From Capital Flow Bonanza to Financial Cras

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August 2008

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October 20, 2008

A pattern has often been repeated in the modern era of global finance. Foreign investors turn with interest toward some "foreign" market. Capital flows in volume into the "hot" financial market. The exchange rate tends to appreciate, asset prices to rally, and local commodity prices to boom. These favorable asset price movements improve national fiscal indicators and encourage domestic credit expansion. These, in turn, exacerbate structural weaknesses in the domestic banking sector even as those local institutions are courted by global financial institutions seeking entry into a hot market.

But tides also go out when the fancy of global investors shift and the "new paradigm" looks shop worn. Flows reverse and asset prices give back their gains, often forcing a painful adjustment on the economy.

In a recent paper, we examined the macroeconomic adjustments surrounding episodes of sizable capital inflows in a large set of countries.[1] Identifying these "capital flow bonanzas" turns out to be a useful organizing device for understanding the swings in investor interest in foreign markets as reflected in asset price booms and crashes and for predicting sovereign defaults and other crises.

The bonanza episodes

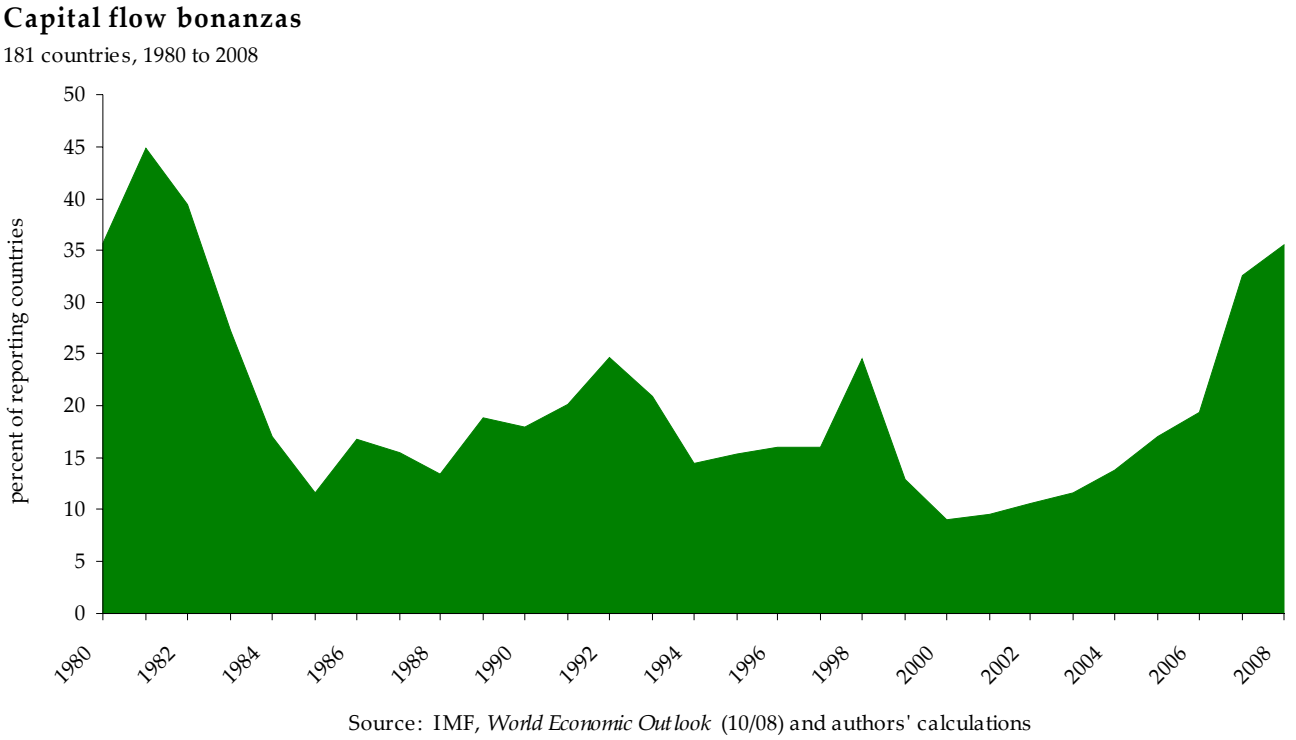
For each of 181 countries, we defined a capital flow bonanza as an episode in which there are larger-than-normal net inflows (operationally, those inflows bigger than the 80th percentile of the entire sample). As can be seen in the share of countries experiencing a capital bonanza year by year plotted in the figure below, bonanzas are clustered in time even though they were defined using country-specific cutoffs. 2

[1] "Capital Flow Bonanzas: An Encompassing View of the Past and Present," CEPR Discussion Paper, October 2008.

2 The charts and tables below have been updated with the recently released IMF, World Economic Outlook (October

There were two eras of booms of boons over the past three decades. The first ran from 1975 to 1982 and the world is living through the second—which appears to be partially unwinding. In both, real interest rates in the financial centers of the world were low and often negative, growth in advanced economies was sluggish, and commodity prices were rising rapidly. Statistical evidence suggests that these three variables are important systematic determinants of capital flow bonanzas. If the historical pattern plays out again, capital flows may remain elevated for the next few years, encouraged by the lagged effects of low real interest rates.

Figure 1



Source: IMF, *World Economic Outlook* (10/08) and authors' calculations

The initial wave of bonanzas had a distinct Latin American flavor, including such countries as Brazil, Chile, and Mexico. This is an ominous precedent, in that the first great wave of inflows in recent

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memory ended in the emerging market debt crisis of the 1980s. This shows through systematically over time. Over a longer period, capital flow bonanzas appear to help predict government defaults and other financial crises.

Recent bonanza episodes

As for the recent experience, the table below lists the countries experiencing capital flow bonanzas over the past three years. We applied the technique described in our paper to the IMF forecast made earlier this month. As is evident, two main groups of countries have been beneficiaries of outsized net inflows in recent years: Industrial countries with house-price booms (such as Ireland, Spain, the United Kingdom, and the United States) and nations in Central and Eastern Europe expected to converge to the center with the enlargement of the European Union (such as Bulgaria, Romania, and Slovenia).

Countries with recent notable capital inflows	2006	2007	2008
Bulgaria	√	√	√
Iceland	√	√	√
Italy	√	√	√
Jamaica	√	√	√
Latvia	√	√	√
New Zealand	√	√	√
Pakistan	√	√	√
Romania	√	√	√
Slovenia	√	√	√
South Africa	√	√	√
Spain	√	√	√
Turkey	√	√	√
United Kingdom	√	√	√
United States	√	√	√

Source: IMF, World Economic Outlook (10/08) and authors' calculations.
Notes: For the full list of recent bonanza episodes see the paper.

Cross-checking this list with recent headlines in the financial news supports the contention that the

concept of a capital-flow bonanza may be a useful device for identifying countries likely to undergo significant macroeconomic adjustment—perhaps even a crisis, an issue we turn to next.

Capital flow bonanzas and financial crises

To examine the potential links with financial crises of various stripes, we constructed a family of country-specific probabilities. For each of the 64 countries, this implies four unconditional crisis probabilities, that of: default (or restructuring) on external sovereign debt, a currency crash, and a banking crisis.[3] We also constructed the probability of each type of crisis within a window of three years before and after the bonanza year or years, this we refer to as the conditional probability of a crisis. If capital flow bonanzas make countries more crises prone, the conditional probability should be greater than the unconditional probability of a crisis.

We summarize the *main results* and then provide *illustrative examples*. For the full sample, the probability of any of the three varieties of crises conditional on a capital flow bonanza is significantly higher than the unconditional probability. Put differently, the incidence of a financial crisis is *higher* around a capital inflow bonanza. However, separating the high income countries from the rest qualifies the general result. As for the high income group, there are no systematic differences between the conditional and unconditional probabilities in the *aggregate*, although there are numerous country cases where the crisis probabilities increase markedly around a capital flow bonanza episode.

Also, to provide an indication of how commonplace is it across countries to see bonanzas associated with a more crisis-prone environment, we also calculate what share of countries show a higher likelihood of crisis (of each type) around bonanza episodes. For sovereign defaults, less than half the countries (42 percent) record an increase in default probabilities around capital flow bonanzas. (Here, it is important to recall that about one-third of the countries in the sample are high income.) In

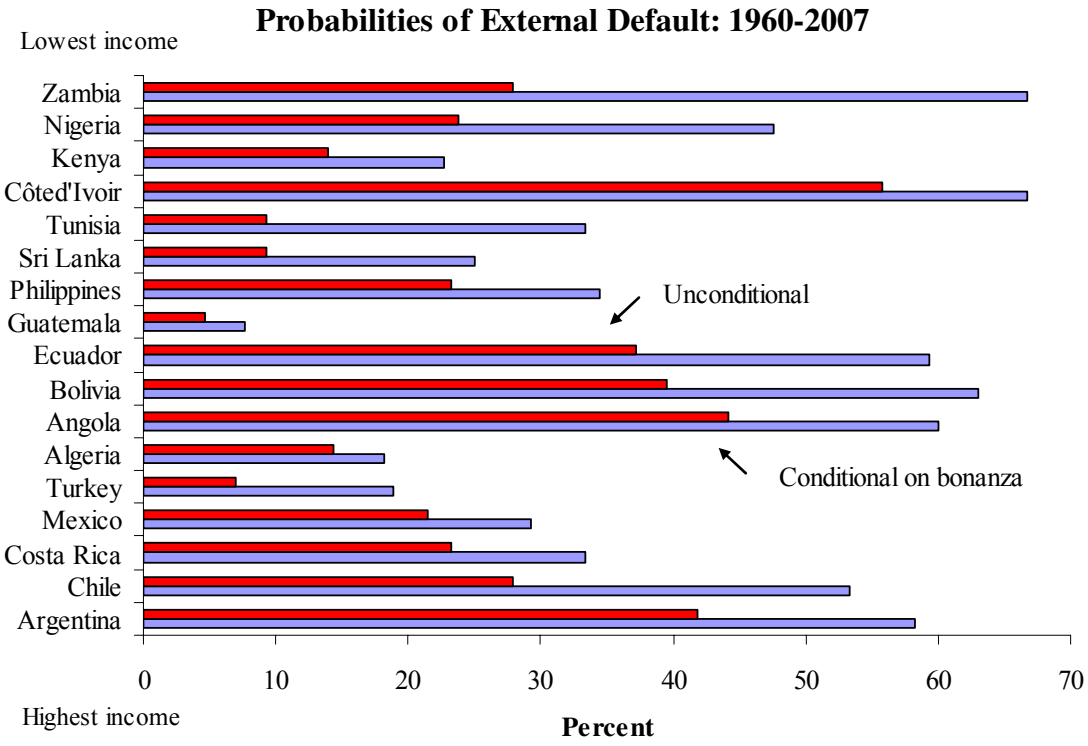
[3] In the paper, we also consider inflation crises; for crisis definitions see Reinhart, Carmen M. and Kenneth S. Rogoff, "This Time is Different: A Panoramic View of Eight Centuries of Financial Crises" NBER Working Paper 13882, March 2008.

two-thirds of the countries the likelihood of a currency crash is significantly higher around capital flow bonanzas in about 61 percent of the countries the probability of a banking crises is higher around capital flow bonanzas.

Beyond these general results, Figures 2 to 4 for debt, currency, and banking crises, respectively, present a comparison of conditional and unconditional probabilities for individual countries, where the differences in crisis probabilities were greatest. (Hence, the country list varies from one figure to the next).

For external sovereign default (Figure2), it is hardly surprising that there are no high income country examples, as advanced economy governments do not default on their sovereign debts during the sample in question. The same cannot be said of Figures 3 and 4. While the advanced economies register much lower (conditional and unconditional) crisis probabilities than their lower income counterparts, the likelihood of crisis is higher around bonanza episodes in several instances. Notably, Finland and Norway record a higher probability of a banking crisis around the capital flow bonanza of the late 1980s. Recalibrating this exercise in light of the banking crises in Iceland, Ireland, UK, Spain and US on the wake of their capital flow bonanza of recent years would, no doubt, add new high income entries to Figure 4, which graphs conditional and unconditional probabilities for banking crises.

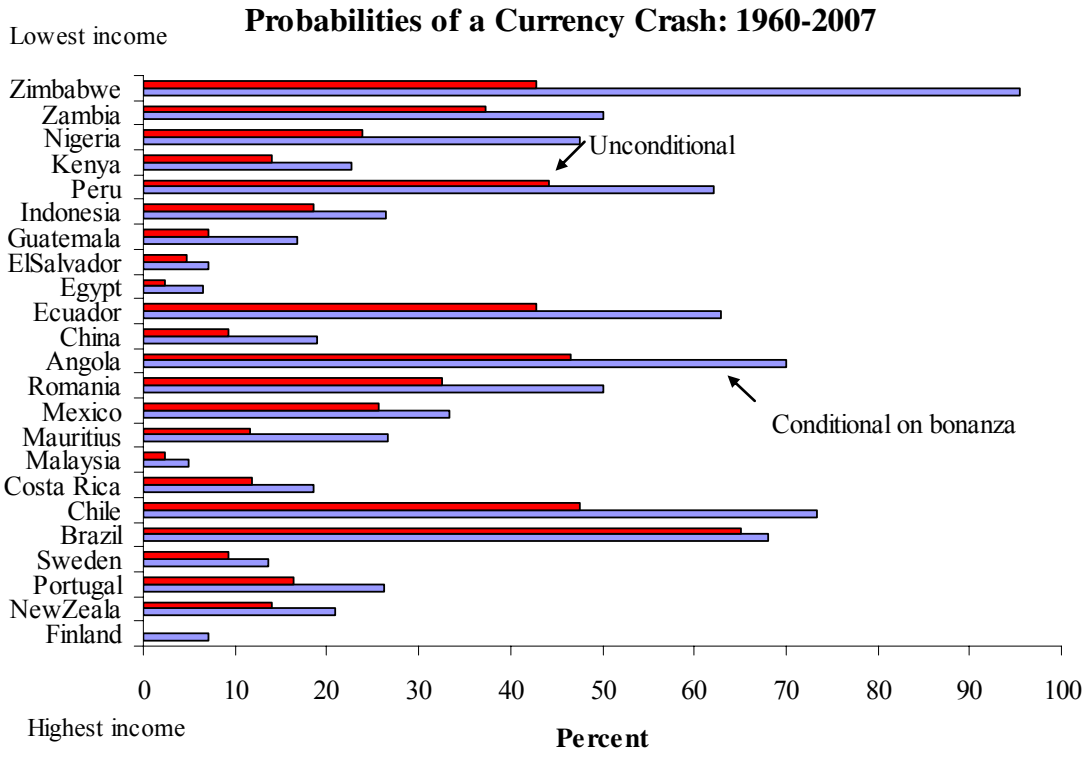
Figure 2. Are bonanza episodes more crisis prone? Sovereign external default: 66 countries, 1960-2007



Sources: Authors' calculations, Reinhart and Rogoff (2008a), and sources cited therein.

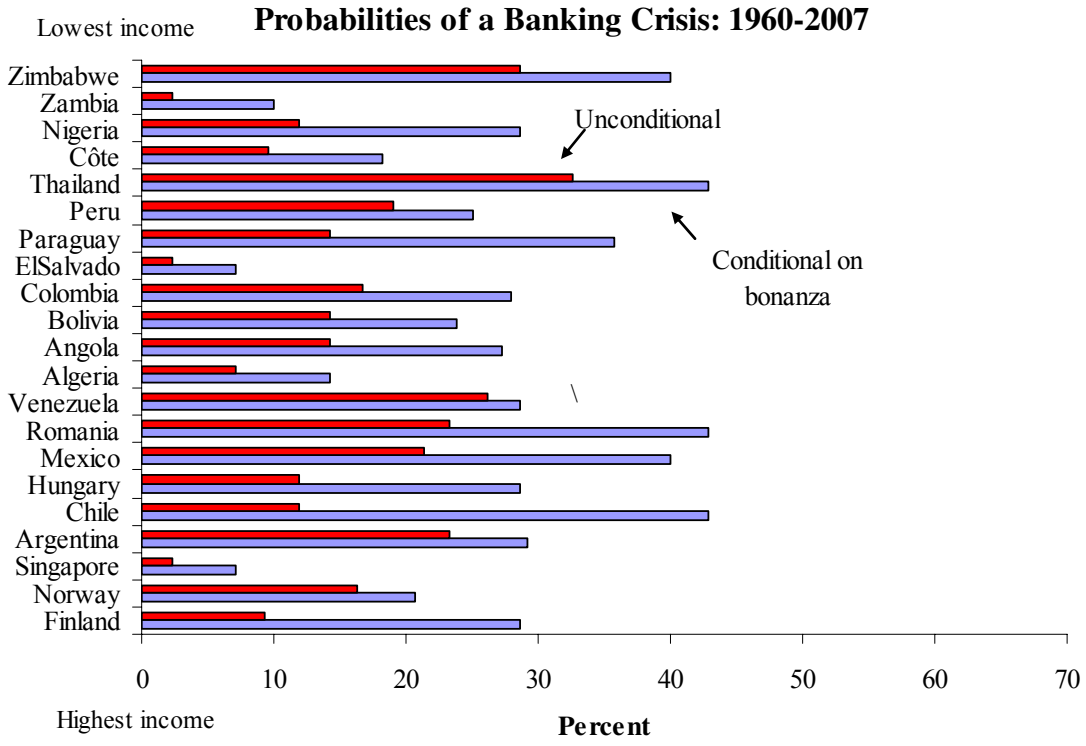
during the vicinity of a capital flow bonanza, while Greece, Italy, and the United Kingdom show a greater predisposition to an inflation crisis when bonanzas are present.

Figure 3. Are bonanza episodes more crisis prone? Currency crashes:
66 countries, 1960-2007



Sources: Authors' calculations, Reinhart and Rogoff (2008a), and sources cited therein.

Figure 4. Are bonanza episodes more crisis prone? Banking crises:
66 countries, 1960-2007



Sources: Authors' calculations, Reinhart and Rogoff (2008a), and sources cited therein.

Reflections on the current conjuncture

Most emerging market economies have thus far been relatively immune to the slowdown in the United States. Many are basking in the economic warmth provided by high commodity prices and low borrowing costs. If the pattern of the past few decades holds true, however, those countries may be facing a darkening future.