

FX reserves management – is RBI marching to its own drum?

Executive Summary

We believe that reports of the dollar's demise are greatly exaggerated. First of all, while the dollar's share in reserves of advanced countries has fallen from 70% in value terms to 66% since 1999 (and the euro's has risen from around 18% to 24%), the drop is quite modest and, in any case, most of this is a result of the cyclical decline in the value of the dollar. Secondly, it takes decades for a currency to go out of favor, and it really requires dramatic and continuous failure of policies (the UK at the start of the last century up until WWII, Japan more recently) or devastating war (the French franc, after WWII) to bring about such a collapse. Finally, the degree of integration in world economies, of which the dollar is certainly the linchpin, suggests that unwinding the dollar's positioning would be extremely costly.

It is significant, though, that many emerging economies report a lower dollar ratio (59%) in their reserves, as compared to the "advanced" countries. India's reserves, too, appear to have a lower dollar ratio. RBI has been quite aggressive in diversifying its reserves since as far back as 2003-04, when it increased its allocation to non-SDR currencies (like CHF, AUD, CAD, etc.) from just \$ 50 million to \$ 2.82 billion, a huge jump. Today, India holds nearly 7.5% of reserves in non-SDR currencies (as compared to around 2% in developed economies). Perhaps not coincidentally, this is about the ratio of non-SDR currencies in our trade basket.

While our trade basket (imports plus exports) invoicing is about 71% dollars, and our external debt is around 60% of our external debt is in dollars – both suggesting the need for a higher dollar ratio in reserves – a counterbalancing factor is the fact that the share of bulk imports in India's basket has risen from 31% in 1999 to nearly 45% today. These are largely raw materials, like oil and other commodities, whose prices are inversely correlated with the value of the dollar. To protect the economy against further commodity price rises – effectively putting in place something of a natural hedge – it would make sense to hold at least 45% of reserves in non-dollar currencies. The very loud purchase of 200 tonnes of gold by RBI in November 2009 may well have been part of this effort to manage the country's economic risk.

A statistical analysis of valuation changes in the reserves since 2006 suggests that the non-dollar holdings in our reserves are of the order of around 50%.

Putting all of this together, we estimate that RBI has diversified its reserves to where it probably holds 50% in dollars, about 35% in euros, 5% in yen, 3% in sterling and a surprisingly large 7.26% in non-SDR currencies, like CHF, AUD, etc.

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Background

On 30th September, the release of IMF's COFER (Composition of Foreign Exchange Reserves) data for the June quarter shocked the market as it showed that global central banks allocated nearly three times as much money to euros (\$123.10 b) as they did to dollars (\$42.87 b) while even the lowly pound, a pale shadow of its former imperial self, managed to garner \$20.98 b. This was the highest amount ever allocated to the euro, the first time the euro/dollar allocation ratio exceeded 2 and only the sixth allocation above \$100 b to any currency in over 10 years; the dollar, of course, received the first five.

With the threat to the dollar's primary reserve status appearing credible, this report examines how central banks globally have been dealing with this threat, with a particular focus on the currency composition of India's FX reserves.

Global Trends in Reserves Management

Liquidity and safety have been – and should always be – the primary goals of reserves management. However, with the massive increase in reserves over the past decade – a result of widening global imbalances – and the resultant negative carry, there has been an increased focus on the importance of returns on reserves. The shift has also been driven by political pressure, low global interest rates (leading to the negative carry), development of financial skills and markets, and greater central bank accountability resulting from greater independence. As a result, central banks have broadened the range of permissible asset classes and increased allocations for market, credit, and market liquidity risks. The use of derivatives has also increased as it permits decoupling of positions, increases flexibility, and pushes out the risk-return frontier. Indeed, perhaps the loudest evidence of a fundamental change of approach has been the increased use of external asset managers, with many central banks outsourcing at least a few percent of reserves, with some having [reportedly] outsourced more than 15%.

However, this push towards return has not materially impacted the currency break-up of global reserves, with non-SDR (USD, EUR, JPY and GBP) currencies making up only 2% of the total allocated world FX holdings of \$ 4.27 trillion. Total reserves (as of June 2009) amounted to \$6.80 trillion; however, as much as 37% (\$2.53 trillion) were unallocated (break up not available), with China and Taiwan accounting for the bulk of the unallocated reserves. As shown in chart 1, the increase in the proportion of unallocated reserves has coincided with the growth of China's reserves from \$212 b in 2001 to \$2.13 trillion.

Chart 2 shows that among allocated reserves, the combined share of euro and dollar has remained steady around 90%, with a modest increase of about 1% since 1999. While the changes are not dramatic, there does appear to be a cyclical tendency visible in the data, with the economic slowdowns of 2003 and 08 showing a rise in the share of these major currencies – a classic risk aversion response – while the 2003-08 growth cycle saw a reduction in the ratio (by 2%) and a corresponding increase in allocation in favor of smaller currencies.

The euro has improved its share of the combined holdings by over 10% during this decade, with the bulk of the increase coming in the early part of the decade, as central banks started diversifying into the new single currency soon after its launch in 1999. From 2003 to 2005, central banks rebalanced their portfolio back towards the dollar,

[Chart 1 - % of unallocated reserves]

[Chart 2 – the EUR/USD tango]

probably a result of the massive intervention by Japan trying to keep the yen from appreciating. Of course, the weakening dollar ensured that even with strong dollar buying, the euro's share in value terms remained north of 25%.

Emerging economies (notably China) have also been big buyers of dollars, increasingly from 2005 onwards, although data shows that they increased their buying of euros during the 2008 crisis. And, of course, the latest quarterly data discussed at the beginning of the report shows continuing allocation towards the EUR.

[Chart 3 – Share of non-SDR currencies in global reserves]

The Japanese yen has been the major casualty of portfolio rebalancing over the past 10 years, no doubt a result of both its higher volatility and near-zero yield. Chart 3 shows that sterling has done reasonably well, now accounting for a bit over 4% of allocated global reserves. Significantly, emerging markets have driven the rise of sterling, as their GBP holding is at 5.84% against 2.94% for advanced countries – of course, it is also possible that many emerging markets carried large sterling ratios as a holdover of sterling's imperial past. The Swiss franc has been out of the picture for at least the past decade, since it offers lower returns than EUR with zero diversification benefits. There are a handful of non-SDR currencies (AUD, CAD, SEK, NOK, DKK, and HKD) that form a secondary tier of reserve currencies, although their share in global allocated reserves remains small.

India's FX reserves – do we have enough?

At around \$ 280 billion, this may seem an odd question. With more than 10 months of import cover, we are a long ways from the bad old days, when we had less than 1 month of import cover just prior to the devaluation of the rupee in 1991. We note, however, that while our current level of reserves is respectable, it is at an 8-year low, mostly as a result of RBI's market operations during and since the 2008 financial crisis.

Further, with a far more open capital account (than in 1991), the simple metric of months of import cover is no longer adequate to assess whether our levels of reserves are sufficient. We need to recognize other threats to liquidity, notably hot money flows, and short-term debt. Looking at these, the picture is not quite as comforting. While total reserves are around twice the sum of short-term debt and total stock of portfolio

investments, that ratio has been stagnant for some years, and fell during/after the last crisis. More concerning is the fact that our short-term debt (maturing in less than one year) has risen to over 20% of total debt. In fact, in absolute terms, short-term debt went up 18-fold from \$2.75 b to \$49.37 b, and there is a repayment hump coming up over 2012 and 2013 (\$20.64 b and \$22.78 b, respectively).

[Table – Indicators of Adequacy of FX Reserves]

Another more sophisticated indicator is the Guidotti rule, which compares reserves to the sum of short-term debt and the current account deficit. Here, too, the performance has been deteriorating, with the ratio (3.18), while reasonably healthy, being the lowest since 1999 [not including the years 2002 to 2004, when we ran a current account surplus].

Net net, it would seem that we do need to be a bit careful, and we can expect RBI to continue to be aggressive in replenishing its stock of reserves, all other things – notably, inflation – being acceptably comfortable. Continued dollar buying would also help sustain export competitiveness to some extent.

Composition of India's reserves

Within the overall ambit of safety and liquidity, RBI has had to take a very pro-active stance in reserves allocation to protect its own balance sheet against potentially serious valuation losses, which last fiscal reached a huge \$ 37.7 billion (on total reserves of around \$ 300 billion).

There appear to be several other rationales that RBI is following in allocating its reserves.

Balancing India's trade basket

Perhaps the most striking aspect of the currency break-up of India's reserves is the substantial share of non-SLR currencies. Compared to only about 2% in globally allocated reserves, India holds over 7% of its reserves in non-SLR currencies.

[Table – Composition of India's FX reserves]

This move began in 2003-04, when RBI, perhaps emboldened by the apparent excess of reserves, appeared to start thinking beyond the standard safety and liquidity considerations and, venturing out of the conservative comfort zone of the four SDR currencies, increased its holding of non-SDR currencies. RBI's boldness in charting its own course is clear from the following:

- 1) In 2003-04, it increased its allocation (to non-SDR currencies) from just \$ 50 million to \$ 2.82 billion, a huge jump
- 2) It allocated 24% of incremental reserves to non-SDR currencies in 2006
- 3) At 8.62%, the 2008 allocation was four times the global allocation to these currencies

Over the last four years, the non-SDR share has stabilized above 7%, very close to the share of these currencies in India's trade [see Other OECD in the table *Direction of Trade*.]

The table shows that the share of the 4 major economies – whose currencies comprise the IMF's SDR – has fallen consistently over the past decade. The other OECD countries, which include issuers of the secondary reserve currencies (CHF, AUD, CAD, SEK, NOK, and DKK), have managed to hold on to their trade share by virtue of being exporters of raw materials or luxury/capital goods. This would suggest that RBI's increased allocation of these minor currencies might have to do with its effort to balance the currency risk on India's overall trade basket.

Another important aspect of the shift in India's trade is that the developed world's trade share has come down from 54% in 1999 to 38% in 2008; however, trade invoicing is still largely in dollars (which has the lion's share at 71%) or euros (16%). Of course, the currency risk on our dollar trade basket is actually substantially lower than this number (71%), since exports provide a significant natural hedge to our imports – thus, from the point of view of holding reserves to balance the currency risk on our trade, the dollar's share does not need to be anywhere close to that high.

[Direction of trade – Exports + Imports]

Considering our asset-liability mismatch

Another important consideration for RBI would be the scale and composition of India's external debt. Today, our reserves are about 25% larger than our external debt (of \$ 227 billion).

In terms of composition, the table shows that the dollar is, unsurprisingly, the big daddy for borrowing – adding in its share in SDRs, about 60% of India's external liabilities are in dollars. The yen is another favorite for borrowing, both because of its low interest rates over the past decade or more, and the compounding impact of this on the withholding tax on foreign borrowings.

[Currency Composition of India's External Debt]

If asset-liability management were the primary driver of reserves allocation, RBI would need to hold a minimum of 48% of our reserves in dollars to cover the risk on the total dollar-denominated debt. So, too, it would need to carry a minimum of 12-13% of reserves in yen.

Managing economic risk

[Components of India's Imports]

The table shows that the share of bulk imports rose from 31% of total imports in 1999 to 45% in 2008. These are raw materials / commodities, most of whose prices rose sharply over the past decade. Again, these prices are generally very strongly inversely correlated with the value of the dollar. To protect the economy against further commodity price rises – to effectively put in place something of a natural hedge – it would make sense to hold at least 45% of reserves in non-dollar currencies. The very loud purchase of 200

tonnes of gold by RBI in November 2009 may well have been part of this effort to manage the country's economic risk.

Regression Analysis

To arrive at the exact currency composition, we ran multiple regressions against the monthly percentage change in value of India's FX reserves (after netting out RBI's purchases and sales of dollars) over different periods using different currency combinations.

While the regression with the larger number of currencies showed a very high coefficient of determination ($R^2 = 86\%$), many of the coefficients were negative, which was probably a result of multiple correlations between the currencies. To work around the problem, we reduced the number of currencies till we got no negative coefficients and a still strong coefficient of determination. This resulted in just two variables – the intercept (representing the return on the reserves) and CurrBasket (representing all non-dollar currencies).

R^2 dropped to 75%, which is still acceptable, the intercept came in at 0.41, and the CurrBasket coefficient was at 0.5. The intercept reflects the monthly return on reserves, which suggests that RBI is currently earning 4.92% (0.41×12) on its reserves; the coefficient of CurrBasket suggests that non-dollar composition of reserves is 50%.

Putting all of this together, we estimate that

- a) USD share in reserves is 50%
- b) JPY is at 5%, despite its high share in our debt, its poor fundamentals, near-zero return and high volatility suggest that, like other global central banks, RBI would keep as low a share of JPY as is feasible; we note that globally JPY forms about 3% of allocated reserves
- c) Sterling is at 3%, reflecting its 2.8% share of trade and 2.3% share of debt
- d) non-SDR share is divided amongst components in the ratio of their share of imports
- e) EUR makes up the balance (about 35%)

Conclusion

While we believe that reports of the dollar's demise are greatly exaggerated, there is little doubt that the dollar has been losing some ground in terms of its representation in the reserves of central banks around the world.

RBI appears to have been (one of) the leading edge(s) in this diversification away from the dollar. Our analysis suggests that India holds not more than 50% of its reserves in dollars, as against 59% for other emerging markets (where the allocation has been disclosed) and around 64% for the "advanced" markets.

Our estimate of India's FX reserves break-up	
USD	50.00
EUR	34.74
JPY	5.00

GBP	3.00
Non-SDR (CHF, AUD, etc)	7.26
Returns (%/yr)	4.92