Duvvuri Subbarao: Implications of the expansion of central bank balance sheets

Comments by Dr Duvvuri Subbarao, Governor of the Reserve Bank of India, at the Special Governors' Meeting, Kyoto, 31 January 2011.

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At the outset, let me congratulate the BIS for bringing out a very analytical and comprehensive paper on the subject. The topic for the session has been thrown into prominence by the experience of the recent financial crisis when many central banks were forced to adopt an expansionary stance of monetary policy. The expansion of balance sheets of central banks has important monetary and financial implications. In normal times, a central bank's balance sheet attracts little attention. The relevance of the paper during the turbulence times marked with the fears of hard landing cannot be understated. The paper analyses the huge growth in Asian central bank balance sheets during the past decade, and as the trend does not show signs of abating, it throws for open debate the possible global implications and policy challenges.

The analysis of the liabilities side of the balance sheet exhibiting diversity across the Asian panorama is more interesting. Apart from currency and reserve money, liability items like issuance of central bank paper, the use of deposit facilities and changes in government deposits – all of them have an interesting story to tell. The efficacy of various instruments for sterilisation of large capital inflows have also been covered comprehensively in the paper. The challenges for central banks also include managing these more complex operational issues while ensuring that the structure of the assets and liabilities are consistent with central banks' overarching policy objectives.

Against this background, I will put forward my remarks under the following heads with our own experience, wherever, necessary.

(i) Behaviour of Balance Sheets of Advance Economies and EMEs during and after the Crisis

(ii) Relative Efficacy of different Instruments in the Context of Sterilisation

(iii) Management of Capital Account

(iv) Behavior of Reserve Bank's Balance Sheet

(v) Market Stabilisation Scheme – India's Unique Sterilization Scheme

(vi) Use of Macro Prudential Tools

(vii) Reserve Management

(viii) Communication Challenges of Holding Foreign Asset

Behaviour of balance sheets of advance economies and EMEs during and after the crisis

The quantitative easing in the wake of the global financial crisis led to dramatic changes in the size and composition of central bank balance sheets. While both developed economies and EMEs resorted to unconventional monetary measures, there were differences in terms of their timing, types and magnitudes.

First, in the advanced economies, the switchover was from conventional monetary tools to unconventional measures due to policy rates reaching zero or nearing zero. In contrast, in many EMEs, unconventional foreign exchange easing measures such as currency swap

preceded domestic liquidity-easing measures due to the sudden tightening of global liquidity. Thereafter, the conventional measures of loosening policy rates followed.

Second, to ease liquidity, advanced countries resorted to measures such as widening the availability of counterparties and extending the maturity of liquidity providing operations. On the other hand, central banks in EMEs relied mostly on direct instruments such as reserve requirements.

Third, the central banks in advanced countries extensively used credit and quantitative easing measures, while they were barely used in the EMEs. As a result of the extensive use of credit and quantitative easing, the enlargement in the balance sheet of central banks in the advanced countries was far greater than those of the EMEs[1]. As at end May 2010, central banks' balance sheet of advanced economies amounted to US $ 7 trillion (Hannoun, 2010)[2]. In Bank of England, from an average of size of 4.0 per cent of annual nominal GDP, BoE balance sheet expanded to over 17.0 per cent of GDP in 2010 (BoE Quarterly Bulletin, 2010Q1[3]). Fed has been by far the most aggressive in expanding the size of its balance sheet, increasing it by 134 per cent in April 2009 as compared to a year ago (Sheard, 2009)[4]. In the emerging market economies, the size of the central banks' balance sheets had already expanded considerably before the crisis as central banks had built up reserves. The combined foreign exchange reserves of major emerging market economies stood at US $ 5 trillion in mid-2008 (Hannoun, 2010). Post crisis, the size of assets of some of the EMEs like Indonesia, Malaysia and India witnessed a precipitous decline.

Fourth, the nature of expansion of liabilities of Asian central banks has been more diverse than that of assets. Currency and reserve money has risen sharply because of imposition of higher reserve requirements in order to curb growth of bank lending. In China and Indonesia, greater issuance of central bank paper and use of deposit facilities at central banks showed up significantly.

Relative efficacy of different instruments in the context of sterilisation

The note from the BIS discusses in detail the efficacy of various instruments for sterilisation. It is important to recognise that the various instruments have differential impact on the balance sheets of the central bank, government and the financial sector. For example, in the case of open market operation (OMO) sales, owing to the difference between international and domestic interest rates, there is a positive cost of sterilisation in case the domestic interest rates are higher than the reserves. This cost is borne by the central bank. Sales of government securities under OMO also involve a transfer of market risks to the financial intermediaries, mostly banks. In the context of an increase in cash reserve ratio (CRR) or reserve requirements, the cost is borne by the banking sector if CRR balances are not remunerated. However, if the CRR balances are remunerated, the cost could be shared between the banking sector and the central bank. The central Government has to bear the cost in case of Market Stabilisation Scheme (MSS), a unique facility used in India, the details of which I will discuss in later part of my remarks. The repo operations have a direct cost to the central bank. The foreign institutional investors and the corporate have to share the cost of any capital controls used by the country. The extent of capital flows to be sterilised and the choice of instruments, thus, also depend upon the impact on the balance sheets of these entities.

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1 Ishi, Kotaro, Mark Stone, and Etienne B. Yehoue. 2009. "Unconventional Central Bank Measures for Emerging Economies". IMF Working Paper WP/09/226.

2 Hannoun, H (2010): "The expanding role of central banks since the crisis: what are the limits?", BIS Speech.

3 Cross et al (2010): The Bank's balance sheet during the crisis, BoE Quarterly Bulletin, 2010Q1.

4 Sheard, P (2009): "Central Bank Balance Sheet Expansion", Nomura, 2010.

In our case, in order to sterilize the impact of additional liquidity in the system generated through large capital inflows, open market operations (OMO) have been supplemented by daily liquidity adjustment facility (LAF) to deal with frictional liquidity. As mentioned above, since 2004, RBI has instituted additional instruments of sterilization namely the market stabilisation scheme (MSS). As and when necessary, RBI has also used traditional instruments like cash reserve ratio (CRR) and statutory liquidity ratio (SLR) to absorb excess liquidity in the system. The cost of sterilisation is shared among the Reserve Bank, Government and the banks. Since surpluses of the Reserve Bank are transferred to the Central Government, on a combined balance sheet basis, the relative burdens of cost between the Government and Reserve Bank are not of great relevance. However, the direct cost borne by the Government is transparently shown in its budget accounts.

Greater flexibility in exchange rate movements, liberalization of capital outflows, prepayment of external debt obligations and modulation of interest rate ceilings on non-resident deposits have also been used to manage capital account inflows from time to time. Given the availability of multiple instruments at its command, the Reserve Bank has the flexibility to use these instruments and modulate the liquidity and interest rate conditions amidst large capital flows. The use of specific instrument is contextual depending not only on the nature and size of flows but also domestic considerations.

Management of capital account

When we talk of large capital inflows and the subsequent impact on balance sheet, we should be reminded that managing capital flows should not be treated as an exclusive problem of EMEs. The burden of adjustment has to be shared. How this burden has to be measured and shared raises both intellectual and practical policy challenges. The intellectual challenge is that we do not have a good theory that explains the role of capital flows in the determination of exchange rates. We, of course, have an established theory of current account management and the role of exchange rate as a variable in that. What we now need is a theory that encompasses both current and capital accounts and one that gives a better understanding of what capital controls work and in what situations. That is the intellectual challenge. What is the practical challenge? The practical challenge is that once we have such a theory, we need to reach a shared understanding on two specific aspects: first, to what extent are advanced economies responsible for the cross border spill over impact of their domestic policies, and second, what is the framework of rules that should govern currency interventions in the face of volatile capital flows.

One option for EMEs, now more prominently discussed and even imposed by many countries, is capital controls on inflows. Experience in this regard has been mixed. Protagonists of controls have argued that capital controls are distortionary, difficult to implement, easy to evade, and that they become ineffective fairly quickly and entail negative externalities. On the other hand, proponents of capital controls contend that controls are desirable because they preserve monetary policy autonomy, save sterilization costs, tilt the composition of foreign liabilities toward long-term maturities, and ensure macroeconomic and financial stability. The challenge for policy makers is to design and implement controls where the cost of compliance is lower than the cost of evasion. Refreshingly, the IMF has shed its long held orthodoxy against capital controls. The policy note of the IMF published in February 2010[5] has referred to certain "circumstances in which capital controls can be a legitimate component of the policy response to surges in capital flows".

India has experienced both "floods" and "sudden stops" of capital flows. India has followed a consistent policy on allowing capital inflows in general and on capital account management

[5] Ostry, Jonathan D. and Others (2010), "Capital Inflows: The Role of Controls", IMF Staff Position Note, SPN/10/04, February 19, 2010.

in particular. Our position is that capital account convertibility is not a stand alone objective but a means for higher and stable growth. We believe our economy should traverse towards capital convertibility along a gradual path – the path itself being recalibrated on a dynamic basis in response to domestic and global developments. Among the components of capital flows, we prefer long term flows to short-term flows and non-debt flows to debt flows. Historically, we have used policy levers on the debt side of the flows to manage volatility. Contrary to popular perception, we have used both quantity and price based variables to moderate debt flows. There is a ceiling on the extent of FII investment in sovereign and corporate debt (quantity variable) and there is also a withholding tax (price variable). External commercial borrowings (ECB) by corporates come in through both an automatic route and an approval route. ECB flows under both the automatic and approval routes are moderated by interest rate ceilings (a price variable) and those under the automatic route through an additional ceiling on total quantity (a quantity variable). Non-Resident Indians (NRI) deposits are monitored through an interest rate ceiling, a price variable.

Behavior of Reserve Bank's balance sheet

For India, the size of central bank assets (as a percentage of GDP) increased between end 2001 and end 2007 but declined thereafter during the crisis period. The increase in the size during the period 2001 to end 2007 reflected the efforts of the monetary authority to prevent the destabilising impact of large scale capital inflows on the domestic economy through intervention in the forex market. The Reserve Bank subsequently conducted sterilisation operations to offset the monetary impact of forex accretion. After 2007, unlike the significant expansion in the balance sheets of the central banks of several advanced economies that resulted from their policy responses to the crisis, the behaviour of the Reserve Bank's balance sheet was distinctly different since specific measures, such as, reduction in CRR and unwinding of Government's MSS balances implied corresponding contraction in Reserve Bank's liabilities, even as both measures were the key channels for injecting large liquidity to the financial system. Thus, through contraction in the balance sheet size, the Reserve Bank could expand the availability of liquidity. On the asset side of the balance sheet also, the contraction was driven by the decline in foreign assets in sync with capital outflows. The size of the Reserve Bank's balance sheet, however, increased significantly in 2009–10 (July–June)[6] as we exited from the liquidity enhancing measures undertaken during the period of crisis. It is interesting to note that unlike the advanced economies, India did not have to use large scale policy stimulus to bail out failing institutions and freezing markets. Also, there was no purchase of private sector assets using central bank reserves.

Market stabilisation scheme – India's unique sterilization scheme

Faced with large scale capital inflows since 2003–04, the market-based sterilisation operations led to a progressive reduction in the quantum of securities with the Reserve Bank. In view of the finite stock of government securities available with the Reserve Bank for sterilisation, particularly, as the option of issuing central bank securities is not permissible under the RBI Act, a new instrument named as the Market Stabilisation Scheme (MSS) was introduced since April 2004 purely for sterilization purposes as the capital inflows surged. Under this scheme, the Reserve Bank has been empowered to issue Government Treasury Bills and medium duration dated securities for the purpose of liquidity absorption. The scheme works by impounding the proceeds of auctions of Treasury bill and Government securities in a separate identifiable MSS cash account maintained and operated by the RBI. The amounts credited into the MSS cash Account are appropriated only for the purpose of

[6] The financial year of the Reserve Bank Balance Sheet begins from July 1 and ends on June 30.

redemption and / or buy back of the Treasury Bills and / or dated securities issued under the MSS. MSS securities are indistinguishable from normal Treasury Bills and Government dated securities in the hands of the lender. The payments for interest and discount on MSS securities are not made from the MSS Account, but shown in the Union budget and other related documents transparently as distinct components under separate subheads.

The ceiling for issuance is fixed of securities under MSS is fixed annually through mutual consultation between the Government and the Reserve Bank and indicated in the Union Budget estimates. The use of MSS (as against central bank bills where the cost is borne by the central bank) has contributed to the central bank independence since the central bank is not dependent on the government for its recapitalisation in the event of making losses and is, thus able to carry out its monetary policy operations independently.

The introduction of MSS has succeeded broadly in restoring Liquidity Adjustment Facility (LAF) to its intended function of daily liquidity management. The MSS has served as a very useful instrument for medium term monetary and liquidity management. It has been unwound at times of low capital flows and built up when excess capital flows could lead to excess domestic liquidity. In the face of reversal of capital flows during the recent crisis, MSS balances provided a liquidity buffer which could be unwound to ease liquidity conditions and finance the fisc.

Use of macro prudential tools

India like some other EMEs has by now accumulated a rich experience in the use of macroprudential tools. This has been acknowledged widely including in the ongoing work by the CGFS to develop the framework and standards on maroprudential instruments which I am sure will popularise the use of macroprudential tools the world over. India's experience with the use of macroprudential instruments is unique. While the recently announced Basel III standards lays down counter cyclical capital requirements at the aggregate level, India has used a sectoral approach to contain sharp build up of credit in the housing and real estate sectors by imposing higher risk weights and provisioning norms. The same tool was used in the reverse direction when the boom conditions turned adverse, thus highlighting its feature as a countercyclical tool.

To give some examples of our use of macroprudential tools, during the expansionary phase since 2004, the rapid growth in housing and consumer credit was flagged as a concern and as a temporary counter cyclical measure, the risk weight applicable to these loans was increased by 25 basis points in October 2004. Second, in the context of continuing high credit growth, the limitations of the prudential framework in capturing the ex-ante risks of pro-cyclical nature of bank credit were explicitly recognized in October 2005 which triggered an across the board increase in provisioning requirement for standard assets. Third, to counter the possibility of an asset bubble in addition to concerns about credit quality led to risk weight on banks' exposure to the commercial real estate (CRE) and capital market being increased from 100 per cent to 125 per cent in July 2005. Fourth, given the continued rapid expansion in credit to the commercial real estate sector, the risk weight on exposure to this sector was increased to 150 per cent in May 2006. Fifth, the general provisioning requirement on standard advances in specific sectors, i.e., personal loans, loans and advances qualifying as capital market exposures, residential housing loans beyond Rs.20 lakh and commercial real estate loans was increased from 0.40 per cent to one per cent in April 2006 and further to two per cent on January 31, 2007.

Reserve management

The BIS paper notes that large foreign exchange reserves expose central bank balance sheets to significant losses mainly from two sources: losses on holding of reserves due to exchange rate appreciation and carrying costs – the difference between the interest rate cost of funding the reserves and the return on foreign assets is the carrying cost of reserves. The

guiding objectives of foreign exchange reserves management in India are similar to those of many central banks in the world – safety, liquidity and returns. In India, given that the domestic interest rates are higher than return on reserves, the carrying cost is positive. This cost has to be traded-off with the benefits associated with higher reserves in terms of confidence it provides to the market and serving as key ammunition to face crisis. The exchange rate movement of major currencies is exogenously given to any reserve manager. The reserve manager has to devise strategies so as to minimise the losses or gain from the movement in exchange rate.

The foreign currency assets are invested in multi-currency, multi-asset portfolios as per the existing norms which are similar to the best international practices followed in this regard. The broad strategy for reserve management including currency composition and investment policy is decided in consultation with the Government of India. The management of risks – credit risk, market risk, liquidity risk and operational risk and the systems employed to manage these risks are aimed at ensuring development of sound governance structure in line with the best international practices, improved accountability, a culture of risk awareness across all operations and efficient allocation of resources for development of in-house skills and expertise.

Although India does not have a deliberate strategy of building up reserves for self insurance, our reserves got built up as a result of our relatively flexible exchange rate policy. The reserves so built up have been used to contain volatility in the event of capital flow reversals. There has been much discussion post-crisis on the cost effectiveness of self-insurance. The main refrain has been that accumulation of reserves by EMEs as safety-net entails domestic costs while also leading to global imbalances. Be that as it may, in evaluating the level of reserves and the quantum of self insurance, it is important to distinguish between countries whose reserves are a consequence of current account surpluses and countries with current account deficits whose reserves are a result of capital inflows in excess of their economy's absorptive capacity. India falls in the latter category. Our reserves comprise essentially borrowed resources, and we are therefore more vulnerable to sudden stops and reversals as compared with countries with current account surpluses.

Communication challenges of foreign asset

Over the last two decades, central banks have moved towards clearer communication and greater transparency. This has been driven by several motivations. Central banks have realized that open and transparent communication enhances policy effectiveness by way of achieving expected outcomes. Our communication on foreign assets reflects this philosophy. We have, however, progressively moved towards greater disclosure in line with international best practices. Every week we disclose the changes in foreign exchange reserves with a week's lag. Every six months, we publish a detailed report giving details of the objectives, risks and developments relating to reserve management operations. The Reserve Bank is among 68 central banks from around the world to have adopted the Special Data Dissemination Standards (SDDS) template for publication of detailed data on foreign exchange reserves. These data are put out on a monthly basis on RBI's website. The Reserve Bank is also one of the very few central banks which publish market intervention numbers in its monthly Bulletin with a lag of two months.

We do not disclose the currency composition of our reserves and we have been criticized for our lack of communication in this regard. The reason we do not disclose the currency composition is because, as the forex reserves manager, we are like any other commercial entity in the market. The information is market sensitive and disclosure could potentially impact our commercial interests adversely. Disclosure also has wider implications for our international relations. Furthermore, market efficiency is in no way affected by our non-disclosure. Indeed non-disclosure is the norm around the world; a majority of the countries, particularly the large reserve holders, do not disclose the composition of their foreign exchange reserves.