Where Are India's International Reserves Invested?

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Most standard indicators suggest that India's reserve stock is more than adequate. The rapid stockpiling of foreign exchange reserves implies that the RBI has been leaning-against-the-wind to keep down the value of the Indian Rupee. As India has become more export-oriented it has become keenly aware of the need to remain price competitive in the short run, This situation dictates that there may be potential benefits from pursuing a more coordinated approach to dealing with monetary and exchange rate policies in the region. [This is an abbreviated version of a working paper by the authors (see Rajan and Gopalan, 2010).]

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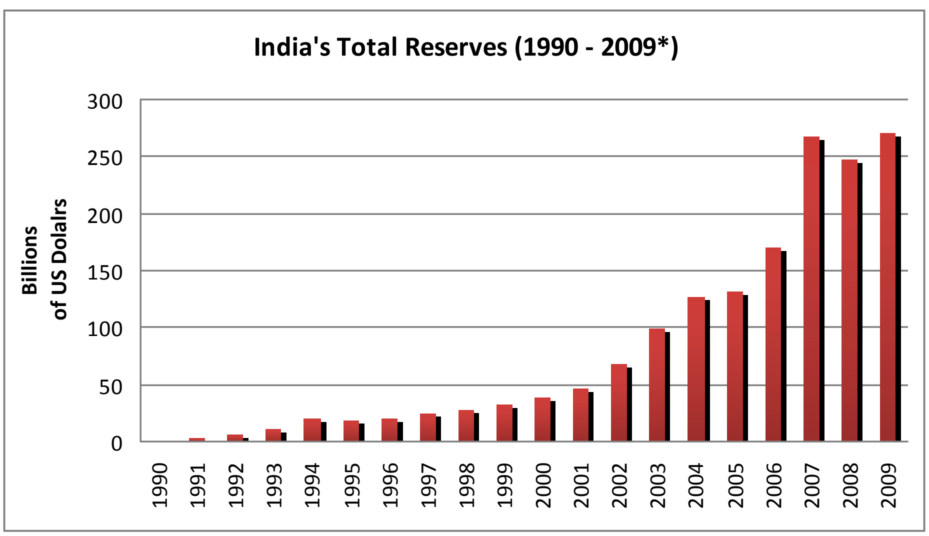
I
Trends in India's International Reserves

India's international reserve buildup has been impressive (Figure 1), rising from around US$ 5-6 million in 1991 to over US$ 155 billion by mid 2006 and touching US$ 300 billion by mid 2008 -- among the highest in the world after China and Japan. India's reserves took a dip in mid 2008 following the capital flows reversals induced by the global financial crisis as the RBI attempted a partial defense of the Indian rupee to moderate the pace of depreciation.

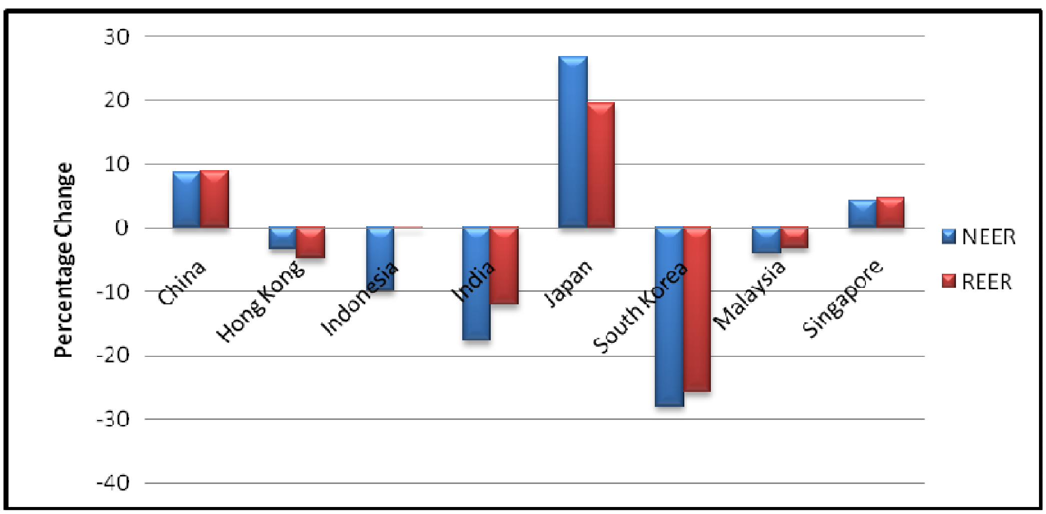
Figure 1: Trends in India's Total International Reserves (1990-2009*)



Note: * September 2009
Source: Compiled from CEIC data.

The same story unfolded for other emerging Asian economies as well, as a sharp turnaround in capital flows during the global financial crisis led to exchange rate depreciations of various magnitudes, which would have been even larger if not for some degree of foreign exchange intervention. While exchange rate depreciations were most apparent in countries with current account deficits, namely South Korea and Indonesia apart from India, even those with current account surpluses such as Singapore and Malaysia experienced exchange rate pressures as apparent from drops in their reserves [Rajan and Gopalan, 2009]. Interestingly, China and Hong Kong were exceptions to this trend, both economies continuing to accumulate reserves even during the heights of financial crisis. Once the crisis abated, however, foreign capital started returning to emerging Asia, particularly to India following the overwhelming mandate given to the Congress-led government in May 2009(See http://www.bloomberg.com/apps/news?pid=20601091&sid=aB2VlzAXi.S4 for more details). Consequently, India once again started to rebuild its foreign exchange reserves aggressively, reaching over US$ 270 billion by September 2009 (Figures 2 and 3).

Figure 2: Nominal and Real Effective Exchange Rate Changes in Selected Emerging Asian Economies, 2007-09

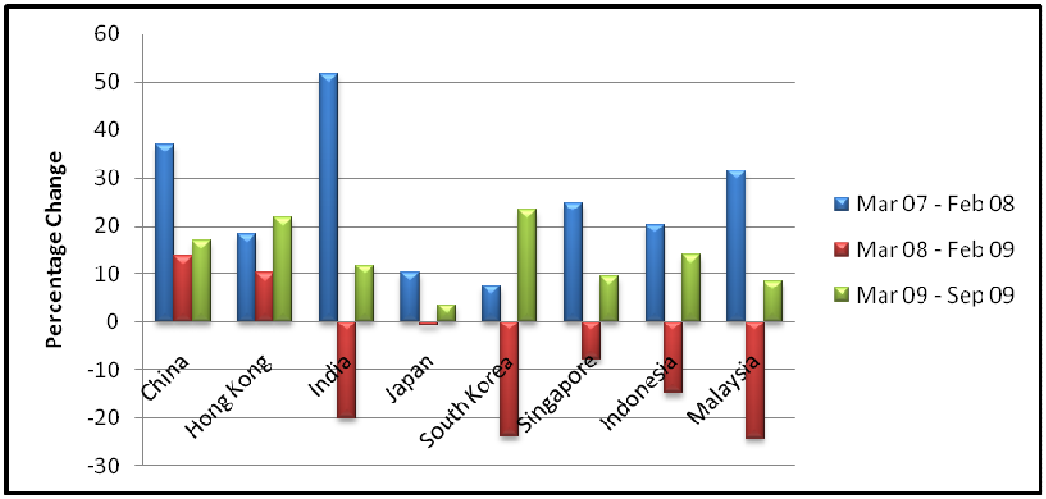


(Percentage; between August 2007 and September 2009)

Note: A negative (positive) change implies depreciation (appreciation); The effective exchange rate is the weighted average of 58 trading partners reported by the BIS.

Source: BIS

Figure 3: Change in International Reserves of Selected Emerging Asian Economies, 2007-09
(Percentage)



Source: Author's computations from CEIC database.

How adequate are these reserves? The issue of reserve adequacy was made apparent during the 1990s and early 2000 when rapid reserve depletion became a defining and determining feature of the series of currency crises that hit emerging economies [Bussiere and Mulder, 1999 and ul Haque, Kumar and Mathieson, 1996]. There are several broad measures of reserve adequacy that are used in literature, which despite any theoretical backing, are useful broad benchmarks of a country's ability to manage a balance of payments shock. If one were to assess the adequacy of India's stock of international reserves by considering a few such standard measures -- such as the ratio of reserves-to-GDP, reserves-to-imports, reserves-to-short-term external debt and reserves-to-broad money (M2) -- India's reserve stock is more than adequate [Rajan and Gopalan, 2010]. Though India's reserve position is somewhat less comfortable if one also includes the stock of portfolio inflows as opposed to only short-term external debt liabilities, it still appears to be in a much better position than many other emerging economies [Rajan and Gopalan, 2010].

II

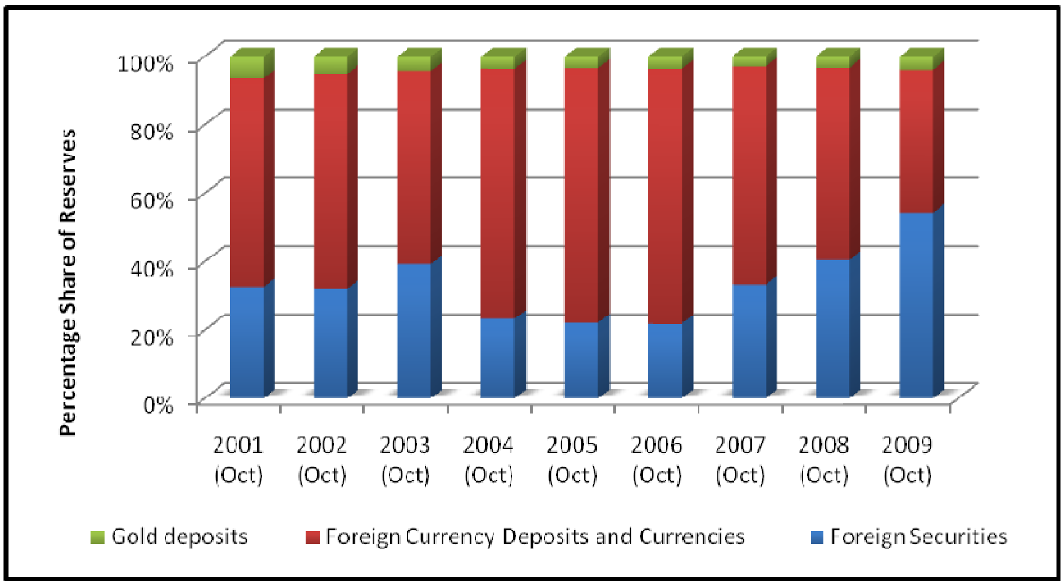
Composition of India's Reserves

Given India's large reserve levels, this section explores the form these reserves have taken (asset and currency composition).

Asset Composition

At a broad level, India's reserve assets comprise foreign securities, foreign currency deposits and currencies and gold deposits.[i] While foreign securities primarily refer to bonds issued by foreign investors, foreign currency deposits and currencies largely consist of total currency and deposits with other national central banks, Bank for International Settlements (BIS), and the International Monetary Fund (IMF).[ii] The remainder of the reserves is invested in gold.[BIS Statistics, available at http://www.bis.org/statistics/index.htm].

Figure 4: India's International Reserves: Where are they Invested?



Source: Compiled from the Reserve Bank of India.

Available data from the RBI on India's holdings of total reserves since 2001 offers some useful insights into reserve management in India (Figure 4). On average, nearly 60 per cent of India's total reserve holdings have been in the form of foreign currencies and deposits as cash, followed by investments in foreign securities (around 30 per cent), then gold deposits (around 5 per cent), and the remainder in SDRs, in that order. The large share in cash and deposits emphasises the high degree of risk aversion by the RBI in the management of the reserves -- liquidity management is the paramount objective regardless of the opportunity and other costs involved in such a strategy.[iii] It is interesting to note that the RBI allowed its share of reserves held in foreign securities to increase vis-à-vis currency deposits only after 2007 October (i.e. at the height of global liquidity-induced bull-run just prior to the onset of the global financial crisis). The share of reserves parked in foreign securities stood at over 50 per cent in October 2009 compared to around 33 per cent in October 2007.

The share of India's reserves invested in gold has also not been very significant compared to foreign securities or foreign currency deposits and has actually declined from about 6.5 per cent in 2001 to about 3 per cent in 2007. In October 2009 India's reserve gold share stood at around 4 per cent of total reserves compared with 2 per cent for other emerging economies and close to 1 per cent for countries like China.[iv] More recently, though, India's share of gold deposits has seen a significant increase after the RBI purchased 200 metric tons of gold worth from the IMF in October 2009. According to latest available data available for November 2009, the purchase of gold -- estimated roughly at US$ 6.7 billion -- took the existing stock of India's gold reserves to US$ 18.1 billion. This purchase pushed the total share of gold deposits in India's total reserves to nearly 6.4 per cent, back to the 2001 level. It is unclear whether this is a one-off stock adjustment or part of an ongoing strategy of diversifying into gold and raising the share of that commodity in India's reserves.

Currency Composition

While we have some understanding of the asset composition of India's reserves, what about the currency composition? Unfortunately things become much hazier here. As with most central banks, the currency composition of India's international reserves is a closely-guarded secret and India is no exception. The only available source of information on currency composition is the IMF database on the "Currency Composition of Official Foreign Exchange Reserves" or COFER. The problem with the COFER data, however, is that the classification of countries is lumped together into advanced economies or emerging and developing economies, instead of individual countries.

The available data suggests the share of US dollar assets held by emerging and developing economies was close to 60 per cent as of end 2008.[v] But there is some anecdotal evidence to suggest that India has somewhat less of its reserves invested in US dollar assets than China and its East Asian neighbours, and this makes sense in view of India's relatively more diversified trade structure. While there is nothing concrete that anyone can point to substantiate this claim, unlike most other central banks (at least in emerging Asian economies), the RBI publishes data on valuation changes from their reserve holdings. One could try and undertake some simulation exercises to arrive at some reasonable guesstimates of the currency composition of India's non-gold reserves.

The first step is to take India as the average representation of the foreign exchange holdings by all the emerging and developing economies reported in the COFER data. Since there is no prior knowledge about the exact percentage allocation of India's holdings of reserves in US dollars, one could begin the simulation exercise by assuming that it has 50 per cent of its holdings in US dollars and the rest divided in some proportion among other major currencies such as the Euro and the Pound Sterling, say for example 30 per cent in Euros and 20 per cent in Pound Sterling. This is broadly consistent with the COFER data as of end 2008. Using this composition as a starting point we can estimate the valuation gains/losses based on the actual exchange rate change of the non-US dollar part of the reserves and compare it to actual data on valuation changes. If one finds both the estimated values to be close to each other, it is fair to say that the weights initially assigned to different currencies are approximately correct. If, however, there is a large discrepancy between the estimated and actual valuations, one then needs to re-adjust the weights and re-estimate. Such an exercise, while by no means precise, does provide a reasonably indication of the relative weights attached to different currencies in India's total international reserves. It is worth noting that the simulations were carried out by comparing the valuation changes for multiple years thus making the results reasonably robust.

On undertaking such an exercise, the best guess that emerges out of this exercise is that India likely invests 40 per cent of its reserve holdings in US Dollars, 25 in Euros, and the remainder in various convertible currencies including the Pound Sterling, Swiss francs, Australian dollar, Japanese yen, etc. Given that the US dollar still constitutes the majority of asset holdings (though lower than the average of other developing and emerging economies), the most recent move by the RBI to purchase gold from the IMF has been viewed by many observers as a conscious diversification strategy adopted by India to move away from US dollar-denominated assets even further [Gangopadhyay and Behrmann, 2009].

III

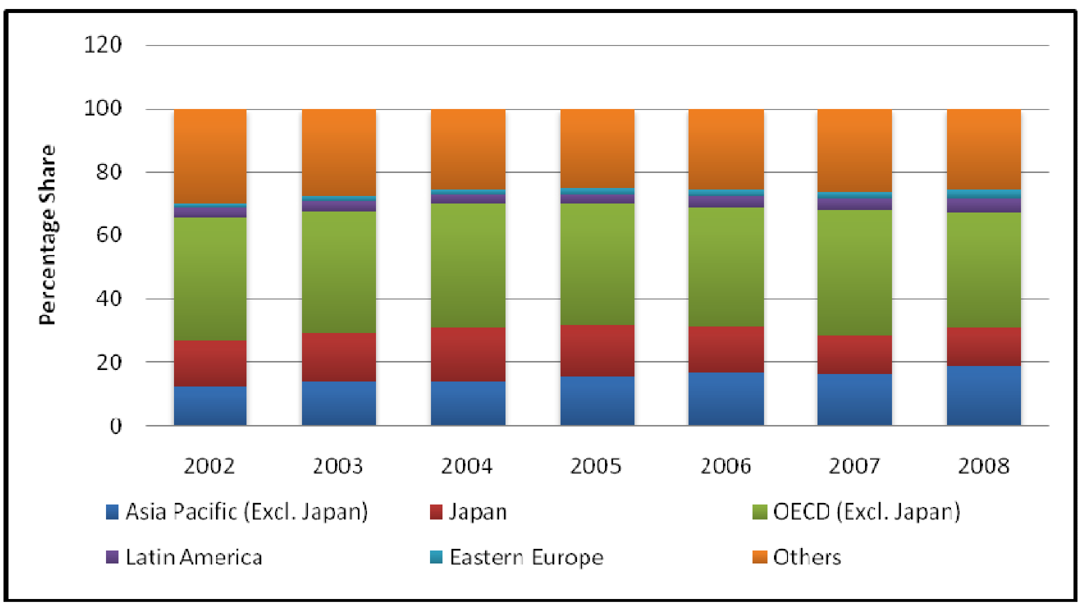
Tracking India's Investments in US Assets

Another way to counter-check whether US dollar assets have been relatively underweighted in India's reserve holdings is to look at the Treasury International Capital Reporting System (TIC) data which helps give an idea of the Asian countries' gross foreign asset purchases in the US. Notwithstanding some important limitations of the TIC data, as listed in Rajan and Gopalan (2009), the country coverage of the TIC data is quite extensive[vi] which enables us to track India's (and most of emerging Asia's) investments in US assets.

As Figure 5 reveals, the share of emerging Asia's capital inflows to the US has been growing gradually over the years and has averaged around 15 per cent (slightly over 25 percent if one includes Japan). About 40 percent is due to the developed world (excluding Japan) and the remainder from oil producers, offshore financial centers (OFCs), etc. It is important to bear in mind that most likely some of Asia's shares are understated because of transshipping via non-Asian intermediaries. Despite this, there are a substantial number of Asian countries figuring prominently amongst the list of top investors in US securities led by China.

Further examination of the TIC data reveals that the Asian countries have a clear preference for US Treasuries and agency bonds (i.e. the bonds of government sponsored entities (GSEs) like Fannie Mae and Freddie Mac). This suggests a degree of risk aversion among Asian investors and also points to the likelihood that a large source of funds from Asia is the central bank reserves.

Figure 5: Foreign Holdings of US Securities as a Share of Total US Securities

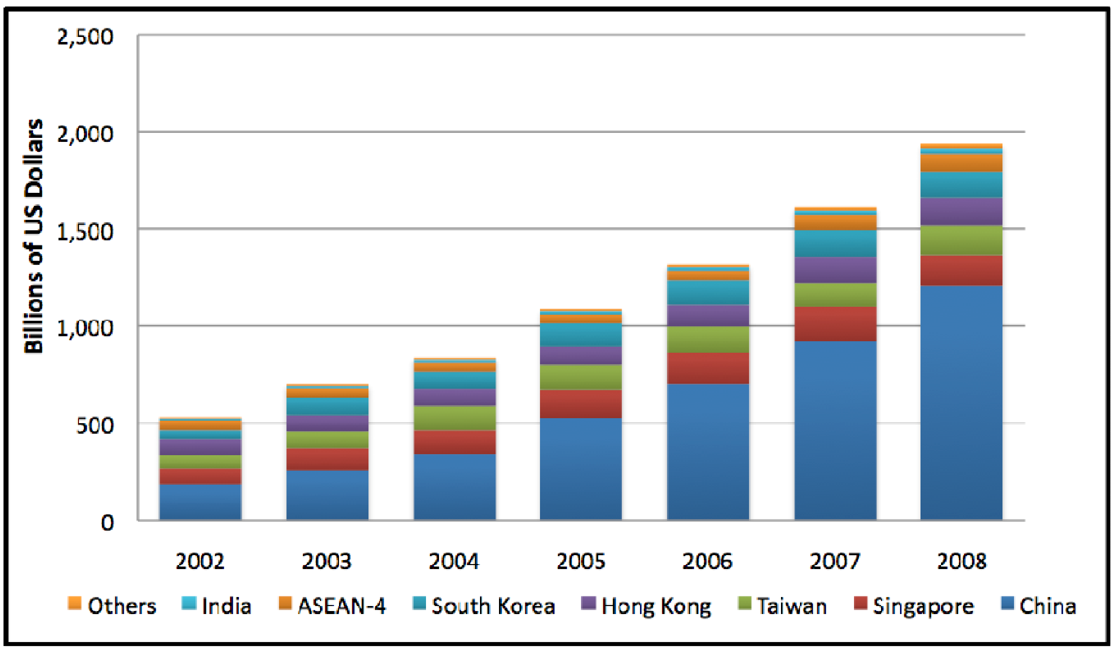


Source: Authors' computations from US Treasury TIC database.

India's share in emerging Asia's ownership of total US assets has been relatively insignificant at less than 2 per cent on an average during 2002 to 2008. Though the absolute values of India' total US assets purchased has risen from about US$ 10 billion US dollars in

2002 to over US$ 26 billion in 2008, it is marginal when compared to the purchases made by other large countries in Asia like China (US$ 170 billion US dollars in 2002 to over US$ 1170 billion in 2008)[vii] (Figure 6). By way of further comparison, the corresponding average shares of other emerging Asian economies with similar levels of reserves like India (i.e. South Korea, Taiwan, Hong Kong and Singapore) averaged 12 per cent of total purchases of US assets). So the key take-away here is that India's purchases of US assets have not been that high when compared to other countries in the region and this reiterates the already-discussed point that the country's reserves appear somewhat less concentrated in US dollar-denominated assets than many of its other Asian counterparts.

Figure 6: U.S. Asset Ownership Breakdown by Emerging Asian Economies



Source: Authors' computations from US Treasury TIC database.

IV
Conclusion

India's international reserves have risen markedly during most of last decade and a half. Most standard indicators suggest that India's reserve stock is more than adequate. Given India's comfortable reserve position, what then is behind the country's sustained reserve accumulation? Empirical analysis generally finds that the Indian Rupee has become quite heavily managed vis-à-vis the US dollar since the mid 1990s (though more flexible than many of its East Asian neighbours).[viii] Thus, the rapid stockpiling of foreign exchange reserves implies that the RBI has been leaning-against-the-wind to keep down the value of the Indian Rupee. As India has become more export-oriented it has become keenly aware of the need to remain price competitive in the short run, particularly in view of the continued limited flexibility of the Chinese currency [Frankel, 2009]. This prisoner's dilemma with regard to exchange rate policies in India and much of Asia in turn implies that there may be potential benefits from pursuing a more coordinated approach to dealing with monetary and exchange rate policies in the region.[ix]

This notwithstanding, as the opportunity and fiscal (sterilisation) costs of accumulating foreign exchange reserves have been steadily rising, it has become commonplace to hear Asian policy makers talk about channeling some part of their reserves to alternative higher yielding but non-liquid uses [Rajan, 2009, chapter 6]. There has been some discussion in India about whether it too, like other emerging economies in the region, should consider alternative uses of the country's burgeoning reserves, be it in terms of infrastructure development or the creation of a small SWF [Rajan, 2009, chapter 6]. However, such moves are unlikely given the relatively risk averse policy stance of the RBI. The global financial crisis of 2008-09 has probably added to this already high degree of conservatism. The RBI is likely therefore to remain heavily invested in liquid assets in (US dollar and Euro deposits and bonds) but with a conscious decision to further reduce concentration in US dollars when the opportunity arises by purchasing commodities such as gold as it attempts to protect its balance sheet from adverse valuations changes due to exchange rate movements. How aggressively they do so remains to be seen.

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[i] The official classification also includes IMF reserve position and Special Drawing Rights (SDRs). The essential legal framework for the deployment of foreign currency assets is provided for in the RBI Act 1934, which broadly permits investments in five different categories are as follows (RBI, 2009, p.4) "deposits with other central banks and the Bank for International Settlements (BIS); deposits with foreign commercial banks; debt instruments representing sovereign/sovereign-guaranteed liability with residual maturity for the debt papers not exceeding 10 years; other instruments / institutions as approved by the Central Board of the Reserve Bank in accordance with the provisions of the Act; and dealing in certain types of derivatives."

[ii] India's foreign currency and deposits also include deposits with foreign commercial banks. But on average over the last decade, the currency and deposits with other central banks, the BIS and the IMF have been over 80 per cent of the total foreign currency and deposits.

[iii] As opposed to some other countries like China and Korea that have attempted to reduce the costs of reserve holdings by moving them into higher-yielding assets while accepting relatively greater risks (i.e. focus on wealth management in addition to liquidity management).

[iv] See Roman (2009) and World Gold Council (2009).

[v] We arrive at this share of 60 per cent only when the share of US dollar assets is expressed as a percentage of the "allocated reserves", viz. reserves data for which currency composition has been identified.

[vi] There are over 200 countries representing the different regions of the world, including over 40 countries from the Asia-Pacific region.

[vii] Between 2002 and 2008, China made up about 45 per cent of total purchases of US assets from emerging Asia.

[viii] Cavoli and Rajan (2008) also suggest that the Euro is gradually gaining greater importance in influencing movements in the Indian rupee, but more so at the expense of the pound and yen rather than the US dollar.

[ix] To mitigate the balance of payments surplus, the RBI has in recent times allowed for a gradual appreciation of the rupee from 2002 to mid 2008 (compared to a gradual depreciation the preceding decade).