

India's Foreign Exchange Reserves: Policy, Status and Issues

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I am thankful to the National Council of Applied Economic Research, (NCAER) and in particular, to Dr. Suman Bery, for giving me this opportunity to make a presentation on the foreign exchange reserves. There are several reasons for speaking on this subject before this august gathering in the capital.

First, the subject is receiving renewed global interest among policy makers and academicians against the backdrop of increasing globalisation of emerging economies, acceleration of capital flows, and integration of financial markets domestically as well as globally. The debt crisis in some of the developing countries in the early nineties, the East Asian crisis in 1997 and more recently the currency crisis of Argentina have posed several dilemmas to policy makers on forex reserves.

Second, multilateral bodies, especially, the Bank for International Settlements (BIS) and International Monetary Fund (IMF) are attempting several initiatives in regard to international financial architecture in the context of the debt-banking-financial crisis in several countries, and matters relating to forex reserves have become an important component of this initiative, encompassing issues on policy, management and transparency.

Third, there is some interest within India on our level of forex reserves, as evidenced by several articles in financial dailies, economic journals and research papers. There are also some differences among academics on the direct as well as indirect costs and benefits of the level of forex reserves, from the point of view of macro-economic policy, financial stability and fiscal or quasi-fiscal impact.

Fourth, Reserve Bank of India (RBI) has been adopting a proactive communication policy, particularly under the leadership of Governor Bimal Jalan, and accordingly it is appropriate that the relevant issues are also presented from the perspective of the Reserve Bank.

Finally, there is some personal involvement and excitement for me in this subject. The period 1990-2002 has been a journey from *agony to comfort* in matters relating to forex reserves; for in 1990-91, sitting in North Block in Ministry of Finance in Delhi, I was one of those who had to ensure that given the very low level of forex reserves and the manner in which they happened to be deployed, there was enough cash balance to permit day-to-day forex payments of even a million U.S. dollars. In such a predicament, the threat of national humiliation as well as discomforting relations with foreign agencies obviously touched on personal pride. Furthermore, in crafting a liberalised forex regime in the last decade, those of us involved in the process of reform have been acutely aware of the judgements and risks involved at every step in forex reserves policy and management. Over the period, without adding much to the stock of external debt, there has been a quantum jump in forex reserves. This position needs to be contrasted with the 1980s, when external debt, especially short term debt, mounted while the forex reserves got depleted. In fact, it is often held that, between 1956 and 1992, India faced balance of payments constraints in all but six years, while during the last ten years, there has never been a feeling of constraint on this account, even though the period coincided with liberalisation of external

account, global currency crisis and domestic political uncertainties.

This presentation attempts to capture the basic concepts, theory and practice with orientation on issues relevant to India. The questions addressed are: What are forex reserves? Why hold forex reserves and how did the policy evolve? What is the appropriate level of reserves? How does the current status appear in terms of indicators of adequacy of reserves? The presentation proceeds further to focus on several aspects of forex management, such as the implications for quasi fiscal deficit and communication policy of the Reserve Bank. The issues in regard to policy and management of forex reserves in India are posed in some detail while the concluding part contains my random thoughts from a futuristic perspective. Given the broad canvass and well recognised complexity, the presentation, for most part, touches on the broad contours without going into abstruse technical and academic details.

The subject of forex reserves may be broadly classified into two inter-linked areas, namely, the theory of reserves, and the management of reserves. The theory of reserves encompasses issues relating to institutional and legal arrangements for holding reserve assets, conceptual and definitional aspects, objectives for holding reserve assets, exchange rate regimes, and conceptualisation of the appropriate level of foreign reserves. In essence, a theoretical framework for reserves provides the rationale for holding forex reserves. Reserve management is mainly guided by the portfolio management consideration *i.e.*, how best to deploy foreign reserve assets? The portfolio considerations take into account *inter alia*, safety, liquidity and yield on reserves as the principal objectives of reserve management. The institutional and legal arrangements are largely country specific and these differences should be recognised in approaching the critical issues relating to both reserve management practices and policy making.

What are Forex Reserves?

Conceptually, a unique definition of forex reserves is not available as there have been divergence of views in terms of coverage of items, ownership of assets, liquidity aspects and need for a distinction between owned and non-owned reserves. Nevertheless, for policy and operational purposes, most countries have adopted the definition suggested by the International Monetary Fund (Balance of Payments Manual, and Guidelines on Foreign Exchange Reserve Management, 2001); which defines reserves as external assets that are readily available to and controlled by monetary authorities for direct financing of external payments imbalances, for indirectly regulating the magnitudes of such imbalances through intervention in exchange markets to affect the currency exchange rate, and/or for other purposes.

The standard approach for measuring international reserves takes into account the unencumbered international reserve assets of the monetary authority; however, the foreign currency and the securities held by the public including the banks and corporate bodies are not accounted for in the definition of official holdings of international reserves.

In India, the Reserve Bank of India Act 1934 contains the enabling provisions for the Reserve Bank to act as the custodian of foreign reserves, and manage reserves with defined objectives. The powers of being the custodian of foreign reserves is enshrined, in the first instance, in the preamble of the Act. The 'reserves' refer to both foreign reserves in the form of gold assets in

the Banking Department and foreign securities held by the Issue Department, and domestic reserves in the form of 'bank reserves'. The composition of foreign reserves is indicated, a minimum reserve system is set out, and the instruments and securities in which the country's reserves could be deployed are spelt out in the relevant Sections of the RBI Act.

In brief, in India, what constitutes forex reserves; who is the custodian and how it should be deployed are laid out clearly in the Statute, and in an extremely conservative fashion as far as management of reserves is concerned. In substantive terms, the Reserve Bank functions as the custodian and manager of forex reserves, and operates within the overall policy framework agreed upon with Government of India.

Why Hold Forex Reserves?

Technically, it is possible to consider three motives *i.e.*, transaction, speculative and precautionary motives for holding reserves. International trade gives rise to currency flows, which are assumed to be handled by private banks driven by the transaction motive. Similarly, speculative motive is left to individual or corporates. Central bank reserves, however, are characterised primarily as a last resort stock of foreign currency for unpredictable flows, which is consistent with precautionary motive for holding foreign assets. Precautionary motive for holding foreign currency, like the demand for money, can be positively related to wealth and the cost of covering unplanned deficit, and negatively related to the return from alternative assets.

From a policy perspective, it is clear that the country benefits through economies of scale by pooling the transaction reserves, while subserving the precautionary motive of keeping official reserves as a 'war chest'. Furthermore, forex reserves are instruments to maintain or manage the exchange rate, while enabling orderly absorption of international money and capital flows. In brief, official reserves are held for precautionary and transaction motives keeping in view the aggregate of national interests, to achieve balance between demand for and supply of foreign currencies, for intervention, and to preserve confidence in the country's ability to carry out external transactions.

Reserve assets could be defined with respect to assets of monetary authority as the custodian, or of sovereign Government as the principal. For the monetary authority, the motives for holding reserves may not deviate from the monetary policy objectives, while for Government, the objectives of holding reserves may go beyond that of the monetary authorities. In other words, the final expression of the objective of holding reserve assets would be influenced by the reconciliation of objectives of the monetary authority as the custodian and the Government as principal. There are cases, however, when reserves are used as a convenient mechanism for Government purchases of goods and services, servicing foreign currency debt of Government, insurance against emergencies, and in respect of a few, as a source of income.

What are the dominant policy objectives in regard to forex reserves in India? It is difficult to lay down objectives in very precise terms, nor is it possible to order all relevant objectives by order of precedence in view of emerging situations which are described later. For the present, a list of objectives in broader terms may be encapsulated *viz.*, (a) maintaining confidence in monetary and exchange rate policies, (b) enhancing capacity to intervene in forex markets, (c) limiting

external vulnerability by maintaining foreign currency liquidity to absorb shocks during times of crisis including national disasters or emergencies; (d) providing confidence to the markets especially credit rating agencies that external obligations can always be met, thus reducing the overall costs at which forex resources are available to all the market participants, and (e) incidentally adding to the comfort of the market participants, by demonstrating the backing of domestic currency by external assets.

At a formal level, the objective of reserve management in India could be found in the RBI Act, where the relevant part of the preamble reads as ‘to use the currency system to the country’s advantage and with a view to securing monetary stability’. This statement may be interpreted to hold that monetary stability means internal as well as external stability; implying stable exchange rate as the overall objective of the reserve management policy. While internal stability implies that reserve management cannot be isolated from domestic macroeconomic stability and economic growth, the phrase ‘to use the currency system to the country’s advantage’ implies that maximum gains for the country as a whole or economy in general could be derived in the process of reserve management, which not only provides for considerable flexibility to reserve management practice, but also warrants a very dynamic view of what the country needs and how best to meet the requirements. In other words, the financial return or trade off between financial costs and benefits of holding and maintaining reserves is not the only or the predominant objective in management of reserves.

Evolution of Reserve Management Policy in India

India’s approach to reserve management, until the balance of payments crisis of 1991 was essentially based on the traditional approach, *i.e.*, to maintain an appropriate level of import cover defined in terms of number of months of imports equivalent to reserves. For example, the Reserve Bank’s Annual Report 1990-91 stated that the import cover of reserves shrank to 3 weeks of imports by the end of December 1990, and the emphasis on import cover constituted the primary concern say, till 1993-94. The approach to reserve management, as part of exchange rate management, and indeed external sector policy underwent a paradigm shift with the adoption of the recommendations of the High Level Committee on Balance of Payments (Chairman: Dr. C. Rangarajan). The Report, of which I had the privilege of being Member-Secretary, articulated an integrated view of the issues and made specific recommendations on foreign currency reserves. The relevant extracts are:

“It has traditionally been the practice to view the level of desirable reserves as a percentage of the annual imports - say reserves to meet three months imports or four months imports. However, this approach would be inadequate when a large number of transactions and payment liabilities arise in areas other than import of commodities. Thus, liabilities may arise either for discharging short-term debt obligations or servicing of medium-term debt, both interest and principal. The Committee recommends that while determining the target level of reserve, due attention should be paid to the payment obligations in addition to the level of imports. The Committee, recommends that the foreign exchange reserves targets be fixed in such a way that they are generally in a position to accommodate imports of three months. (Paragraph 6.3)

In the view of the Committee, the factors that are to be taken into consideration in determining

the desirable level of reserves are: the need to ensure a reasonable level of confidence in the international financial and trading communities about the capacity of the country to honour its obligations and maintain trade and financial flows; the need to take care of the seasonal factors in any balance of payments transaction with reference to the possible uncertainties in the monsoon conditions of India; the amount of foreign currency reserves required to counter speculative tendencies or anticipatory actions amongst players in the foreign exchange market; and the capacity to maintain the reserves so that the cost of carrying liquidity is minimal.” (Paragraph 6.4)

With the introduction of market determined exchange rate as mentioned in the Reserve Bank’s Annual Report, 1995-96 a change in the approach to reserve management was warranted and the emphasis on import cover had to be supplemented with the objective of smoothening out the volatility in the exchange rate, which has been reflective of the underlying market condition.

Against the backdrop of currency crises in East-Asian countries, and in the light of country experiences of volatile cross-border capital flows, the Reserve Bank’s Annual Report 1997-98 reiterated the need to take into consideration a host of factors, but is noteworthy for bringing to the fore the shift in the pattern of leads and lags in payments/ receipts during exchange market uncertainties and emphasised that besides the size of reserves, the quality of reserves also assume importance. Highlighting this, the Report stated that unencumbered reserve assets (defined as reserve assets net of encumbrances such as forward commitments, lines of credit to domestic entities, guarantees and other contingent liabilities) must be available at any point of time to the authorities for fulfilling various objectives assigned to reserves.

As a part of prudent management of external liabilities, the Reserve Bank’s policy is to keep forward liabilities at a relatively low level as a proportion of gross reserves and the emphasis on prudent reserve management *i.e.*, keeping forward liabilities within manageable limits, was highlighted in the Reserve Bank’s Annual Report, 1998-99.

The Reserve Bank’s Annual Report, 1999-2000 stated that the overall approach to management of India’s foreign exchange reserves reflects the changing composition of balance of payments and liquidity risks associated with different types of flows and other requirements and the introduction of the concept of liquidity risks is noteworthy.

“The policy for reserve management is built upon a host of identifiable factors and other contingencies, including, *inter alia*, the size of the current account deficit and short term liabilities (including current repayment obligations on long term loans), the possible variability in portfolio investment, and other types of capital flows, the unanticipated pressures on the balance of payments arising out of external shocks and movements in repatriable foreign currency deposits of nonresident Indians.” (Paragraph 6.30)

While focusing on prudent management of foreign exchange reserves in recent years, the Reserve Bank’s Annual Report 2000-01 elaborated on ‘liquidity risk’ associated with different types of flows. The Report stated that with the changing profile of capital flows, the traditional approach of assessing reserve adequacy in terms of import cover has been broadened to include a number of parameters which take into account the size, composition, and risk profiles of various

types of capital flows as well as the types of external shocks to which the economy is vulnerable.

Governor Jalan's latest statement on Monetary and Credit Policy (April 29, 2002) provides, an up-to-date and comprehensive view on the approach to reserve management and of special significance is the statement : "a sufficiently high level of reserves is necessary to ensure that even if there is prolonged uncertainty, reserves can cover the "liquidity at risk" on all accounts over a fairly long period. Taking these considerations into account, India's foreign exchange reserves are now very comfortable." (Paragraph 23)... "the prevalent national security environment further underscores the need for strong reserves. We must continue to ensure that, leaving aside short-term variations in reserves level, the quantum of reserves in the long-run is in line with the growth of the economy, the size of risk-adjusted capital flows and national security requirements. This will provide us with greater security against unfavourable or unanticipated developments, which can occur quite suddenly." (Paragraph 24).

The above discussion points to evolving considerations and indeed a paradigm shift in India's approach to reserve management. The shift has occurred from a single indicator to a menu or multiple indicators approach. Furthermore, the policy of reserve management is built upon a host of factors, some of them are not quantifiable, and in any case, weights attached to each of them do change from time to time.

What is the Appropriate Level of Forex Reserves?

Basic motives for holding reserves do result in alternative frameworks for determining appropriate level of foreign reserves. Efforts have been made by economists to present an optimising framework for maintaining appropriate level of foreign reserves and one viewpoint suggests that optimal reserves pertain to the level at which marginal social cost equals marginal social benefit. Optimal level of reserves has also been indicated as the level where marginal productivity of reserves plus interest earned on reserve assets equals the marginal productivity of real resources and this framework encompasses exchange rate stability as the predominant objective of reserve management. Since the underlying costs and benefits of reserves can be measured in several ways, these approaches to optimal level provide ample scope for developing a host of indicators of appropriate level of reserves.

It is possible to identify four sets of indicators to assess adequacy of reserves, and each of them do provide an insight into adequacy though none of them may by itself fully explain adequacy. First, the money based indicators including reserve to broad money or reserves to base money which provide a measure of potential for resident based capital flight from currency. An unstable demand for money or the presence of a weak banking system may indicate greater probability of such capital flights. Money based indicators, however, suffer from several drawbacks. In countries, where money demand is stable and confidence in domestic currency high, domestic money demand tends to be larger and reserves over money ratios, relatively small. Therefore, while a sizable money stock in relation to reserves, *prima facie*, suggests a large potential for capital flight out of money, it is not necessarily a good predictor of actual capital flight. Money based indicators also do not capture comprehensively the potential for domestic capital flight. Moreover, empirical studies find a weak relationship between money based indicator and occurrence and depth of international crises.

Secondly, trade based indicators, usually the import-based indicators defined in terms of reserves in months of imports provide a simple way of scaling the level of reserves by the size and openness of the economy. It has a straightforward interpretation- a number of months a country can continue to support its current level of imports if all other inflows and outflows cease. As the measure focuses on current account, it is relevant for small economies, which have limited access and vulnerabilities to capital markets. For substantially open economies with a sizable capital account, the import cover measure may not be appropriate.

Thirdly, debt based indicators are of recent origin; they appeared with episodes of international crises, as several studies confirmed that reserves to short term debt by remaining maturity is a better indicator of identifying financial crises. Debt-based indicators are useful for gauging risks associated with adverse developments in international capital markets. Since short-term debt by remaining maturity provides a measure of all debt repayments to nonresidents over the coming year, it constitutes a useful measure of how quickly a country would be forced to adjust in the face of capital market distortion. Studies have shown that it could be the single most important indicator of reserve adequacy in countries with significant but uncertain access to capital markets.

Fourthly, more recent approaches to reserve adequacy have suggested a combination of current-capital accounts as the meaningful measure of liquidity risks. Of particular interest, is the *Guidotti Rule*, which has received wide appreciation from many central bankers including Alan Greenspan, postulates that the ratio of short term debt augmented with a projected current account deficit (or another measure of expected borrowing) could serve useful an indicator of how long a country can sustain external imbalance without resorting to foreign borrowing. As a matter of practice, the Guidotti Rule suggests that the countries should hold external assets sufficient to ensure that they could live without access to new foreign borrowings for up to twelve months. This implies that the usable foreign exchange reserves should exceed scheduled amortisation of foreign currency debts (assuming no rollover during the following year).

Alan Greenspan suggests a *Liquidity at 'Risk' Rule* that takes into account the foreseeable risks that a country could face in the event of (a) near absence of a purely non-interventionist exchange rate policies and (b) cost-benefit trade-off in the quantity of reserve accumulation. Accordingly, a country's liquidity position could be calculated under a range of possible outcomes for relevant financial variables such as exchange rate, commodity prices, credit spreads, *etc.* While the concept of 'Liquidity at Risks' has been broadly discussed at different fora, it appears that no specific methodology has been outlined. It has been left to institutions and countries to develop their own approaches.

Level of Forex Reserves in India

The Indian approach to determining adequacy of forex reserves has been evolving over the past few years, especially, since the pioneering Report of the High Level Committee on Balance of Payments, culminating in Governor Jalan's exposition of the combination of global uncertainties, domestic economy and national security considerations in determining liquidity at risk and thus assessing reserve adequacy. It is appropriate to submit stylised facts in relation to some of the

indicators of reserve-adequacy described here without making any particular judgment about adequacy.

The foreign exchange reserves include three items; gold, SDRs and foreign currency assets. As on May 3, 2002, out of the US\$ 55.6 billion of total reserves, foreign currency assets account the major share at US\$ 52.5 billion. Gold accounts for about US\$ 3 billion. In July 1991, as a part of reserve management policy, and as a means of raising resources, the Reserve Bank temporarily pledged gold to raise loans. The gold holdings, thus have played a crucial role of reserve management at a time of external crisis. Since then, Gold has played passive role in reserve management.

The level of foreign exchange reserves has steadily increased from US\$ 5.8 billion as at end-March, 1991 to US\$ 54.1 billion as at end-March 2002 and further to US\$ 55.6 billion as at May 3, 2002. The traditional measure of trade based indicator of reserve adequacy, *i.e.*, the import cover (defined as the twelve times the ratio of reserves to merchandise imports) which shrank to 3 weeks of imports by the end of December 1990, has improved to about 11.5 months as at end-March 2002.

In terms of money-based indicators, the proportion of net foreign exchange assets of the Reserve Bank (NFA) to currency with the public has sharply increased from 15 per cent in 1991 to 109 per cent as at end-March 2002.

The proportion of NFA to broad money(M3) has increased by more than six fold; from 3 per cent to 18 per cent.

The debt-based indicators of reserve adequacy show remarkable improvement in the 1990s. The proportion of short term debt (*i.e.*, debt obligations with an original maturity up to one year) to foreign exchange reserves has substantially declined from 147 per cent as at end-March 1991 to 8 per cent as at end-March 2001. The proportion of volatile capital flows defined to include cumulative portfolio inflows and short term debt to reserves has lowered from 147 per cent in 1991 to 58.5 per cent as at end-March 2001. As part of sustainable external debt position, the short term debt component has decreased from 10 per cent as at end-March 1991 to 3 per cent as at end-March 2001. Similarly, the size of debt service payments relative to current receipts has decreased from 35 per cent in 1991 to 16 per cent in 2001.

Management of International Reserves

In the recent years, for several reasons, increasing attention is being paid to management of international reserves. First, advent of the Euro as an alternate currency to US dollar; second, movement of many central banks out of gold; third, changes in exchange rate regimes; fourth, changing views on reserve adequacy and its role in crisis prevention; and fifth, operational use of “reserve targets” in calculating financing gaps by IMF. The attention to the subject is evidenced by increasing emphasis on transparency, accountability in various fora, and more recently, the issue of IMF guidelines on the subject.

Operationally, reserve management is a process that ensures that adequate official public sector

foreign assets are readily available to and controlled by the authorities for meeting a defined range of objectives for a country. A reserve management entity is normally made responsible for the management of reserves and associated risks. Invariably, the reserve management entity is the central bank and hence the objectives of reserve management tend to be critical as they would encompass the objectives of the monetary authority and the objectives of a portfolio manager or the custodian of reserves. As a monetary authority, a central bank's primary objective is to ensure macroeconomic financial stability in general and external stability in particular. As a custodian, the central bank's main objectives are to ensure liquidity, safety and yield on deployment of reserves.

In considering management of reserves, the benefits and costs of holding reserves are constantly assessed. On the benefits, recent international financial crises have shown that holding and managing sufficient reserves and disclosing adequate information to markets helps a country to prevent external crises, especially those stemming from the capital account. The growing appreciation of the role of reserves in crises prevention and as a buffer to manage exchange market pressures has given reserve management a more central role, now than before, in national economic policies. Maintaining high level of reserves to tide over external shocks, however, involves opportunity cost. The opportunity cost of holding reserves is the foregone investment because resources have been used to purchase reserves instead of increasing domestic capital. The marginal productivity of domestic capital is the opportunity cost of holding reserves and reserves management seeks to minimize the opportunity costs against the benefits that accrue from holding reserves.

The objectives of reserve management vary across countries, and a recent survey of reserve management practices of select countries (IMF guidelines, 2001) provide good insights on the subject. First, most countries hold reserves to support monetary policy. While ensuring liquidity in foreign exchange market to smooth out undue short-term fluctuations in exchange markets constitutes the primary objective, some countries take a cautious approach to intervention. Smaller countries, hold reserves mainly for consideration of transaction motives to meet external payment imbalances as well as a store of wealth. Precautionary motive of holding reserves to mitigate adverse external shocks is implicit in most countries' objectives though among a few, it finds explicit mention. Few countries explicitly use international reserves as the backing for monetary base and to maintain the stability and integrity of the monetary and financial system.

From a policy perspective, the objective of holding reserves to support monetary policy is common to most countries and the objective of holding reserves in regard to many emerging economies is primarily to maintain international confidence about its short-term payment obligations as well as confidence in monetary and financial policies.

Secondly, most countries have informal coordination between debt management and reserve management policies. As part of informal coordination, most countries take into account external debt indicators, particularly the maturity composition of short-term and long-term debt, as part of reserve management.

Thirdly, in regard to transparency and disclosure standards, many countries adhere to the IMF's Special Data Dissemination Standards (SDDS) requirement. Most countries publish data on

external debt and reserves on an annual basis in either their central bank annual reports or other reports of Government.

Fourthly, liquidity and safety (low risks) prevail upon reserve management entities in most countries as part of objective of reserve management. The yield objective is secondary to most countries in reserve management.

Fifthly, most countries use benchmarks for managing currency composition of reserves though information to the public about the benchmarks for the underlying currency composition of reserves is generally not made available. Information about the underlying norms for adopting the benchmarks are, however available in a number of countries.

Management of Forex Reserves in India

In India, legal provisions governing management of forex reserves are set out in the RBI Act and Foreign Exchange Management Act, 1999 and they also govern the open market operations for ensuring orderly conditions in the forex markets, the exercise of powers as a monetary authority and the custodian in regard to management of foreign exchange assets.

In practice, holdings of gold have been virtually unchanged other than occasional sales of gold by the Government to the Reserve Bank. The gold reserves are managed passively. Currently, accretion to foreign currency reserves arises mainly out of purchases by the Reserve Bank from the Authorised Dealers (*i.e.* open market operations), and to some extent income from deployment of forex assets held in the portfolio of the Reserve Bank (*i.e.* reserves, which are invested in appropriate instruments of select currencies). The RBI Act stipulates the investment categories in which the Reserve Bank is permitted to deploy its reserves. The aid receipts on Government account also flow into reserves. The outflow arises mainly on account of sale of foreign currency to Authorised Dealers (*i.e.* for open market operations). There are occasions when forex is made available from reserves for identified users, as part of strategy of meeting lumpy demands on forex markets, particularly during periods of uncertainty. The net effect of purchases and sale of foreign currency is the most determining one for the level of forex reserves, and these include such sale or purchase in forward markets (which incidentally is very small in magnitude).

While operationally the level of reserves is essentially a result of sale and purchase transactions, the level is also one of the objectives of exchange rate policy, and the issue needs to be considered in the overall context of exchange rate management. The exchange rate is determined by the market, *i.e.* forces of demand and supply. The objectives and purposes of exchange rate management are to ensure that economic fundamentals are reflected in the external value of the rupee as evidenced in the sustainable current account deficit. Subject to this general objective, the conduct of exchange rate policy is guided by three major purposes: first, to reduce excess volatility in exchange rates, while ensuring that the movements are orderly and calibrated; second, to help maintain an adequate level of foreign exchange reserves and third, to help eliminate market constraints with a view to the development of a healthy foreign exchange market. Basically, the policy is aimed at preventing destabilising speculation in the market while facilitating foreign exchange transactions at market rates for all permissible purposes. The

Reserve Bank makes sales and purchases of foreign currency in the forex market, basically to even out lumpy demand or supply in the thin forex market; large lumpiness in demand is mainly on account of oil imports, leads and lags and external debt servicing on Government account. Such sales and purchases are not governed by a predetermined target or band around the exchange rate.

The essence of portfolio management of reserves by the Reserve Bank is to ensure safety, liquidity and optimisation of returns. The reserve management strategies are continuously reviewed by the Reserve Bank in consultation with Government. In deploying reserves, attention is paid to the currency composition, duration and instruments. All of the foreign currency assets are invested in assets of top quality while a good proportion should be convertible into cash at short notice. The counterparties with whom deals are conducted are also subject to a rigorous selection process. In assessing the returns from deployment, the total return (both interest and capital gains) is taken into consideration. Circumstances such as lumpy demand and supply in reserve accretion are countered through appropriate immunisation strategies in deployment. One crucial area in the process of investment of the foreign currency assets in the overseas markets, relates to the risk involved in the process *viz.* credit risk, market risk and operational risk. While there is no set formula to meet all situations, the Reserve Bank utilises the accepted portfolio management principles for risk management.

Forex Reserves and Quasi-fiscal Activities

Central Banks perform a number of Quasi Fiscal Activities (QFAs). QFAs can be defined as an operation or measure carried out by a central bank with an effect that can, in principle, be duplicated by budgetary measures in the form of an explicit tax, subsidy or direct expenditure and that has or may have an impact on the financial operations of the central bank. In a broader sense, QFAs also include certain activities, such as, those relating to exchange rates, open market operations and cash reserve ratio, which have fiscal implications but cannot be obviously duplicated in terms of explicit taxes and subsidies in the budget. Central banks' QFAs broadly arise from their role as a regulator of the financial system, as a banker to the Government, and as a regulator of the foreign exchange system.

QFAs of the central bank as a regulator of the foreign exchange often pertain to exchange rate and sterilized operations to offset the effect of unusual cross border capital flows.

Impact of QFAs is difficult to quantify. First, the impact of QFAs is merged with the impact of other operations and thereby is reflected in the consolidated picture in the balance sheet of the central bank. It has not been possible to separate in the balance sheets the impact emerging exclusively from the QFAs from other operations. Secondly, market clearing rates cannot be accurately predicted in an administered interest rate regime and therefore, it would be difficult to estimate the element of subsidy/tax involved in such operations. Thirdly, the QFAs are performed on an ongoing basis covering innumerable transactions and, therefore, their measurement is virtually impossible. Fourthly, the impact of certain QFAs like credit ceiling and exchange related measures are not certain.

On a very general plane it can be argued that sterilised intervention by the central bank to contain

the liquidity impact of capital flows often involve a trade-off between low return assets and high return assets as far as the central bank is concerned. Earning from the deployment of foreign exchange is understandably lower than the interest loss on account of open market sale of government securities essentially due to interest rate differentials.

Communications Policies

Issues in transparency and disclosure constitute an important aspect of reserve management, within the broader framework of monetary, fiscal and financial policies. Thus, the policy as well as all relevant information are articulated through a variety of means from time to time, the most significant being the Monetary and Credit Policy Statements by Governor, RBI. The speeches of Governor and Deputy Governors are important sources of policy analysis, actions and intentions. The Annual Reports of the Reserve Bank provide authentic version of RBI's perspective as approved by its Board. The Report on Currency and Finance provides research output from the professionals in the Reserve Bank. The periodical publications, Press Releases and Discussion Papers are also important sources of information.

The Reserve Bank has been providing, on a regular basis, appropriate data directly relating to foreign exchange market operations. The Reserve Bank publishes daily data on exchange rates, forward premium, foreign exchange turnover etc. in the Weekly Statistical Supplement (WSS) of the Reserve Bank Bulletin with a time lag of one week, the movement in foreign exchange reserves of the Reserve Bank on a weekly basis are also published. The Reserve Bank publishes data on nominal effective exchange rate (NEER) and real effective exchange rate (REER), RBI's purchases and sales in the foreign exchange market along with outstanding forward liabilities on reserves, etc., in the RBI Bulletin with a time lag of one month. A 5-country and a 36-country trade based NEER and REER is published in the Reserve Bank Bulletin. The Reserve Bank has all along, been ahead of many developing and industrial country central banks, been publishing the size of its gross intervention (purchase and sale) per month and its net forward liability position. The daily reference rate of US dollar and Euro as well as the middle rates for four major currencies, viz., US dollar, GBP, Euro and Japanese yen are also available in the RBI website.

As a part of the Special Data Dissemination Standards, IMF prescribed a data template for disclosure of the International reserves and foreign currency liquidity in respect of countries, which have subscribed to SDDS. India's approach to reserve management closely follows international standards and codes, especially with regard to transparency, disclosure, accountability and data dissemination of foreign reserves. India is among the 49 countries, which have adopted the SDDS template for publication of detailed data on forex reserves. The data template provides some information on a number of parameters including currency composition, deployment of forex reserves and forward positions. These data are made available on monthly basis in the RBI website as well as the country section of the IMF SDDS site, from the month of October, 2001.

Issues

It is proposed to consider five sets of issues covering policy matters; adequacy; costs and

benefits; management aspects; and dissemination of information.

Policy Matters

First, a critical issue is whether all the external assets are readily available for use. The management of foreign currency assets in India ensures such availability though in respect of a large part of gold which is a small part of official reserves, the quality is not in a form that is readily accepted in international financial markets. There is no likelihood of use of gold in reserves in the foreseeable future. Nevertheless, India has devised mechanisms by which a part of the gold holdings of the Reserve Bank could be converted into usable foreign currency. An incidental issue relates to the policy on enhancement or otherwise of gold component in the foreign exchange reserves and the way it is managed. The proportion of gold in our reserves is coming down in view of accretion to foreign currency reserves and the policy in regard to both holdings and management has been passive.

Secondly, an issue common to many central banks is the advantage in clearly spelling out policy objectives in regard to forex reserves. The mandate as well as the practice in India clearly indicate that maintaining stability is an overriding objective but the detailing of objectives has to reckon the changing circumstances. As explained in the presentation on evolution of policy in India, a very dynamic view, based on multiple indicator approach has been adopted. In this background, the practice of detailing of the context and objectives as is being done in the recent Monetary and Credit Policy Statements of Governor Jalan appears to be very appropriate; since such statements indicate the objectives *ex ante*, supplementing the earlier practice of reporting the policy and management, *ex post* in the Annual Report. The major objective as articulated in recent Policy Statements appears to be to infuse and sustain confidence in the financial markets on our liquidity position and operate therein as appropriate, with a view to containing volatility in forex markets and contributing to financial stability.

Adequacy or Appropriate Level

First, the dominant concern of policy is maintaining confidence in our ability to provide liquidity and, there is no precise way of defining at what level the confidence factor would be undermined. In practice, policy makers should make judgements on (a) the difficulties in reviving confidence once it starts getting eroded; (b) the focus of market participants on incremental changes more than total size; and (c) demonstration of willingness to use the reserves when warranted without committing to do so and getting locked into a straight jacket situation. The issue of managing the level of reserves thus becomes, in many ways, as important as the level itself.

Secondly, there are judgements involved in assessing whether the level of forex reserves provides comfort in the face of some weakness in domestic fundamentals. Such a comfort will perhaps not be forthcoming if the current account deficit is not sustainable or exchange rate is highly overvalued. For example, it has been argued that high level of reserves could, under some circumstances, give comfort against weaknesses in the financial sector or high public debt or encourage laxity in financial and fiscal policies.

Thirdly, many indicators of adequacy of reserves do, to a significant extent, capture the potential for drawdown by non-residents while the factors governing drawdown by residents through capital flight are not easily assessed.

Hence, the domestic perceptions of level of reserves add to the comfort in withstanding drawdown through capital flight, and experience indicates that crisis of confidence in currency often originates among residents.

Fourthly, the leads and lags in trade and even invisibles can significantly influence supply and demand in markets, particularly when markets are not fully developed. How should reserve adequacy be assessed with reference to prevalence of such leads and lags? If the leads and lags can be demonstrably impacted by discretionary administrative measures, the amount of reserves needed to moderate such leads and lags may be reduced.

Fifthly, where there is lumpiness in demand and supply as is the case in India, the forex reserves have to be used for meeting the temporary mismatches in forex markets. In such a situation, the incremental changes in the level of forex reserves may also be correspondingly large. There is a tendency among the analysts and media to react negatively to erosion in a more intensive way and positively to addition to reserves in a less intensive way. A higher level of reserves may possibly give greater scope for changes by making them appear marginal.

Sixthly, it was widely felt that contingent credit lines from private sector could be negotiated and thus actual level of forex reserves to be maintained may be correspondingly brought down. The Contingency Credit Line (CCL) from the International Monetary Fund could also have similar effect. India had not accessed this facility, and in any case, experience of other countries has not been very satisfactory on this.

Seventhly, bilateral or multilateral relations at Government level do provide some indications, though on a judgemental basis, of the forex resources that may be readily accessed in case of difficulties. In other words, geopolitical factors do give different levels of comfort of ready availability of forex resources from official sector through bilateral or multilateral channels. India has to constantly make and review its assessment of such access, noting that adequacy of forex reserves needs to be assessed with reference to changing perceptions of the economy in the market place as well as among Governments or the official sector. In brief, a practical issue is, how much of judgemental, non-economic, and non-market considerations are relevant in assessing adequacy of forex reserves?

Cost and Benefits

First, a major question on the level of reserves relates to the scope for measuring overall economic costs and benefits of holding reserves. While concepts of marginal social costs, or opportunity costs are useful for analytical purposes, computation is difficult though assessments are not impossible.

Second, if it is assumed that the direct financial cost of holding reserves is the difference between interest paid on external debt and returns on external assets in reserves, such costs have

to be treated as insurance premium to assure and maintain confidence in the availability of liquidity. The benefits of such a premium are not merely in terms of warding off risks but also in terms of better credit rating and finer spreads that many private participants may get while contracting debt. The costs of comfort level in reserves are often met by some benefits, but both are difficult to measure, in financial or economic, and in quantitative terms.

Third, if the level of reserves is considered to be significantly in the high comfort zone, it may be possible to add greater weight to return on forex assets than on liquidity thus reducing net costs if any, of holding reserves.

Fourth, such calculations of costs of holding reserves by comparing return on forex reserve with costs of external debt may imply that addition to reserves has been made by contracting additional external debt. In India, almost the whole of addition to reserves in the last few years has been made while keeping the overall level of external debt almost constant.

Fifth, the costs and benefits of adding or not adding to reserves should be assessed with a medium-term view. For example, in case there is uncertainty about capacity to acquire needed reserves at a later date, a country may prefer to acquire them sooner than later. Indeed, an inter-temporal view of the adequacy as well as costs and benefits of forex reserves may be in order.

Finally, it is necessary to assess the costs of not adding to reserves through open market operations at a time when the capital flows are strong. In other words, the costs and benefits of forex reserves may have something to do with the open market operations, both in money and forex markets than merely the level itself. In brief, the costs and benefits arise as much out of open market operations of the central bank as out of management of levels of reserves.

Management Aspects

First, sound legislative framework and institutional arrangements are fully in place, with the Reserve Bank being the owner and custodian of reserves, but operating in consultations with Government as necessary. There is no particular need for any changes in this regard.

Second, the Reserve Bank does not have the legal authority to borrow or draw against external credit lines from the non-official sector. Should there be enabling changes in the law? Similarly, there are severe legal limitations on active management of gold reserves to optimise returns and should they be relaxed? Deep seated conservatism is reflected in hesitancy to alter the legislative framework.

Thirdly, there is close co-ordination between the Reserve Bank and Government with regard to magnitudes, composition and maturities of external debt, both in official and private sector. Such co-ordination as it exists today is clearly enhancing the effectiveness of reserve management.

Fourthly, co-ordination between monetary, exchange rate and reserve management is extremely important and it is ensured operationally and articulated publicly through the Monetary and Credit Policy Statements, in a comprehensive manner.

Random Thoughts

First, there are important factors that contributed to the comfortable accretion to reserves in the last five years but often go unnoticed in any review of external sector policies in India. (a) The liberalisation of imports of gold has brought a large segment of unofficial imports and forex market into the official sector and reduced large transaction costs incurred in foreign exchange. In fact, meaningful development of forex markets was enabled by this measure and consequently effectiveness of intervention in forex markets enhanced. (b) Furthermore, abolition of automatic monetisation, and marketisation of Government borrowings provided opportunities to sterilise the capital inflows. In other words, large capital flows could be absorbed into the forex reserves without seriously imparting volatility in forex or money markets because of simultaneous actions taken to develop these markets. In fact, there are occasions in recent years when the Reserve Bank converted non-marketable government securities (*ad-hoc* treasury bills) in its portfolio into marketable ones by appropriate arrangements with government, to enhance its capacity to conduct open market operations. The criticality of the state of financial markets in the management of capital flows and forex reserves needs to be appreciated.

Second, it is justifiable to ask about the prospects for reserve levels increasing in future. It must be recognised that two factors are responsible for significant addition to reserves in the recent past *viz.*, a far lower level of current account deficit (CAD) than the expected sustainable level of about 2 per cent of Gross Domestic Product (GDP) each year, and continued inflow of capital especially of non-debt creating flows as more or less planned. In this background, financing of an average CAD of about 2.8 per cent of GDP as projected in the approach paper to the Tenth Five Year Plan, would require a minimum of two-fold increase in the size of annual capital flows from the present level. As indicated in the RBI Annual Report 2000-01, this would imply that the net capital flows would have to increase from about US\$ 10 billion in the initial year of the Tenth Plan to about US\$ 40 billion in the terminal year or an average of US\$ 20 billion per annum during the Tenth Plan period.

From a policy perspective, there are two facets of this coordination. To mobilise capital flows of this order, international investor confidence is critical. In order to maintain international confidence in the ability of the country's payment position, accumulation of reserves at a higher level is an important prerequisite. Moreover, in the event of capital flows of this order, the concern would be on absorption of such flows and its associated monetary impact. Policy coordination has to be put in place to synchronise the sustainable current account deficit with sustainable economic growth and maintain adequate forex reserves

Third, in this regard, an interesting issue is whether there are circumstances when external borrowings need to be resorted to, merely to add to forex reserves. Review of literature certainly provides justification for such actions, especially when the issue of restoring or maintaining confidence in credit rating in external debt is involved. Similarly, such actions may be needed if sentiment in market needs to be influenced by the process. Finally, given the overall impact of increases in both forex reserves and external debt, it is possible to visualise circumstances when such operations are optimal.

Fourth, are there alternatives to managing liquidity through maintaining reserves? In this regard,

further explorations on the concept of “national liquidity” articulated in BIS Policy Papers No. 8, September 2000 appear to be useful. Recent crises have shown that countries can be faced with liquidity problems not only because of the foreign assets and liabilities of the Government and central bank, but also because of the foreign currency liabilities of the banks and even the corporate sector. A crucial difference between domestic and foreign currency debt is that the authorities can provide virtually unlimited domestic currency liquidity, but are tightly constrained in their provision of foreign currency liquidity. This has led to consideration of a broad concept of “national liquidity”, though the relevance of a national balance sheet for policy purposes is controversial. One polar view is that the external deficits and debt that are the result of decisions of the private sector – and not due to government borrowing – are of little concern to policymakers. Such a view may be taken by industrial countries since their access to international liquidity at zero risk spreads is normally assured. However, for emerging economies there are some arguments in favour of national balance sheet and national liquidity. Large net borrowings by some entities in the economy tend to increase country risk premia and thus raise the interest rate charged to all borrowers. One solution that has been suggested to counter any such externalities would be to internalise them through some form of tax on foreign borrowing or to impose some controls. Furthermore, the exchange rate would overshoot if a country’s access to capital markets dried up and it were suddenly forced to repay its foreign currency obligations, and this would cause a deep recession. Private sector external debt decisions have, in fact, impinged on fiscal management and balance sheets of official sector in several ways in the context of recent crises. Thus, an important policy aspect is the question of whether and how the official sector should take account of the maturity and currency mismatches of the private sector in structuring its own foreign assets and liabilities.

The concept of a national balance sheet, of course, raises several tricky questions relating to private sector foreign assets offsetting liabilities, and the extent to which their foreign exchange exposures fully capture vulnerability. In spite of all these complexities that are involved in the national balance sheet approach, there is merit in exploring such an approach to provide guidance to policy relating to reserves, both in terms of adequacy and management.

Finally, an idea which received some attention recently (March 2002) during the gathering on ‘Finance for Development’ in Monterrey, Mexico, is that, instead of holding their reserves in dollars, a new form of global money *viz.*, ‘global greenbacks’ could be issued, which countries could hold in reserves. The amount of money held by countries in ‘global greenbacks’ could be given to developing countries to finance their development programmes as well as global public goods like environmental projects, health initiatives, humanitarian assistance and so on.

For countries that receive less than the amount that they need to put into reserves, the new ‘global money’ would go into reserves freeing dollars that these countries would otherwise set aside. Countries that receive more than they must put into reserves could exchange the new money for conventional currencies. Eventually, all the new money will find its way into reserves, which in effect represent a commitment by countries to help each other in times of trouble. It has been argued that the greenbacks proposal envisages flow of funds to poor countries according to their need while contributing to global economic growth, stability and equity. Perhaps, as part of ongoing exercises relating to international financial architecture, this idea deserves to be deliberated.

Conclusion

To conclude, the theory and practice of foreign exchange reserves is as complex as any other contemporary economic issue. While it is not easy to provide answers to all the questions raised in the recent debate on foreign exchange reserves management policy, we in India have had such a long journey from the agony of 1991 to the comfort of today and this has come about only by dint of hard work and implementation of prudent policies which has made India, a respected model in the emerging world.

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