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India

Introduction

597. The Indian approach to determining adequacy of foreign exchange reserves has evolved over the past few years. Various factors, ranging from the pioneering Report of the High Level Committee on Balance of Payments (Chairman: Dr. C. Rangarajan) to 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 (Paragraphs 23 and 24 of Statement on Monetary and Credit Policy, April 29, 2002), have contributed toward the process of development of such an approach.

598. The three components of India's foreign exchange reserves include Gold, Special Drawing Rights (SDRs), and Foreign Currency Assets (FCAs). The last item, however, accounts for the major portion. As of September 6, 2002, out of the US$62.1 billion of total reserves, India's FCAs stood at $58.8 billion; gold accounted for about $3.2 billion, the rest being SDRs. In July 1991, as a part of reserve management policy, and as a means of raising resources, the Reserve Bank of India (RBI) temporarily pledged gold to raise loans. The gold holdings thus played a crucial role in reserve management at a time of external crisis. Since then, gold has played a passive role.

599. In quantitative terms, the level of foreign exchange reserves has steadily increased from $5.8 billion as of end-March 1991 to $54.1 billion as of end-March 2002 and further to $62.1 billion as of September 6, 2002.

Developing a Sound Governance and Institutional Framework

Reserve management objectives

600. India's objectives of holding reserves, in broader terms are:

- maintaining confidence in monetary and exchange rate policies;
- enhancing capacity to intervene in foreign exchange markets;
- limiting external vulnerability by maintaining foreign currency liquidity to absorb shocks during times of crisis;
- providing confidence to the markets, especially credit rating agencies, to the effect that external obligations can always be met, thus reducing the overall costs to the economy or the market participants; and
- adding to the comfort of the market participants, by demonstrating the backing of domestic currency by external assets.

601. At a formal level, the objective of reserve management in India could be found in the Reserve Bank of India Act, where the relevant part

of the Preamble reads, "to use the currency system to the country's advantage and with a view to securing monetary stability." Monetary stability, in this statement, may be interpreted as internal as well as external stability, implying a stable exchange rate as one of the overall objectives 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 the economy in general, could be derived in the process of reserve management. This warrants taking a very dynamic view on the country's requirements of reserves and how best to meet such requirements.

Legal framework

602. In India, the RBI Act of 1934 contains the enabling provisions for the RBI to act as the custodian of foreign exchange reserves, and manage reserves within the defined objectives. The powers available to the RBI as custodian of foreign exchange reserves are enshrined in the Preamble to the Act. The "reserves" refer to both foreign exchange reserves in the form of gold and foreign securities and domestic reserves in the form of "bank reserves." The RBI Act also broadly indicates the desirable composition of reserves, minimum reserve requirements, and the instruments in which the country's reserves could be deployed.

603. Specifically, subsections 17(12), 17(12A), 17(13), and 33(1) of the RBI Act of 1934 define the scope of investment of foreign exchange reserves. The provisions, by way of severe restrictions on the credit quality of counterparties/securities in the Act, reflect the RBI's utmost concern about the safety of foreign exchange reserves.

604. In brief, the law broadly permits the following investment categories:

(i) Deposits with other central banks and the Bank for International Settlements (BIS).

(ii) Deposits with foreign commercial banks.

(iii) Debt instruments representing sovereign/sovereign-guaranteed liability (with residual maturity not exceeding 10 years).

(iv) Other instruments/institutions as approved by the Central Board of Directors of the central bank.

Institutional framework

605. The decisions on currency composition and asset allocations are taken by the Reserve Bank in consultation with Government of India. Within the RBI, while the major decisions relating to currency/investment are made by a Strategy Committee headed by the Governor/Deputy Governor in charge of foreign exchange reserve management, the Department of External Investments and Operations is given some flexibility with regard to currency composition to take advantage of market trends. Further, within the RBI, a "Financial Markets Committee," comprising heads of departments responsible for domestic debt management, reserve management, and monetary policies, facilitates day-to-day coordinated administering of policies.

Transparency and accountability

606. On public disclosure, the RBI has been constantly endeavoring to ensure compliance with best standards of transparency, in line with major international central banks/reserve management authorities. Within the broader framework of monetary, fiscal, and financial policies, areas relating to transparency and disclosure constitute important aspects of reserve management. The policy on reserve management as well as all relevant information are articulated through a variety of means from time to time, the most significant being the half-yearly Monetary and Credit Policy Statements by the Governor of the RBI. The speeches of the Governor and Deputy Governors are important sources of policy analysis, actions, and intentions. The Annual Reports of the RBI provide an authentic version of RBI's perspective as approved by its Board. Periodical publications, Press Releases, and Discussion Papers of the RBI provide additional important sources of information.

607. The RBI has also been providing, on a regular basis, appropriate data relating to foreign exchange market operations. The RBI publishes

daily data on exchange rates, forward premiums, and foreign exchange turnover and on a weekly basis the movement in foreign exchange reserves, in the Weekly Statistical Supplement (WSS) of the *RBI Bulletin*. 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 positions, are published in the *RBI Bulletin* with a time lag of one month.

608. The RBI has all along been ahead of central banks of many developing and industrial countries in regard to publishing details on the size of its gross foreign exchange market intervention (purchase and sale) and its net forward position. The daily reference rate of U.S. dollars and euros as well as the middle rates for four major currencies, namely, U.S. dollars, pounds sterling, euros, and Japanese yen are made available by the RBI website.

609. As a part of the Special Data Dissemination Standards (SDDS), the IMF has prescribed a data template for disclosure of international reserves and foreign currency liquidity of countries that have subscribed to SDDS. India is among the 49 countries that have adopted the SDDS template for publication of detailed data on foreign exchange reserves. The data template provides information on a number of parameters, including currency composition (SDR and other currencies), deployment of foreign exchange reserves, and forward position. These data are made available on a monthly basis, since October 2001, both through the RBI and IMF (SDDS) websites.

Principles, Policies, and Practices of Reserve Management

Reserve management operations

610. Currently, accretion to foreign currency reserves arises mainly out of purchases by the RBI from Authorized Dealers. In addition, there is income from deployment of foreign exchange assets held in the portfolio of the RBI. Aid receipts on government accounts also flow into reserves. Outflow of reserves arises mainly on account of sale of foreign currency to Authorized Dealers. There are occasions when foreign exchange is made available from reserves for identified users, as part of a strategy of meeting lumpy demand for foreign exchange. The net effect of purchases and sales of foreign currency is the major determinant of the level of foreign exchange reserves. The sales or purchases also include those in forward markets, although such transactions are of a very small magnitude.

611. Decisions involving currency composition and the maturity pattern of the investments are driven by broad parameters of safety, liquidity, and profitability. The choice of the highest possible quality investment instruments and explicit constraints on critical portfolio variables, such as limits on various securities, currencies, counterparties, and sovereigns form the basic elements of reserve management. Transactions are put through with counterparties, approved for the purpose. Counterparties could be banks, subsidiaries of banks, or security houses. Such counterparties are approved by the RBI, taking into account their international reputation and track record apart from factors such as size, capital, rating, financial position, and service provided by them. While investments in securities are restricted to sovereign and sovereign-guaranteed instruments, the residual maturity of these instruments cannot exceed 10 years. A good percentage of reserves is invested in the money market, including deposits with top-notch international commercial banks. Investments in new products/markets are deliberated upon within the Department of External Investments and Operations, by its "Investment Committee," which meets at the start of every week before appropriate approvals are sought.

612. In practice, holdings of gold have been virtually unchanged and gold reserves are managed passively.

Evolution of reserve management policy in India

613. 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 RBI's

Annual Report 1990–91 stated that the import cover of reserves shrank to 3 weeks of imports by the end of December 1990. Thus, the emphasis on import cover constituted the primary concern, say, until 1993–94.

614. The approach to reserve management as part of exchange rate management and, indeed, external sector policy underwent changes with the adoption of the recommendations of the High Level Committee on Balance of Payments (Chairman: Dr. C. Rangarajan) in 1992. The focus in deciding on the level of reserves was in fact shifted to ensuring a reasonable level of confidence in the international financial and trading communities in general and a plethora of factors that contribute to such confidence in particular. The extract given below provides evidence of this shift in the approach.

> "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)

615. 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 honor 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)

616. As mentioned in the RBI's Annual Report, 1995–96, with the introduction of the market-determined exchange rate, a further change in the approach to reserve management was warranted and the emphasis on import cover was supplemented by the objective of smoothing out the volatility in the exchange rate.

617. Against the backdrop of currency crises in East Asian countries in 1997 and in light of country experiences of volatile cross-border capital flows, it was felt that there was need to take into consideration a host of factors, including the shift in the pattern of leads and lags in payments/receipts during exchange market uncertainties. The RBI Annual Report, 1997–98, emphasized that besides the size of reserves, the quality of reserves also assumed importance. Thus, 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) were required to be available at any point of time to the authorities for fulfilling various objectives assigned to reserves.

618. As regards management of external liabilities, the policy of the RBI to keep forward liabilities at a relatively low level as a proportion of gross reserves and the emphasis on prudent reserve management were highlighted in the RBI's Annual Report, 1998–99.

619. The overall approach to management of India's foreign exchange reserves had undergone a further change during 1999–2000, reflecting the changing composition of balance of payments and liquidity risks associated with different types of flows as elaborated in the RBI Annual Report, 1999–2000. This is evident from the extract as below:

> "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 for-

eign currency deposits of non-resident Indians." (Paragraph 6.30)

620. In recent years, while focusing on prudent management of foreign exchange reserves, there has been an emphasis on "liquidity risk" associated with different types of flows. In this context, the traditional approach of assessing adequacy of reserves in terms of import cover has been broadened to include a number of parameters that take into account the size, composition, and risk profiles of various types of capital flows, as well as external shocks to which the economy is vulnerable.

621. Governor Jalan's statement on Monetary and Credit Policy (April 29, 2002) provides an up-to-date and comprehensive view on the approach to reserve management:

> "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 unfavorable or unanticipated developments, which can occur quite suddenly." (Paragraph 24)

622. The above discussion points to evolving considerations and indeed a paradigm shift in India's approach to reserve management. The shift has been from a single indicator to a multiple indicators approach.[36]

623. Adequacy of India's foreign exchange reserves at present could, however, be broadly assessed in terms of various indicators as described below:

- In terms of the traditional **trade-based indicator** of reserve adequacy, i.e., the import cover (defined in terms of reserves in months of imports). While India's foreign exchange reserves could cover only 3 weeks' of imports as of end-December 1990, the position improved to about 11.5 months as of end-March 2002;
- In terms of **money-based indicators**, the proportion of net foreign exchange assets of RBI to currency with the public sharply increased from 15 percent in 1991 to 109 percent as of end-March 2002 and the proportion of net foreign assets (NFA) to broad money (M3) increased more than six-fold, from 3 percent to 18 percent, during the same period;
- **Debt-based indicators** of reserve adequacy showed remarkable improvement in the 1990s and the proportion of short-term debt (i.e., debt obligations with an original maturity up to one year) to foreign exchange reserves substantially declined from 147 percent as of end-March 1991 to 8 percent as of end-March 2001, whereas the proportion of volatile capital flows (defined to include cumulative portfolio inflows and short-term debt) to reserves decreased from 147 percent in 1991 to 58.5 percent as of end-March 2001. Further, as part of sustainable external debt position, the short-term debt component decreased from 10 percent as of end-March 1991 to 3 percent as of end-March 2001. Similarly, the size of debt service payments relative to current receipts decreased from 35 percent in 1991 to 16 percent in 2001.

[36]For a subsequent substantive discussion on the issue, refer to the Mid-Term Review of Monetary and Credit Policy for 2002–2003 (paragraphs 30–34), *RBI Bulletin*, November 2002, available on the RBI website, www.rbi.org.in.

Establishing a Capacity to Assess and Manage Risk

Risk management

624. The RBI has in place sound systems to identify, measure, monitor, and control various types of risk involved in reserve management. Broadly, risk management involves establishing parameters for:

(i) desirable currency mix and limits to facilitate availability of convertible currencies;

(ii) permissible range of investment instruments that meet liquidity and safety requirements; and

(iii) maturity or duration requirements to address interest rate or price risks.

625. The risks attendant on deployment of reserves, namely, credit risk, market risk, liquidity risk, and operational risk are detailed in the following paragraphs.

Credit risk: Credit risk refers to risk arising out of default or delay in payment of obligations. Credit risk is addressed by putting in place a framework under which investment is made in financial instruments issued by sovereigns, banks, and supranationals conforming to a minimum rating. For example, investments are invariably made in papers issued by AAA rated sovereigns and supranationals apart from those with BIS. As stated earlier a careful process of selection of counterparties and fixation of limits for each category of transactions is also in place. Ratings given by international rating agencies and various other financial parameters are considered before grading and fixing limits regarding each counterparty. The day-to-day developments regarding the counterparties are closely monitored.

Market risk: Market risk comprises currency risk and interest rate risk.

(a) Currency risk: Currency risk arises due to uncertainty in exchange rates. Foreign currency reserves are invested in multicurrency, multimarket portfolios. In tune with international trends, RBI follows the practice of expressing foreign exchange reserves in U.S. dollar terms. The senior management is kept informed of the currency composition of reserves through the weekly Management Information System (MIS) report.

(b) Interest rate risk: The central aspect of the management of interest rate risk for a central bank is to protect the value of the investments as much as possible from the adverse impact of interest rate movements. The interest rate sensitivity of the reserves portfolio is measured and managed in terms of benchmark duration and permitted leeway from the benchmark. The emphasis is to keep the duration short, which is in tune with the approach to remain risk averse and keep a liquid portfolio. The benchmark duration and the leeway are suitably altered keeping in view the market dynamics.

Liquidity risk: The choice of instruments determines the liquidity of the portfolio. While bonds and treasury bills of AAA rated sovereigns are highly liquid, BIS Fixbis/ Discount fixbis can be liquidated at any time to meet the liquidity needs. With the increasing focus of central banks, academics, and market participants worldwide on the adequacy of reserves, the Department of External Investments and Operations has been undertaking exercises based on stochastic models in order to estimate "Liquidity at Risk (LaR)" of reserves.

Operational risk: Internally there is a total separation of the front and back office functions. The internal control systems ensure several checks at the stages of deal capture, deal processing, and settlement. The middle office is responsible for risk measurement and monitoring, performance evaluation, and concurrent audit. The deal processing and settlement system is also subject to internal control guidelines based on the principle of one point data entry, and powers are delegated to officers at various levels for generation of payment instructions. To hold the dealers to a high degree of integrity, a code of conduct has been prescribed for them and an annual undertaking is obtained from each of them to ensure that they abide by the code of conduct.

Custodial risk: A major portion of the securities are held by the central banks. While all U.S. Government securities are held with the Federal Reserve, all gilts and Japanese Government Bonds (JGBs) are with the Bank of England and Bank of Japan, respectively. All primary cash accounts are with the central banks in their respective countries. BIS provides both custodial and investment services and accordingly they are also the custodians for investments with them. A small portion of other euro securities and assets managed by external asset managers are placed with carefully selected global custodians. The custodial arrangements are reviewed from time to time and the developments relating to the custodians are tracked regularly to ensure that the risk is kept to the minimum.

Audit and Management Information System (MIS)

626. There is a system of concurrent audit in the Department of External Investments and Operations for monitoring compliance with all the internal control guidelines, independent of the process flows. Reconciliation of nostro accounts is done on a daily basis for major currencies.

627. In addition to the annual inspection by the Inspection Department of the RBI and statutory audit by external auditors, there is a system of appointing a special external auditor to audit dealing room operations. The main objective of the special audit is to ensure that risk management systems and internal control guidelines are adhered to by the Department.

628. A sound management information system (MIS) exists in the Department of External Investments and Operations for comprehensive reporting to senior management on all significant areas of activity. Reports are provided to senior management, with their frequency depending on the type and sensitivity of information.

Division of reserves into tranches

629. The guidelines for foreign exchange reserve management developed by the IMF indicate that a number of reserve management entities subdivide their reserves portfolio into "tranches," namely, liquidity tranche and investment tranche according to liquidity and investment objectives and policy requirements. In the case of the RBI, a system that creates an explicit division of the reserves of this kind is not in place. However, the RBI has two broad portfolios with independent risk parameters, namely, the money market portfolio and the bonds portfolio. The money market portfolio comprises instruments with maturity of less than one year and it is predominantly guided by transaction and intervention needs. By its very nature (because of low duration), the money market portfolio runs a lower market risk (in relation to interest rate movements). In contrast, the bonds portfolio consists of long-term holdings (up to a maximum of 10-year residual maturity) of triple-A rated sovereigns and supranationals.

External asset managers

630. A small portion of the reserves has been assigned to external asset managers with the objectives of gaining access to and deriving benefit from their market research. It also helps to take advantage of the technology available with asset managers while utilizing the relationship to obtain the required training/exposure for the central bank's personnel dealing with foreign exchange reserve management. The asset managers are carefully selected from among the internationally known asset management companies. They have been given clear investment guidelines and benchmarks and their performance is evaluated at periodic intervals by a separate unit within the middle office. External asset managers' views and outlook on international bond and currency markets are examined and taken as input by operational personnel.