows by foreign and domestic agents seem to be driven by shocks that affect them asymmetrically. Understanding both types of flows seems crucial

International capital flows have played an increasingly important role in the business cycle of developed and developing countries, especially during financial crises. This has prompted the growth of a large literature analyzing the cyclical behavior of these flows. The literature has focused on *net* capital flows, defined as the difference in *gross* capital flows—that is, net purchases of domestic assets by foreign agents minus net purchases of foreign assets by domestic agents. Much less is known about the behavior of gross capital flows.

Understanding the behavior of gross capital flows seems crucial, however, since capital flows by foreign and domestic agents are probably driven by different incentives. And many important questions remain unanswered. For example, are periods in which foreign agents purchase domestic assets also periods in which domestic agents sell foreign assets? Is there a positive or negative correlation between capital flows by foreign and domestic agents? What is the behavior of gross capital flows over the business cycle and during financial crises? We know that crises are associated with reductions in net capital inflows. But are these reductions on average due to sales of domestic assets by foreign agents, purchases of foreign assets by domestic agents, or both? How large and how

volatile are gross capital flows relative to net capital flows?

To address such questions, a new paper by Broner, Didier, Erce, and Schmukler documents new stylized facts about the dynamics of gross capital flows: the capital inflows by foreign agents (CIF) and the capital outflows by domestic agents (COD). CIF and COD are constructed from balance of payments data from the International Monetary Fund's International Financial Statistics, covering 1970–2009 for 103 countries. The analysis leads to three main conclusions.

First, over the past four decades the volatility of gross capital flows (CIF and COD) has been large and increasing, especially relative to the much lower volatility of net capital flows. This reflects the increasingly positive correlation between CIF and COD.

Second, gross capital flows are procyclical: During expansions foreign agents increase their purchases of domestic assets and domestic agents increase their purchases of foreign assets. During crises, especially severe ones, both CIF and COD decline, though CIF tends to fall more.

Third, a decomposition of gross capital flows reveals interesting heterogeneity in the behavior of their components around crises. For all country groups the reduction in CIF is due to declines in all its components. For developed countries the reduction in COD is due to declines in equity, portfolio debt, bank flows, and direct investments but not in reserves. For developing countries declines in

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reserves account for an important part of the reduction in COD, but there are also significant declines in equity, bank flows, and direct investments.

The findings have important implications for the sources of fluctuations in economies open to capital flows. A growing literature on international macro-finance emphasizes productivity shocks as the main source of fluctuations in such economies. While it is possible to construct models in which productivity shocks lead to a positive correlation between CIF and COD, this does not seem to be the most natural effect of productivity shocks. In particular, if a negative productivity shock reduces the incentives for domestic agents to invest at home, it would seem most natural that foreigners would also have fewer incentives to invest in the country.

The evidence presented in the paper suggests that other factors besides productivity shocks must be important determinants of gross capital flows. In addition, and unlike productivity shocks, these factors must affect foreign and domestic agents asymmetrically. One set of models introduces asymmetric information between domestic and foreign agents. Others introduce asymmetry in asset returns depending on whether the asset is held by foreign or domestic agents. For example, domestic agents might be less likely to be defaulted on than

foreign agents. More generally, all models in which crises are associated with a relative deterioration of foreigners' property rights are likely to predict retrenchment (a reduction in both CIF and COD) during crises.

Another potential asymmetry is in access to liquidity during crises, with domestic agents probably becoming more financially constrained than foreigners. This asymmetry is likely to lead to fire sales of domestic firms to foreigners. The authors find mixed results in this respect. While there is some evidence that inflows of foreign direct investment increase in high-income countries during severe crises, this does not seem to be the case in developing countries. Overall, fire sales do not appear to be an important determinant of capital flows in the typical developing country crisis.

While it is difficult to reject general classes of models, the stylized facts provided in the paper should help in judging the relevance of existing and future theories of international capital flows.

Fernando Broner, Tatiana Didier, Aitor Erce, and Sergio L. Schmukler. 2011. "Gross Capital Flows: Dynamics and Crises." *Policy Research Working Paper 5768*, World Bank, Washington, DC.

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