



# **Workshop on Debt, Finance and Emerging Issues in Financial Integration**

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**Sizing official reserves amid the equitisation  
of cross-border capital flows.  
A case study of India.**

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Not for wide circulation.

Comments welcome

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**Summary**

Official reserves in many emerging economies have risen strongly over the past 10 years and are close to [US\$3trn]. The focus is often on China but reserve accumulation has been widespread and not limited to countries with current account surpluses and fixed-exchange rates. India has neither, yet its reserves have grown eight-fold in just ten years. The prevailing view is that reserve growth has been excessive and that that a significant proportion of reserves can be invested with investment objectives that are more longer-term than traditional reserve management with its emphasis on liquidity insurance. This view is the basis for the development of a handful of new Sovereign Wealth Funds. It is sometimes also argued that excess reserves can be put to developmental use at home. Before alternative uses for reserves can be contemplated, it is important that we have a clear assessment as to whether reserve levels are excessive and by how much. An assessment of reserve adequacy that incorporates recent financial development and innovation sends a less confident signal about the availability of excess reserves.

Few would deny that the rise in official reserves over the past ten years has been rapid, but few would also deny that emerging market reserves were coming off a low base in 1997-98 measuring reserves in nominal, dollar terms, is not the best measure of reserve adequacy. The confidence of those who label reserves as excessive is striking to me, given the failure of emerging market countries to stand against the tide of capital flows in the emerging market crises on the 1980s and 1990s when financial markets and economies were less globalised than they are today. Relative to imports, for example, India's reserves have grown two-fold not eight fold. Strikingly, reserves as a percent of imports have *fallen* since 2004, while in nominal terms they have doubled.

The largest reversal of capital during the Asian financial crisis was the sudden stop in the flow of short-term loans. Since then reserves have often been measured against estimates of short-term external liabilities. On this increasingly popular measure India's reserves have risen at half the pace of the nominal growth of the headline dollar figure. However, even this measure overstates the picture. The Asian financial crisis was such a disaster for short-term external borrowing that the crisis led to a change in cross-border capital flows. Short-term external debt has been replaced by cross-border equity flows. Portfolio equity flows, like FDI are often classified as long-term capital flows, but financial innovation and liberalization has undermined this distinction. Investors can borrow against illiquid, long-term liabilities and create liquid short-term counterparts. Investors can respond to bad news by selling equity investments within a day. Although the outflow of equity capital has very different implications than an unwillingness of a bank to roll over short-term debt, the effects on the price and availability of collateral and credit in the domestic economy can be similar.

One measure of excess there is a level of reserves that can cover six months of imports plus the historic value of external financial liabilities. On this measure Indian reserves remain shy of 50%. When current market prices are considered, reserves levels fall to [37%] of an excess level and the incline toward this level is modest. In the context of capital liberalization and financial innovation, the degree to which reserves are “excessive” is less than is commonly appreciated in some countries, notably India. The wider implication is that reserves still need to be invested in assets that will not come under pressure when reserves are needed and can be used as collateral for liquidity if required.

### **Reserves and Exchange Rate Arrangements**

The tone of the debate on official reserves is such that it is worth remembering that there are a number of legitimate reasons why a country may pursue a fixed or managed exchange rate. In 1999, a number of European economies adopted irrevocably fixed-exchange rates and a single currency – the euro. While the arrival of the euro has not turned out as rosy as the optimists wished, which might be expected from a group where not all the members satisfied the conditions for belonging to an optimal currency area<sup>1</sup>, the convictions of the pessimists proved overly pessimistic. Ten years on there is little call amongst policy makers for the abandonment of the euro. Italy and Belgium have not been forced out of the union, a common monetary policy has not been hugely destabilizing, A number of countries have subsequently joined the area and monetary union has not morphed into political union.

Beyond the theoretical considerations of the optimum currency literature<sup>2</sup>, I have observed from many year’s forecasting currency markets, that open, emerging economies, are well served by freely floating exchange rates. Economic development becomes too vulnerable to external shocks outside the control of policy makers. The currency becomes the fixation either of politicians or of the best economists, when the attention of both would be put to better use trying to improve the real side of the economy. (It is encouraging that following the arrival of the euro, the focus of the policy debate has shifted away from the current nominal value of exchange rates to factors that better determine long-term competitiveness such as education, technology and the role of the state.) Commodity exporters have added difficulties as the currency is the key carrier of the Dutch disease<sup>3</sup>. There is a strong positive relationship between the degree to which a currency is managed and the size of exports and imports as a percent of GDP. I call this the second law of foreign exchange<sup>4</sup>. On balance, commentators should be less surprised to see smallish, open economies managing their currencies than they are.

Once a country has adopted a managed or fixed exchange rate, it has a commitment to intervene in the markets, either by adjusting interest rates or intervening directly into the market using foreign exchange reserves. These reserves are held as insurance against a crisis. The size of reserves relates to the amount of reserves required to preserve a fixed-exchange rate parity and pay for essential imports if exports fail, capital inflows dry up, capital flees and market expectations make monetary policy ineffective.

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Under effective capital controls the equation boils down to covering some level of imports in a crisis. The number of months depends on how long it would reasonably take before the crisis environment abates and the country can pay for its imports through borrowing, a rise in exports or macro-economic adjustment led to import substitution or reduction. Traditionally three months has been considered on the short side and six months on the long side. It is noteworthy that the 1997-98 Asian financial crisis lasted for almost 18 months<sup>5</sup> and the current Sub-Prime crisis, in which capital markets have been effectively closed, has already lasted nine months with little sign of an end as yet.

While Indian official reserves have risen eight-fold since 1997, official reserves as a ratio of imports (six months of imports) has only risen two-fold. This is an important indication that while reserve growth has been large, so has the integration of emerging economies with the global trading system. Reserves were almost three-times six months import cover in 2004, before slipping back. The pace of growth appears more moderate on this measure and the trends are less clear, however, reserve levels are still twice six months cover which is high historically, but recent trends do not suggest copious quantities of excess.

Table 1: Official Reserves and Trade

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
FX Reserves \$bn	26.0	29.5	35.1	39.6	51.0	71.9	107.4	135.6	145.1	191.9
Ratio to 6mth of imports	1.25	1.39	1.41	1.57	1.99	2.34	2.75	2.56	1.85	2.01

### **Capital liberalization and “Hot Money”**

If identifying the required months of import appears a little ad hoc, it becomes much more difficult in a liberal capital regime. Indeed, it has been argued that maintaining a fixed-exchange rate regime with free capital flows and independent monetary policy represents an impossible “holy trinity”<sup>6</sup>. This pessimistic view relates to the enormous reserves that would be necessary to defend a parity if there was free capital mobility, or a move to such mobility and subsequently, foreigners and locals alike were trying to sell local currency assets for foreign assets in a rush.

Notwithstanding the substantial rise in reserves over the past ten years, I still find it puzzling that the idea of the impossibility of the “holy trinity”, reinforced by the failure of central banks to defend parities during the Asian crisis, should have given way to the idea that we have excess reserves.

In part this is because, as always, we fight the last war and not the next one. During the Asian Crisis the biggest reversal of capital flows in the crisis countries<sup>7</sup> occurred in banking flows as banks stopped rolling-over of short-term external loans (mainly denominated in US

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<sup>5</sup> The Asian Financial Crisis is commonly thought to have started with the collapse of the Thai Baht on July 7<sup>th</sup> 1997 and ended with the abandonment by the Brazilian authorities of the real “crawling” peg on January 19, 1999 some 560 days.

<sup>6</sup>

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dollars). This was most dramatic in the case of Korea. Other flows, notably portfolio equity, portfolio debt and FDI were in large part, small and appeared less volatile in flow terms if not in price terms. The pressure on the exchange rate at least was a consequence of a drying up of foreign loans. Consequently, since the Asian financial crisis, analysts have tended to measure reserves as a ratio of short-term external debt liabilities and to consider this a reasonable measure of a defense against “hot money”.

Defining long-term and short-term money is not straight forward. For the moment, and somewhat unsatisfactorily, we will define short-term flows as anything that is not defined as long-term. For the purpose of some description we have taken all external liabilities in the case of India and removed FDI and portfolio equity and debt flows. What remains is primarily bank and trade credit. Reserves measured as a ratio of six months import cover, plus short-term external liabilities (defined generously as anything that is not considered long-term) also rose strongly over the past ten years, but at half the pace of reserves in nominal terms and the ratio in India, at 0.76, (see table 2) remains below 1.

Table 2: Official Reserves, Imports and Non-Long-Term External Liabilities and Trade

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
0.20	0.24	0.27	0.30	0.35	0.45	0.57	0.75	0.77	0.69	0.76

### **Cold money redefined**

After the Asian crisis, short-term external debt was considered a dangerous form of financing by everyone, from local and international policy makers to the bankers themselves. Consequently, as a source of financing, short-term external borrowing dried up. Within a few years they were replaced by increasing FDI and portfolio equity flows. Measures of reserves that included short-term financing and left out FDI and equity flows also show robust growth as table 2 indicates, but is it relevant to leave out the new forms of finance. In their previous, moderate form, they proved more stable than short-term external debt, but is that characterization still appropriate ten years on given financial innovation on one side and the different role they now play on the other. Table 3, which breaks down the sources of accretion to India’s foreign exchange reserves illustrates the new role of equity flows.

Table 3: Sources of accretion to foreign exchange reserves, April-Dec, 2007 (\$bn)

Current account balance	<b>-16.0</b>
Capital account balance (net)	<b>+83.2</b>
Foreign Investment	+41.4
FDI	+8.4
Portfolio	+33.0
Banking capital	+5.8

Short term credit	+10.8
Commercial borrowing	+16.3
Other	+8.9
Valuation change	<b>+8.9</b>
Total	+76.1

Are portfolio equity flows “cold” money? There are clear differences between a local corporate raising money through an external loan or through foreign equity capital. If a local company raises investment capital by taking out a foreign loan to be rolled over every three, six, or twelve months say, and an external crisis hits and the loans are not rolled over, the company is plunged into a liquidity problem and it may be forced to sell down its assets at a bad time. This kind of problem is commonplace in today’s credit crunch. If on the other hand the company raises the same investment capital by issuing shares and these are purchased by foreign investors and if after some shock the foreign investors want to sell the shares and the share prices fall, the company has not lost any capital. If it does not need to raise fresh capital quickly and if it has not used its equity capital in some way as collateral for loans, then the company is not facing a liquidity crisis.

Arguably the problem for the company with the foreign loan is not that it is foreign, but that there is a maturity mis-match between its assets and liabilities. The problem for the exchange rate authorities is unrelated to whether it is debt or equity but that capital is exiting (debt is being repaid or equity sold). If capital inflows were financing a current account deficit or a more longer-term capital outflow, then the drying up or reversing of a capital inflow is a problem for the exchange authorities (and it can become a problem for the corporate sector if a subsequent devaluation raises the local value of more longer-term debt liabilities.)

The issue for the exchange rate authorities then is whether the inflow of equity capital, that in India’s case is financing a current account deficit as well as a build up of reserves, can leave as quickly as it arrived. Equity prices are visible and volatile. Equity prices are as volatile as currency and commodity prices and they are more volatile than securitized corporate debt prices which are more volatile than government securities<sup>8</sup>. But flow volatility does not necessarily follow price volatility and flows are less visible and when they are, they tend to be so and low frequencies such as half yearly or annually. Evidence of flow volatility using custodial data, suggests that flow volatility is less than price volatility and that it is less than for corporate bonds<sup>9</sup>. However, this data does not stretch back to enough financial crises and include enough emerging market economies for us to examine the dynamic during a crisis.

Our supposition however should be that these flows can reverse at a pace and timing that would be problematic for the authorities if not at the same pace and timing of short-term external debt. Two common observations in finance suggest this. First, flows follow fashions and fashions follow price performance. Second, there are two types of investors in emerging markets: “cross-over” investors who have crossed over into the market segment but their core is global or developed country funds and dedicated emerging market funds. In a crisis the cross-over

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<sup>9</sup> See “Of virtues and villains – reordering the hierarchy of capital flows to emerging countries, by A. Persaud, State Street Bank and Trust, October 2001.

investors flee first because they are only there for the extra returns which appear to have disappeared and they do not wish to be caught too exposed to a market that is exotic to their core. The dedicated funds are set up to invest in these markets and they are not paid for long-periods of cash, so they tend to be more engaged, looking for micro-sectors of outperformance rather than wholesale abandonment. That said, the amount of new money set aside for these dedicated funds will fall off. So there are likely long run and short run flow impacts of a crisis. This analysis is consistent with the recent flow patterns but the likely fall-off of flows is hard to estimate looking at equity capital flows in aggregate over a period in which cross-over and dedicated funds have devoted an increasing amounts of capital to emerging markets.

A secondary issue is one of valuation. This is not an issue when considering debt flows. The value of a un-repaid loan in the currency it is denominated in, is fixed, in general. The value of an equity holding is not. Traditionally the stock of portfolio and FDI equity is valued using historic prices. In India for example, where the stock market has risen four fold over ten years, this will lead to a undervaluation of the value of overseas holdings of Indian equities. It is not clear that the reserve manager needs to be able to accommodate a wholesale withdrawal of overseas equity capital at current equity prices. But it is perhaps not best to only accommodate a withdrawal on the basis that equity prices fall back to where they were ten years ago. An average may make better sense.

The ratio of FX reserves to six months of imports plus external liabilities, using smoothed market prices, but excluding FDI, is today below 0.50, having been closer to 0.20 ten years ago. This is undoubtedly a far healthier state of affairs and builds in some room, but whether it represents excess reserves is far from clear.

[This discussion is to be followed in more detail. There will be an additional discussion of whether FDI is cold or hot. The framework is to be extended to other countries].