

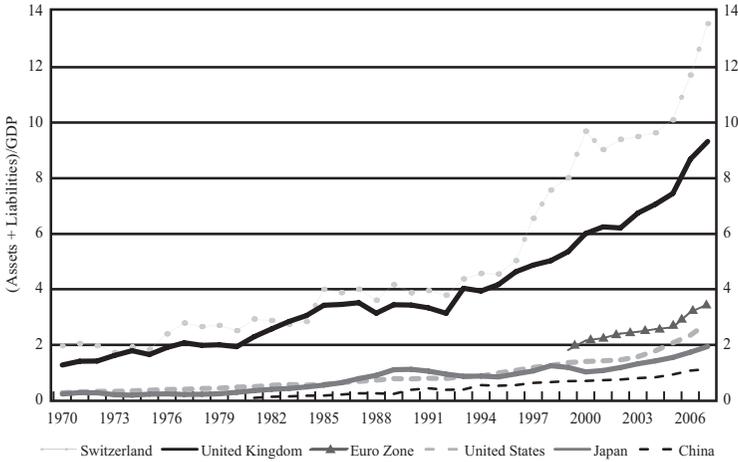
Expanding Gross Asset Positions and the International Monetary System

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A prominent feature of international monetary evolution over the past two decades is that *gross* international asset positions have skyrocketed to unprecedented levels. The phenomenon is most evident for the high-income industrial countries, but even gross private foreign asset positions for emerging countries are on a generally rising trend. The best-known data on the phenomenon are those assembled by Philip Lane and Gian Maria Milesi-Ferretti, illustrated for a few countries in Chart 1. The chart shows the sum of gross foreign assets and liabilities divided by gross domestic product (GDP).

My thesis is that these ballooning gross positions, which of course reflect ballooning gross financial flows, have important implications for the functioning of the international monetary system. Some of these implications became painfully evident in the course of the global financial crises of 2007-10, but it has also become evident that economists' knowledge of the determinants of gross financial flows and their repercussions is exceedingly slim. Relative to output, gross positions appear nonstationary based on the evidence to date, and, most plausibly, this is an artifact of rapid structural change. But we cannot predict with confidence when (or if) a stationary distribution of gross position ratios will emerge. Here is another area where mainstream macroeconomics has abstracted from real-world

Chart 1
Gross External Assets Plus Liabilities, Selected Countries,
1970-2007



phenomena that are of first-order importance for economic stability and welfare.

Falling political and technological barriers to international asset trade are of course consistent with the general trend, but we have few clues to explain asset positions that have quickly grown to multiples of GDP—far beyond what simple homogeneous-agent models of international risk sharing would imply. And there is the suspicion that the proliferation of leverage may reflect economic distortions and/or magnify the impacts of any distortions. Clearly, there are large multipliers at work. But how big are they, what determines their size, how do they differ by currency—and most importantly, what in the heck is being multiplied? The analytics and empirics on the topic are likely to be messy, but there is a dire need for intellectual progress on paradigms that can inform policymakers as they monitor the world economy.

I would like to organize my remarks around three related areas where a consideration of gross asset positions seems critical for the organization of the international monetary system going forward:

1. The significance of the current account balance as conventionally measured.

2. The determination of exchange rates in crisis environments.
3. The need for international lenders of last resort.

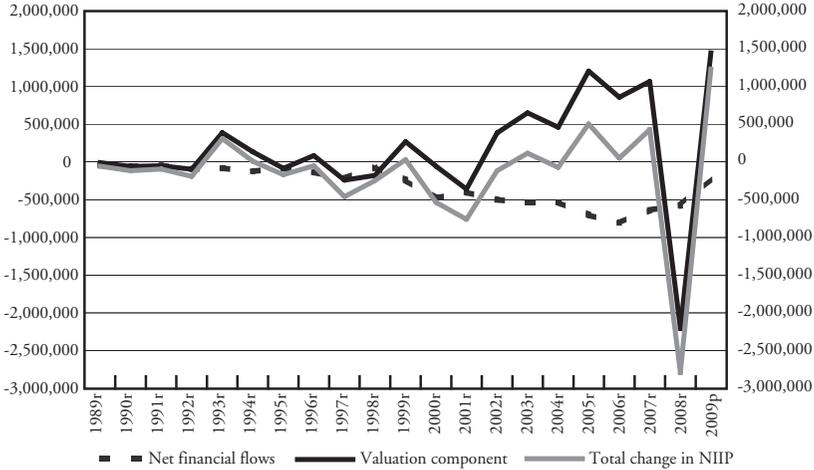
This list does not, of course, exhaust the set of relevant policy problems. For example, the proliferation of gross cross-border flows has obviously complicated the task of prudential financial supervision and vastly raised the premium on an internationally coordinated approach. Given net flows, larger gross flows place greater absorption pressures on potentially fragile financial systems, leading to a greater need for more comprehensive and globally coordinated supervision. In the absence of such coordination, it is hard to see how countries will be able to avoid capital controls as they seek second- or third-best national solutions. Moreover, it is likely that international regulatory arbitrage is a significant contributor to the proliferation of leverage, and hence of gross positions (Acharya and Schnabl, 2009). Despite the urgent importance of the topic, however, time constraints will allow me to touch on global financial regulation only tangentially today.

The Changing Role of the Current Account

Conventional measures of national income omit capital gains and losses on assets such as equities, housing, and foreign currency bonds. Likewise, the current account balance, which measures only the excess of national income over total absorption, leaves out any cross-border changes in capital asset values. Calculations of the net international investment position (NIIP) must somehow correct for these valuation changes, however, to get an accurate quantitative estimate of a country's overall obligations to, or claims on, the rest of the world.

Chart 2 shows the net financial flow balance for the United States (the current account apart from errors and omissions) along with the valuation adjustment calculated by the Bureau of Economic Analysis when direct investments are counted at market value. The visual impression is quite sobering, though the general phenomenon is by no means restricted to the United States. Wide swings in asset valuation—due to exchange rate changes, bond price movements, and equity price movements—dwarf the effect of financial flows. Sometimes, these work in opposition to the current account, even improving the NIIP despite a large current account deficit (e.g., most years

Chart 2
U.S. Balance of Financial Flows and Valuation Change on NIIP
(millions of USD)



between 2003 and 2007). In the crisis year 2008, price changes took \$2.2 trillion off the U.S. NIIP. This is equivalent to more than three TARPs, though somewhat shy of China's total current foreign exchange reserves. Valuation changes added more than \$1.4 trillion to the NIIP in 2009, by which time the U.S. current account deficit had shrunk to only about \$400 billion.

We know very little about why the United States holds the net international portfolio it does—long on equity, short on debt, long on foreign currency, short on dollars. Gourinchas and Rey (2007) have shown that, historically, higher U.S. net exports predict lower returns on the U.S. NIIP, but the structural economic mechanism at work is unclear. Moreover, it is much weaker, if present at all, for industrial countries other than the United States. For emerging markets that borrow primarily in foreign currencies, one can make a theoretical case that *lower* net exports predict lower returns on the NIIP (Obstfeld, 2004). But we are far from having established a reliable structural relation between current account balances and external valuation changes. In Chart 2 for the United States, large valuation swings are evident well before the recent crisis, though the crisis accentuated their magnitude dramatically.

In this world, national solvency may be related only tangentially to the current account flow. Asset price developments can rapidly inflict losses in the NIIP equal to double-digit percentages of GDP. Had we a better understanding of asset price determination, the incentives on the margin for policy distortion would be truly worrisome. Moreover, forecasts of national solvency become problematic. One suspects that most of the losses are borne by those with the financial capacity to bear them, but we don't really know who is exposed, how deep are their pockets, who are their counterparties, etc. Solvency is less of an issue if more liabilities are equity rather than debt—not the U.S. position, as noted earlier.

This is not to say that the current account, or the issue of “global imbalances” in general, is irrelevant. Far from it. When a country such as China runs a surplus, its absorption still falls short of its income, and global equilibrium will require a corresponding excess of absorption over income elsewhere in the world. This could raise problems of global deflation in deficit regions if, as is the case for the United States today, there is pressure for the public sector to reduce its borrowing and the private sector to continue deleveraging.

A country able to have a negative balance on current account still can maintain lower real interest rates with less pressure for currency depreciation, as was arguably the case for the United States during the buildup of its housing bubble in the last decade.

Exchange Rates and Gross International Asset Positions

Gourinchas, Rey, and Govillot (2009) suggest that the United States pays lower returns on external liabilities than it earns on comparable external assets, and that the reason is an expected large transfer to the rest of the world in worldwide crisis situations. In this account, the large negative spike in Chart 2 represents a U.S. insurance payment to foreigners, which the foreigners purchase by effectively lending to the United States at relatively low interest rates in normal times. Thus, the role of the dollar as “safe haven” goes hand in hand with the “exorbitant privilege” of financing foreign deficits cheaply.

The nature and causes of the exorbitant privilege are hotly debated, but the dollar's safe-haven role seems amply borne out in recent years

Chart 3
U.S. Dollar Nominal Effective Exchange Rate



and months. Chart 3 illustrates the dollar's very sharp appreciation after the Lehman Brothers collapse in September 2008, as well as the qualitatively similar dynamics during the initial stage of the euro zone sovereign debt crisis in early 2010. The accompanying fall in U.S. Treasury interest rates accentuates the wealth transfer from the United States to foreigners in these episodes. The unanswered question is: Why is the dollar viewed as a safe haven? That is, why does it strengthen in global crises?

We really don't know. There is a more general tendency for low-interest currencies, such as the yen, to exhibit asymmetric appreciation risk in the context of carry trades, but the roots of that regularity also are mysterious (Brunnermeier et al., 2008). One suggestion concerning the dollar is connected to the liquidity of dollar funding markets and the effect of that on the size of gross dollar positions.

Prior to the outbreak of the subprime crisis, European banks went heavily into U.S. asset-backed securities. Having no retail dollar deposit base, they funded the purchases with short-term dollar borrowing. This funding dried up in the crisis and foreign exchange swap markets also malfunctioned. European banks borrowed euros and sold them for dollars to repay debts, placing upward pressure on the

dollar (McCauley and McGuire, 2009). The Fed introduced its central bank swap lines in December 2007 to counteract such pressures, although their use intensified greatly after the Lehman bankruptcy.

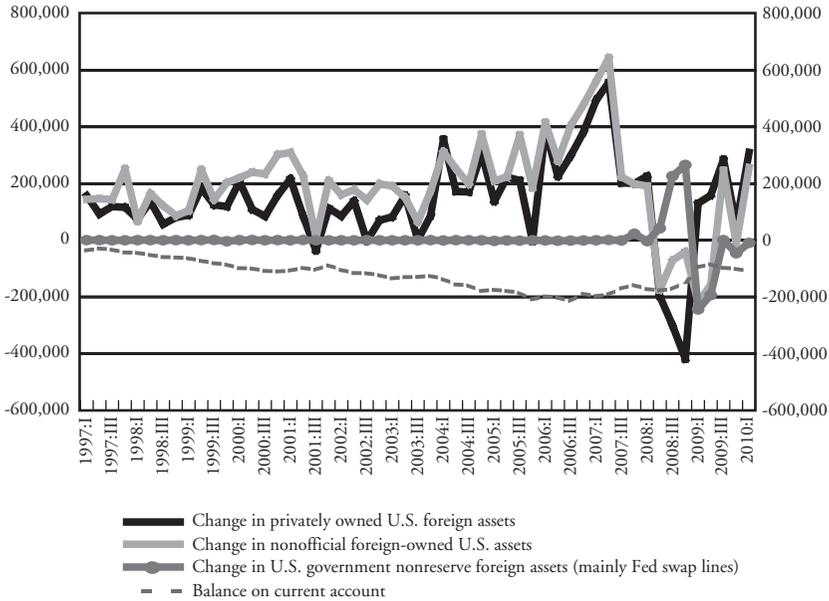
In normal times, dollar markets are characterized by high liquidity and reliability of wholesale short-term funding, so investors have an incentive to take on high leverage so as to earn a carry or exploit regulatory distortions. Thus, high liquidity generates large gross dollar positions. As a result, however, when dollar credit-market conditions tighten in a crisis, there will be a disproportionate demand for dollars to repay short-term debts, and the prices of dollars in other currencies will therefore rise. Whether this mechanism or something related can explain the dollar's behavior in crises is an open question, but I suspect the explanation (or explanations) will revolve around the effects of shifting financial constraints. In the example I have given, changing funding conditions give rise to exchange rate effects in the presence of an initial pure dollar maturity mismatch.

Lenders of Last Resort in a World of Globalized Finance

Chart 4 shows how capital inflows to the United States collapsed in the fall of 2008. Current account financing was provided by the liquidation of foreign claims, part of the general deleveraging process, not by new borrowing.

In the face of global credit market disruptions, the Federal Reserve created dollar swap lines that eventually extended to key emerging markets and allowed some foreign central banks to lend dollars without limit. (See Chart 4.) These programs arguably eased credit market distress and reduced appreciation pressures on the dollar (McGuire and von Peter, 2009; Goldberg, Kennedy, and Miu, 2010). The swap lines, eventually extended to 14 countries, were wound down in February 2010 only to be reactivated in the face of European sovereign debt worries a few months later. Swap lines were extended by central banks other than the Federal Reserve, including the European Central Bank, Swiss National Bank, Bank of Japan, and People's Bank of China. Figure 7 in McGuire and von Peter (2009) is a comprehensive schematic of the remarkable network of swap lines that evolved during the crisis.¹

Chart 4
U.S. Balance of Payments Flows
 (millions of USD at quarterly rate, seasonally adjusted)



The gross asset positions leading to the dollar shortage of 2007-08 illustrate how the traditional model of a purely domestic lender of last resort is ill-equipped to ensure financial stability in a financially interconnected world. In the crisis, the euro system, for example, was in a position easily to provide euro liquidity, but could not itself manufacture the dollar liquidity needed by European institutions that were unable to access Fed lending on their own or through affiliates. The Fed ultimately responded by subcontracting part of its last-resort dollar lending function to foreign central banks.

In a world of integrated financial centers and multiple currencies, the boundaries within which a central bank can function as a last-resort lender no longer correspond to the boundaries within which a liquidity shortage *in its currency* can arise. Furthermore, the globally interdependent nature of modern financial relationships ensures that market turmoil *outside* the central bank's jurisdiction may well migrate *inside*. This is the basic problem. The incomplete coverage of traditional last-resort lending has long been evident in emerging

markets with extensive liability dollarization (Obstfeld, 2004; Rajan and Tokatlidis, 2005), but its recent prominence in advanced-country financial markets is rather new.²

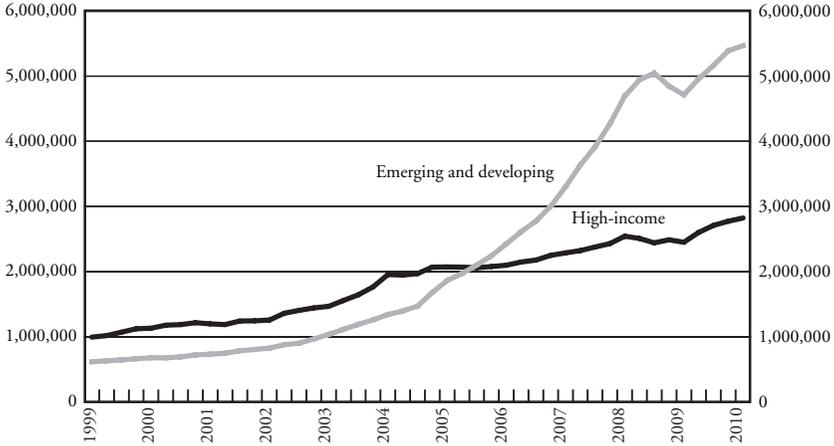
As emerging market economies continue to grow relative to the world economy and some graduate from “original sin,” their currencies will inevitably play a larger role in international finance. China seems to have placed its currency firmly on this path, although full convertibility of the yuan is years away. In future crises, tensions in nondollar funding markets therefore may play a larger role than they did in 2007-09, increasing the need for official liquidity support in those currencies.

Aside from *ad hoc* arrangements such as the swap lines, what arrangements could ensure the availability of liquidity in different currencies during crises? In recent years, countries, especially outside the high-income grouping, have accumulated large foreign exchange reserves that can be drawn on in crises. Chart 5 shows that emerging and developing countries (as a group) drew down their reserves slightly in the crisis, but have apparently started to return toward their previous accumulation path.

Self-insurance through the hoarding of liquid reserves has a number of disadvantages, however, including:

1. Large reserve holdings can be costly.
2. Related to the last, costs of sterilization may be significant.
3. Some of the contribution of higher reserves to financial stability may be illusory. It may well be that the very event that swells reserves raises, in equal measure, the fragility of the financial system.³ In general, it may be far from straightforward for markets to assess the adequacy of a reserve war chest relative to the economy’s financial vulnerability.
4. Official asset flows may have interest-rate effects, while shifts between currencies or other assets can have price effects. Witness the market-moving power of recent Chinese signals concerning European sovereign debt, or the alleged effects on the Japanese yen’s exchange rate of alleged Chinese reserve investments in

Chart 5
Reserve Holdings
(millions of USD)



Sources: IMF COFER database

yen. For the reasons set out above, we can expect increasing reserve diversification by currency in the future.

5. Related to the preceding price effects, reserve accumulations that are the counterpart of policy-induced current account surpluses are deflationary at the global level and force other countries to run possibly unwelcome deficits.
6. In a crisis, rapid reserve withdrawals may have adverse effects in other markets—reserves are not *outside* liquidity.
7. Governments may be reluctant to use reserves in crises, precisely because high reserves reassure investors (Aizenman and Sun, 2010). Thus, even a country with high reserves, such as Korea, drew on its Fed swap line during the crisis, allowing its reserves to decline only by a relatively small percentage (while the won plummeted by some 60 percent against the dollar). In a global or even regional crisis situation, with investors liquidating assets in those countries that seem to have the weakest fundamentals, an individual country has a clear incentive to hoard reserves so as to appear stronger than its neighbors.⁴

Points 4 through 7 above reflect a *systemic* appraisal of financial stability. Measures such as reserve accumulation and uses that enhance

the stability of an individual country may simultaneously inflict negative externalities on other countries within the financial system.

Given the shortcomings of self-insurance through reserves, some regularized system of credit lines in different national currencies would be much more efficient, and it would be natural to embody it in an international lender of last resort, as argued by Fischer (1999), Goodhart (1999), Calvo (2009), myself (Obstfeld, 2009), and others. The natural candidate to fulfill this role is the International Monetary Fund (IMF), which has the limited capacity to create outside money in many currencies, and presumably has some degree of fiscal backing from member countries should its capital ever be impaired. But IMF resources, even as augmented recently as a result of the global crisis, are clearly inadequate for the challenges posed by the rapid growth of gross positions in international financial markets.

Is there an alternative to a supranational organization such as the IMF? In a prescient comment written more than a decade ago, Goodhart (1999) made this prediction:

If the IMF were abolished, or so circumscribed in its resources and functions that it could not play an effective [Lender of last resort] role, the alternative would not be the restoration of a perfectly free market, in which each country stood, or fell, on the basis of its own individual successes. There would, instead, develop an *ad hoc* system of regional (self-help) systems centered on a major currency, and a major power... . Proponents of pure international *laissez-faire* should be aware that the political realities suggest that the result of curtailing the IMF would be a descent into a murkier world of regional major-power groupings, and not a system of pure free markets.

Both the policy response to the 2007-09 crisis and the recent events in the euro zone attest to the accuracy of Goodhart's prediction (as did the earlier Chiang Mai initiative). European Union governments have, however, found it useful to bring in the IMF and its checkbook in addition to creating their own bailout fund, in part because the Fund can more credibly apply pressure to governments, the more so if it has its own money on the line. Thus, regional pooling

arrangements or swap lines do not obviate the IMF's financial support role. But regional arrangements have drawbacks of their own. For one thing, regional swap systems inevitably will be driven by regional banking exposures, and that will create further incentives for regional bias in financial flows. For another, regional arrangements that result in multiple LLRs (lenders of last resort) for some borrowers may allow them to evade conditionality of LLR assistance. The supervisor/regulator role and the LLR role are inextricably related, not only for informational reasons, but because the LLR is often in a position to demand corrective or preventative measures.

The Fund's flexible credit lines have been one response to the crisis, but have generated a very limited response among member governments. The shortcomings of these and similar earlier schemes are well known. Unlike the classic LLR, the Fund lends to governments, not directly to financial institutions or into the market. It would make sense for the Fund to evolve complementary, pre-approved credit lines directly to central banks, facilities that can become active without case-by-case Fund/government *ex ante* negotiations. (The General Arrangements to Borrow of 1962 had this flavor, but it was intended for balance of payments support, not for large-scale support of financial systems in crisis.)

Coupled with wider statutory central bank independence and, indispensably, member-country subscription to a global financial supervision standard, such a system might mimic the helpful features of the recent *ad hoc* responses to crisis based on credit extension by key central banks. But the safety net's availability would be predictable. As Guttentag and Herring (1983) argued long ago, the worst of all worlds may be one in which LLR support is expected—which surely it now is—but for some reason is unavailable *ex post*.

In such a system, the IMF would not need to monitor individual financial institutions in a comprehensive way, but it (or some other supranational body) would need to monitor the national monitors. It goes without saying that countries outside the high-income group are going to be key players in light of their increasing presence in international trade and financial markets, so the governance of the IMF needs to be revamped to reflect this reality. In addition, the

fiscal backup of the Fund needs to be clarified as its resources are enhanced. The full fiscal capacity of some smaller countries is no longer nearly sufficient to support the balance sheets of the financial institutions headquartered there.

These are ambitious goals, to be sure. But the crises of recent years have illustrated how far financial markets have expanded beyond the limits of global governance, to the detriment of financial stability. Global economic integration will falter absent a supportive global institutional framework, and in that case we can expect an upswing in nationalistic measures of financial and trade protection.

Endnotes

¹The Committee on the Global Financial System of the Bank for International Settlements, chaired by Don Kohn, has carried out several valuable *ex post* studies of cross-border funding stresses, for example, Bank for International Settlements (2010).

²Indeed, a very large number of emerging market economies carried out liquidity operations using foreign exchange reserves during the crisis. See Ishi, Stone, and Yehoue (2009).

³Think of a domestic bank that attracts a short-term foreign currency deposit from abroad and trades the foreign currency proceeds for domestic currency at the central bank's pegged exchange rate. The central bank's reserves are higher, but so is the currency/maturity mismatch of the domestic banking system. In effect, the increase in official reserves is exactly offset by an increased *need* for those reserves. The basic point is that the means through which reserves are acquired does make a difference when we assess their contribution to financial stability. A corollary is that it may be hard to predict the potential short-term demands on reserves in a crisis, as recent experience has shown.

⁴Korea had a high level of short-term gross foreign currency debt in the fall of 2008, and it was quite unclear to what extent the issuers of the debt held any corresponding foreign currency assets. As a result, the government felt impelled to retain substantial reserves as a guarantee of short-term foreign loans. In addition, the level of dollar swap commitments by domestic entities was uncertain. Baba and Shim (2010) suggest that this made Bank of Korea interventions with reserves less effective than interventions with funds obtained through the Fed's \$30 billion swap line.

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