Chapter VI
FOREIGN EXCHANGE RESERVES MANAGEMENT IN NEPAL

This chapter explains the objectives behind foreign exchange reserves management (hereinafter shortened as 'reserves management'), the institutional framework in which it is administrated, investment policies that are considered in decision making, the composition of reserves, sources and uses of foreign exchange, the accumulation trend of reserves over the years, portfolio and risk management as well as return on reserves. It also describes the assessment of reserves adequacy from various aspects, the existing policies on monetary gold, and transparency policies and practices in disclosure of reserves data. An attempt has also been made to evaluate the prevailing policies, systems and practices of reserves management in Nepal.

6.1 Introduction

Reserves management, in the Nepalese context, refers to the optimal arrangement of liquid foreign assets controlled by, and readily available to, NRB for use/deployment as per requirement. Reserves in Nepal are held in both convertible as well as inconvertible (INR) currencies and gold. The Reserve Tranche Position [RTP] in the IMF and the SDRs are also included in reserves.

Within the prevailing exchange rate regime, i.e., pegged to the INR and flexible with the rest of the foreign currencies, the main roles of reserves include supporting monetary and foreign exchange policies, providing adequate foreign exchange liquidity in the local market, avoiding undesired fluctuations in the exchange rate, facilitating intervention in the local foreign exchange market, ensuring smooth payment of external loans and providing mandatory backing to issue NPR. In Central Banking perspective, the return on investment of reserves in various instruments does not form the primary concern of reserves management, even though in practice, it indirectly contributes to revenue mobilization of the GON in the form of operating surplus from NRB.

In line with the function of reserves and the associated benefits and costs, the purpose of NRB's reserves management is to provide secure and efficient access to international liquidity while safeguarding the nation's financial capital. Providing secure access involves managing reserves to ensure that they are readily available. The safeguarding of financial capital involves limiting risk to the NRB's balance-sheet arising from the reserves portfolio and its management.

Central Banks have to consider both the benefits and costs that naturally arise from holding of reserves. Reserves provide protection from specific shocks and improve the market's perceptions and ultimately reduce risk. It is pertinent to note that the returns on investment of the reserves are generally lower than the cost of the liabilities that finance it.

6.1.1 Investment Policy Goals

NRB's investment policy emphasizes capital preservation and liquidity. Once these criteria are met, the NRB seeks to maximize the return on its foreign assets. Whatever may be the ultimate reasons for holding reserves, there is a consensus on the 'classic trilogy of objectives' for reserves management, i.e., security, liquidity and return. There is also a convention that the return objective, in most of the cases, has been of less importance out of these three. Nugee (2000) interprets the trilogy of objectives into a combined statement of official reserves management as "The objective of official (Central Bank) reserve management should be to maximize return, subject to the maintenance of sufficient security of the assets and adequate liquidity for meeting the calls on the reserve" (p. 14). The investment goals of foreign exchange reserves and NRB recommended criterion are given below:

Table 6.1
Investment Goals and NRB Recommended Criteria

S. No.	Investment Goals	Investment Criteria
1	Liquidity	○ Sufficient to cover six months of import of goods and services ○ Sufficient to amortise subsequent year's external debt obligations without further borrowing for this purpose ○ Tranching of invested reserves
2	Safety	○ Investment transaction with institutions with sound sovereign credit rating; at least having "A" as per the Standard and Poor's ratings ○ Currency diversification ○ Instrument-wise diversification ○ Regional diversification
3	Return	○ No specific requirements ○ Once safety and liquidity criteria are met, Central Bank seeks to maximise return

Source: NRB Investment Guidelines 2009

6.1.2 Strategic Objectives

Regarding the reserves management, the common use of reserves is to utilize it as a tool for exchange rate management as part of the monetary and foreign exchange policies. Reserves are held as a buffer to manage exchange rate volatility even in the floating exchange rate regime so as to provide confidence in the currency and allow Central Banks to intervene in the market to influence the exchange rate. It also gives confidence to the public and reassures credit rating agencies and international financial institutions about the soundness of the economy. In this way, foreign exchange reserves are crucial for reducing external sector risks and vulnerabilities.

Like other Central Banks, the NRB holds international reserves in accordance with liquidity and safety principles. Subject to compliance with these two basic principles, the NRB invests international reserves with the goal of optimising the returns in the long run. The major objective of the NRB's international reserves management policy is thus to ensure availability of liquid international reserves necessary for effecting international payments and currency interventions in the foreign exchange market including the management of INR. To reiterate, the traditional and theoretical objectives of reserves management are security, liquidity, and return.

The strategic objectives for managing reserves by the NRB as stated in the Investment Guidelines are:

a) In order to keep the value of the reserves safe, the NRB will only invest in highly collateralized and safe instruments.
b) Reserves must always be readily available. Reserves management must always be conducted in such a way as to ensure that the reserves are available as and when required.
c) Considering the size of reserves pool, its safety and liquidity are the highest priorities. According to the Bank's Policy and Guidelines, it is required to invest in highly safe instruments that will maximize foreign assets as required by the country.
d) Adopt optimum level of risk analysis and management in order to have safe official reserves management.
e) Management of foreign exchange reserves to meet its foreign exchange needs and external debt obligations.

6.1.3 Scope

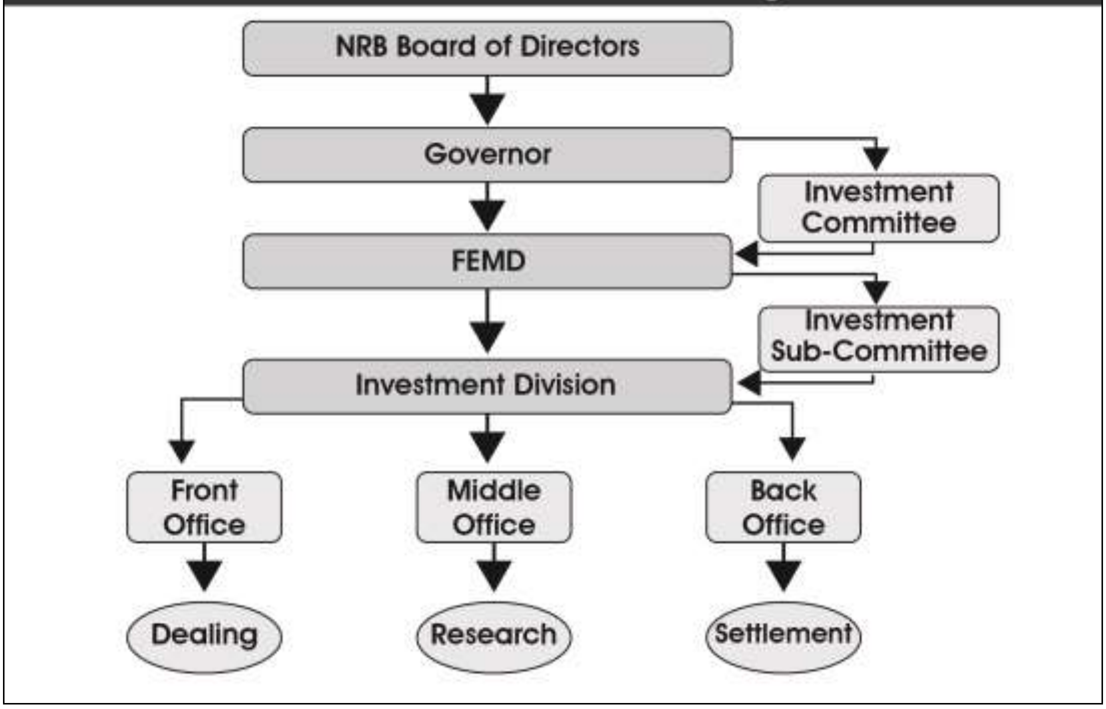
As defined above, foreign exchange reserves/international reserves/external reserves, in Nepalese context, are the liquid assets held by the NRB in the forms of foreign currencies, gold and SDRs. Reserve asset portfolios usually have special characteristics that distinguish them from other foreign currency assets. First and foremost, reserves consist of liquid or easily marketable foreign currency assets. Furthermore, to be liquid and freely useable for settlements of international transactions, the reserves need to be held in the form of convertible foreign currency. However, given the special relations and the trade pattern with India, INR, though not convertible, has been regarded as an official reserves currency.

The scope of the NRB Guideline is limited to the convertible foreign currency reserves managed by the FEMD. Reserves in INR and other convertible currencies held by the Banking Office and other NRB offices outside the valley are not covered by the Guideline. However, the Investment Committee, from time to time, takes into consideration the adequate amount required by the Banking Office for the government and commercial banks' transactions and fixes the currency-wise maximum exposure limit on the balance to be held by the Banking Office. The FEMD in coordination with the Banking Office ensures the sufficiency of INR reserve for discharging the import bill from India as well as the INR requirement for the BFIs. Whenever there is a shortfall of INR balance, the FEMD purchases the required amount of INR to maintain the desired balance by selling USD to Indian commercial banks at the prevailing rate. In recent years, this phenomenon has become a regular function of the Investment Division of the FEMD on almost a daily basis.

6.2 Institutional Arrangement in NRB for Reserves Management

The functions, duties and responsibilities for managing reserves are distributed across different levels and positions within the NRB’s hierarchy based on the provision of NRB Act 2002, contents of the Investment Guidelines 2009, set of international sound policies/practices and recommendations from the various IMF Missions along with the NRB experience in reserves management spanning more than 50 years. The whole process for decision making, monitoring and supervision of reserves management is well-defined. The prevailing institutional framework of NRB targeted on achieving reserves management objectives consists of a four-tier hierarchical arrangement including the NRB Board of Directors at the apex, followed by the Governor, the Investment Committee and the FEMD respectively. With respect to reserves management, the NRB acts on the basis of a well-established, sound and transparent hierarchical structure as shown in Figure 6.1:

Figure 6.1
Institutional Structure for Reserve Management in NRB



6.2.1 Role of the NRB Board of Directors

The government-appointed Board of Directors, headed by the Governor as Chairman and composed of six members (Finance Secretary, two Deputy Governors, and other three members) is the apex policy-making body of NRB. Section 29 of the NRB Act, 2002 empowers the Board to frame monetary and foreign exchange policies, regulate and supervise the BFIs, and maintain monetary and financial stability in the economy, among others. Board members are responsible for defining the objectives of reserves management and approving investment parameters. These functions are included in the Investment Guidelines, which establishes clear-cut directions for investing reserves, including determining the currency composition, portfolio duration and risk management. The Board also regularly evaluates the performance of reserves management activities, based on monthly reports and presentations from Investment Committee and FEMD. The required changes in the Investment Guidelines are also approved by the Board. The Board, whenever necessary, delegates authority to the Governor, Investment committee and FEMD. The composition of NRB Board of Directors has been presented in Table 6.2:

Table 6.2
Composition of the NRB Board of Directors

1	Governor	Chairperson
2	Finance Secretary	Member
3	Deputy Governors (two)	Members
4	Appointed by GON (three)	Members

Source: NRB Act, 2002

6.2.2 Role of the Governor

The Governor is responsible for the implementation of Board decisions, including monetary and foreign exchange policies as well as conducting day-to-day administrative responsibilities of the NRB. The duties, responsibilities and authority given to the Governor for the prudent conduct of the Central Bank are mentioned in section 29 of the NRB Act, 2002. Each and every round of foreign exchange market intervention, which takes place on a working day, needs to be approved by the Governor before the initiation of the intervention process. Similarly, prior approval from the Governor is necessary to sell USD to purchase INR. Thus, crucial responsibilities in respect of foreign exchange management rest with the Governor. The Governor's authority under NRB Act, Rules and

Guidelines can be delegated to Deputy Governor or other employees of the Bank if necessary to conduct the functions of the Bank smoothly.

6.2.3. Role of the Investment Committee

To discharge the challenging responsibilities in foreign exchange matters, the Governor, by exercising the power vested in him by the NRB Act, 2002, constituted the high-level Convertible Foreign Exchange Investment Committee under the chairmanship of Deputy Governor. With the adoption of the NRB Investment Guidelines on April 20, 2009, this Committee was formalized and designated as the Investment Committee. This Committee too is headed by the Deputy Governor whose portfolio includes FEMD. Other members of the Committee comprise fellow Deputy Governor, Executive Directors of FEMD, Research Department and Banking Office and Director of the Investment Division of FEMD. The Deputy Director of the Investment Division in FEMD serves as the member-secretary to the Investment Committee. Thus, the existing composition of the Investment Committee is presented in Table 6.3:

Table 6.3
Composition of Investment Committee

1	Deputy Governor (In-charge of FEMD)	Chairperson
2	Fellow Deputy Governor	Member
3	Executive Director, FEMD	Member
4	Executive Director, Research Department	Member
5	Executive Director, Banking Office	Member
6	Directors, FEMD	Member
7	Deputy Director, FEMD, Investment Section	Member-Secretary

Source: NRB Investment Guidelines-2009, Section 2, Paragraph 8 (1)

The Investment Committee's mandate includes the following:

- Review the latest developments in the national and international money, capital and foreign exchange markets.

- Make periodical assessment of the existing Investment Guidelines and forward recommendations for necessary amendments, if any.
- Determine, change and update the list of eligible banks for investment.
- Implement or cause to implement the Investment Guidelines and decisions made by the NRB Board of Directors and Governor.
- Report to the Governor and NRB Board of Directors on reserves management activities and the status of reserve on a regular basis.
- Recommend to the Governor for the review, revision and customization of the benchmark index, if any.

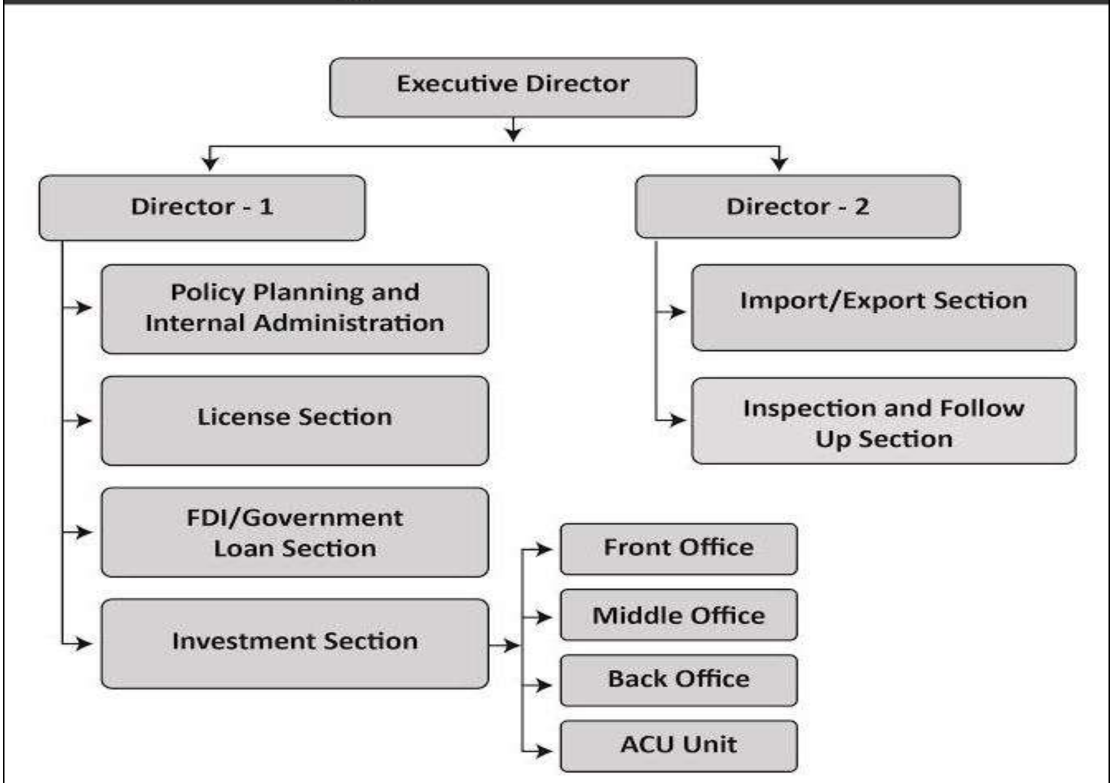
This Committee meets on a regular basis and whenever required, but at least once a month mandatorily. The decisions made by the Committee are subsequently implemented by the FEMD.

6.2.4 Role of the Foreign Exchange Management Department (FEMD)

At the operational level, the FEMD, headed by an Executive Director is responsible for all day-to-day transactions regarding foreign exchange management. FEMD is equally responsible for implementing the decisions and instructions made by the NRB Board of Directors, the Governor and the Investment Committee. FEMD prepares various periodic reports in the fields of reserves management on a regular basis. The inventory of reserves, currency exposure of the reserves, credit and issuer exposure of the reserves, duration exposure of the reserves and mark-to-market of the reserves (including overall return) are prepared on a weekly basis, whereas mark-to-market of the reserves and comparison of the return with the benchmark are prepared on a monthly basis as well. These reports are ultimately forwarded to the Investment Committee and the Governor.

As on mid-July 2015, there were altogether 49 employees, comprised of 42 officers and 7 non-officers in the FEMD. The organisation chart of FEMD has been presented in Figure 6.2:

Figure 6.2
Organisation Chart of FEMD



Functions of the divisions under the FEMD are summarized below:

1. ***Policy Planning and Internal Administration Section***
    - Issue circulars /directives related to foreign exchange transactions.
    - Preparation of annual action plan.
    - Preparation of departmental budget and submission of the same to the Corporate Planning Department.
    - Preparation of a risk register to identify, measure, diversify and reduce risks in connection with foreign exchange.

- Preparation of departmental proposals for consideration by NRB Board and management committees.
- Participation in government committees related to foreign exchange management.
- Correspondence with foreign Central Banks, governments and different non-governmental organizations regarding foreign exchange transactions and mutual cooperation.
- Correspondence with NRB's different departments regarding departmental functions and activities.
- Administer personnel and other logistic support activities.

2. License Section

- Issue licenses to BFIs, firms, companies and organizations to engage in foreign exchange transactions.
- Renewal of licenses.
- Maintain records of licensed institutions.
- Maintain records of bank guarantee, security deposits, etc., of licensed institutions such as money changers, remittance companies, hotels, travel agents, trek organizers, INGOs, and others.

3. FDI/Government Loan Section

- Repayment of principal and interest of the government loans as per instructions.
- Issuing permit to bring equity investment through banking channels.
- Issuing permit to bring a foreign loan as an investment through banking channel.
- Issuing permit for repatriation of dividend, interest and principal payments.
- Maintain the data related to FDI (equity, foreign loan), dividend, interest and principal.
- Generate statements and reporting to concerned department/ authority.

- Assist in formulating policy related to FDI and its repatriation procedures.

4. ***Investment Section***

Specialised reserves management activities are performed by the front, middle and back offices of the Investment Section of the FEMD for the purpose of effective reserves management, internal control and risk minimization. As of mid-July 2015, there were 2 Assistant Directors in each of the front office and middle office, whereas there were 4 Assistant Directors in the back office under the supervision of a Deputy Director. The major functions of these offices are mentioned below:

a. Front Office

- Execute various deals and make placements of funds with the counterparties considering safety, liquidity and return.
- Purchase and sale of foreign currencies to ease the liquidity management.
- Make intervention in the local foreign exchange market to ensure liquidity as well as stability.
- Determine official exchange rate on a daily basis for the purpose of NRB and publication of this information for the public at large.
- Maintain the weighted average interest rate of the reserves above the threshold.
- Make projections of foreign exchange inflows and outflows.
- Draw up agenda for the Investment Committee meeting.
- Maintain the minutes of the proceedings and resolutions.
- Prepare risk (duration as well as currency exposures) report and return on portfolio report.

b. Middle Office

- Measuring, monitoring, analyzing and reporting the risk associated with the foreign exchange reserves management and that of the counterparties.

- Work as a watchdog of the investment activities.
- Work as a bridge between the front office and back office activities.
- Enhancing internal control system with focus on risk management.
- Prepare time-bound scenario reports related to global investment climate, available appropriate instruments for investments, rate of return, forecasts, risk analysis and other relevant information.
- Preparation of major reports such as (i) domestic, Indian, regional and global market outlook on a daily basis, (ii) risk analysis report, fortnightly, (iii) portfolio mix and need of diversification (if any), (iv) yield analysis report and, (v) other relevant analytical reports as indicated by the Investment Committee.

c. Back Office

- Responsible for recording, documentation, accounting and reconciliation of foreign exchange transactions associated with reserves management.
- Processing the deals in the foreign exchange money market and securities and issuing payment/deposit instructions along with settlement of deals.
- Maintenance of records of intervention and INR purchases.
- Payment and settlement of ACU transactions.
- Recording the transactions of purchase, sale and intervention in the foreign exchange market.
- Preparation and release of weekly reports of foreign exchange reserves.
- Recording revaluation gain/loss and corresponding with GON and the IMF in respect of SDRs.
- Payment of remittances and authorization for opening up foreign currency accounts for BFIs and foreign currency earners.

- Reconciliation of agency balances, checking and verification of the mathematical accuracy and legal consistencies of the advices, value dates and instructions to/from counterparties.
- Conducting SWIFT operations.
- Preparation of important reports and statements such as: reserves position and bank-wise exposures for foreign exchange reserves on a weekly basis, interest income, and Income and Expenditure account of the FEMD on a monthly basis, convertible foreign currency income and expenditure account of the banking sector on a half-yearly and yearly basis as well as reports to be submitted to the IMF and other institutions as and when required.

5. Import/Export Section

- Issuance of exchange permits in order to make payments abroad for visible and invisible imports and other payments as requested by different institutions.
- Clearing of special type of issues related to LC.
- To solve exchange related problems of banks, financial institutions and various stakeholders.
- Extending the validity of the exchange permit on request.
- Processing the request received for refund of foreign currency and issuing appropriate instructions based on valid reasons.
- Providing reimbursement for export cash incentive to the banks as per the guidelines issued by GON.
- Issuing export permits and authorized letters to open accounts in the country and abroad.
- Participating in one window committee in Department of Industry.

6. ***Inspection and Follow-up Section***
   - Regular and special on-site and off-site inspection of foreign exchange transactions done by commercial banks, development banks, financial institution, money transfer companies, money changers, hotels, travel agencies, airlines, trekking and cargo companies.
   - Preparation and submission of the report to the Executive Director regarding inspected institutions.
   - Taking necessary actions as required by the related Act, Rules, Bylaws and Circulars issued by NRB.
   - Follow-up of implementation status of instructions issued by the FEMD.
   - To receive monthly transaction reports from licensed institutions and recording them in the system.
   - To disseminate necessary statement and information to concerned authorities and corresponding with licensed institutions.

Besides FEMD, other departments of NRB are indirectly involved in reserves management. The day-to-day foreign exchange transactions of official purchases and sales from/to the commercial banks and the GON are carried out by the Banking Office. The accounting record of foreign exchange transactions is maintained by the Financial Management Department. The internal audit function is carried out by the Internal Audit Department of the Bank.

6.2.5 Role of Investment Sub-committee

As per the provision of the NRB Investment Guidelines 2009, an Investment Sub-Committee has been in operation in the FEMD since April 20, 2009. The Director of the Investment Division is the Convener of the Committee. Other members include all officers from the Investment Division and representatives from the Research Department, Financial Management Department and Banking Office of the NRB**.** It regularly analyses the situation of foreign exchange, money and capital markets, nationally as well as internationally and seeks better investment opportunities and identifies precautionary measures to safeguard the investments.

6.3 NRB's Investment Guidelines and Major Policy Provisions

To achieve the strategic management objectives of reserves, practicable and formalized policy guidelines and operational strategies are essential. As such, most of the Central Banks in recent years have prepared their own investment guidelines. Such guidelines keep the decision-makers and implementers on the right track and help mitigate several related risks. NRB, based on the mandate established in NRB Act, 2002 and a set of past practices and policies, has formulated and executed the Foreign Exchange Investment Guidelines since 2009. These Guidelines have been amended 12 times till FY 2014/15.

As per the Guidelines, the objective of tranching is to split the reserves portfolio into two portions: one containing highly liquid though low-return assets to meet expected monthly cash outflows and the other being a stable portfolio so invested as to earn a higher return. Currently, NRB has divided the reserves into two parts: 40 percent in liquidity (working capital) to meet payments and 60 percent in longer-term instruments. There may be an opportunity cost if a large part of the reserves is held in very short-term instruments. Typically, the liquidity tranche is used to cover 3-4 months of imports and short-term debt. The investment tranche is used to enhance return and will, therefore, have a different risk profile than the liquidity tranche.

Strategic Asset Allocation [SAA] is a process whereby the institution determines the optimal allocation to different asset classes (typically cash, money market instruments and bonds) in order to achieve the objectives for holding reserves, while adhering to the risk constraints stipulated by the Board. The inputs to the SAA process are the risk constraints, return expectations and yield curve models.

6.3.1 Investable Instruments

The investable instruments should meet the safety and liquidity needs of the reserves. Therefore, the reserves should be invested in only those instruments which are highly safe and very liquid. Whenever there is a call on reserves for any reason, these instruments could be liquidated immediately without loss in value. NRB Board of Directors periodically reviews the eligible instruments to determine whether they:

- continue to reflect the Board policy and recent developments in the financial market
- adequately safeguard the reserve investments and enhance the performance of investments

While investing, preference is given to G-7 and OECD countries, having a minimum rating of 'A' by Standard & Poor’s or equivalent by Moody’s. The list of eligible instruments for investment as approved by the NRB Board is given in Table 6.4:

Table 6.4

List of Eligible Instruments for Investment*

S. No.	Instruments
1	US Treasury Bills
2	US Treasury Notes
3	US Treasury Bonds
4	Call / Current Accounts of Central Banks or full-fledged branch of approved banks
5	Time Deposit with a full-fledged branch of bank having at least 'A' rating by Standard & Poor’s.
6	In case of Indian Banks o Banks with rating ‘BB’ or better on Standard and Poor’s ratings o If Standard & Poor’s ratings are not available, then at least 'A' rating by Indian Credit Rating Agency (ICRA)
7	Instruments issued by BIS like Fixbis, MTIs , Investment Pool Series etc.
8	Reverse repurchase agreements (cash deposit against collateral of eligible assets)
9	Repurchase agreements (securities lending)
10	Bond futures contracts and interest rate futures contracts (for use by external managers only).
11	Interest Rate Swaps (for use by external managers only).
12	Non-callable debts issued by governments having at least 'A' or better ratings.
13	Debts guaranteed by governments having at least 'A' or better ratings (e.g. KFW, OKB)
14	German debt
15	Multilateral organization debt (e.g., IBRD, EIB, ADB, EBRD)
16	Gold and Silver
17	Indian Treasury Bills
18	Chinese Treasury Bills and Government Bonds

* As of mid-July 2015

Source: NRB Foreign Exchange Investment Guidelines, 2009 (with amendments), Annexure 2

6.3.2 Investable Currencies

The Foreign Exchange Investment Guidelines, 2009 has identified eight different currencies eligible for investment, consisting of major currencies, CNY and INR (Table 6.5).

Table 6.5
List of Investable Currencies*

S. No.	Currency	Nature
1	Indian Rupee (INR)	Inconvertible
2	United States Dollar (USD)	Convertible
3	Euro (EUR)	Convertible
4	Pound Sterling (GBP)	Convertible
5	Australian Dollar (AUD)	Convertible
6	Canadian Dollar (CAD)	Convertible
7	Japanese Yen (JPY)	Convertible
8	Chinese Yuan (CNY& CNH)	Convertible

* As of mid-July 2015
Source: NRB Foreign Exchange Investment Guidelines, 2009 (with amendments), Annexure 3

6.3.3 Minimum Liquidity Requirement

The NRB maintains liquidity by investing the larger chunk of reserves in highly liquid instruments like US and Euro Treasury bills, Fixbis and call / current account. As per the prevailing arrangement, at least 40 percent of the reserves should be invested in Treasury bills, Fixbis, call and current accounts to maintain sufficient liquidity.

6.3.4 Duration of the Portfolio

The determination of the relevant investment horizon and minimum level of acceptable return enables the Central Bank to set the relevant interest rate risk parameters. Generally, the average annual return of the securities increases quite markedly with the maturity of the security. The duration of the total portfolio is currently about six months. In the interim period, as the FEMD builds up its expertise, a six-month duration target could be used and then the FEMD would cautiously move towards the one-year target. The one-year target would be reached through a combination of instruments ranging up to the ten year maturity point. However, a range of +/- 2 months is officially allowed.

6.3.5 Portfolio Management

The NRB's reserves are divided into various portfolios according to purpose and type of investment instruments. Investment Guidelines guide the investment mandate for each portfolio. NRB invests in bonds for longer periods than time deposits by purchasing directly from the issuer like the US Treasury or BIS. NRB can consider active management of the bond portfolio if permitted under the Investment Guidelines and allocated a risk budget. The Investment Guidelines allow for investing the reserves in a broad range of assets.

In order to ensure that sufficient liquidity is always available, a major part of reserves is placed in a liquid portfolio consisting of USD deposits with commercial banks outside Nepal. Other portfolios consist of short-term and medium-term debt securities having high credit standards, such as US treasury bills and bonds, Euro bonds, mortgage-backed securities, asset backed securities and corporate bonds. Though, there are provisions in the Guidelines to appoint external managers to manage some of the fixed income portfolios, NRB manages all portfolio investments internally. Outsourcing was experimented in the past, but the result was not encouraging as per the cost-benefit analysis due to which, it was discontinued.

The portfolio benchmarks represent the risk-return trade-off acceptable to the NRB over the long term, given its management objectives and its primary objective for holding reserves. The most common benchmarking techniques are indexing, comparison to external managers and targeting a fixed rate. Active management of bonds should be considered only after staff skills, system infrastructure, and the ability to monitor compliance with the guidelines have been strengthened. This would allow NRB staff to gain experience in managing a bond portfolio on a *mark to market* basis, while at the same time, controlling the risks.

The benchmark reflects the target duration, and yet a practical alternative, an achievable portfolio that the Central Bank could today easily choose and replicate whenever needed, taking into account all restrictions and constraints. For these reasons, the Bank chooses an external benchmark with an asset that the Bank can easily invest in. NRB considers six month BIS FIXBIS asset index as the benchmark for its portfolio.

6.3.6 Accounting and Auditing of Reserves Transactions

The advanced IT support for reserves management operations, i.e., SWIFT, Reuters, Bloomberg and Olympic software are being used. Instant Bloomberg chat sessions are used to determine rates and confirm deals. Reuters as well as Bloomberg online software provide the major guidelines for decision-making. Spreadsheets are used to maintain portfolio holdings, check credit risk, generate accounting entries and calculate the portfolio return. The legacy general ledger system has been replaced by a new RTGS-based online accounting system called Olympic Software from FY 2013/14. Even though interest income is recorded on a cash basis (income is recorded when interest is received), accruals are manually calculated and recorded in the financial statements.

NRB accounting policies adhere to Nepalese accounting standards. However, NRB is in the process of formally adopting International Financial Reporting Standards (IFRS) in the coming years. Besides NRB’s control mechanism and concurrent audit from the Bank's Internal Audit Department, the reserves management activities and book-keeping system are subject to thorough audit on a regular basis. Independent external auditors also conduct the audit annually and their remarks and opinions on the financial statements are publicly disclosed. The external audit examines the accounting records and financial statements of the Bank, the control mechanisms associated with reserves management activities and checks the consistencies between disclosures contained within the financial statements and those elsewhere in the Annual Report. The focus of IFRS/IAS has been on standards covering principles for the recognition, valuation, and management of risks associated with financial assets and liabilities. Valuation issues addressed in these standards relate closely to the widely adopted reserves management practice of "marking to market", by requiring that securities held for ready sale are properly reported at their fair or market value in the Bank's financial statements.

6.3.7 Public Availability of Information on Reserves

Public disclosure of a country's reserves position and foreign exchange liquidity on a timely and accurate basis helps informed decision making in this regard. Information about Nepal's reserves is disclosed in accordance with the General Data Dissemination System [GDDS] and its associated data template on international reserves of the IMF, which is consistent with practices in most of the member countries. As a responsible Central Bank, the NRB has been disclosing information about the operation and management of its reserves in a timely manner to international financial organizations, government bodies, and general public through different channels in accord with domestic and international common practices. Major NRB publications contain data and information on foreign exchange matters which include, Quarterly Economic Bulletin, Annual Reports, Economic Report, Current Macroeconomic and Financial Situation (monthly), Governor's Speeches, the monetary policy document and its mid-term reviews and the NRB website.

Over the past few years, as Nepalese society/media has been paying more attention to the operation and management of reserves, NRB has initiated disclosing the information to the public about basic conditions and management of reserves and providing answers on major questions of public concern in various ways, including press conferences, periodic media briefings, Governor's speeches, forums of experts and the NRB website/portal.

Participants in the foreign exchange markets, who are seeking profitable investment opportunities, always keep their eyes on reserves, their trend and the information supplied by the authorities. Both the real investors as well as the speculators are proficient in exploiting the weaknesses of the system and may misuse the data and information supplied. As such, NRB follows a cautious policy on data dissemination and policy disclosures regarding reserves management.

The official disclosures of reserves management policies and goals are contained in the strategic plan document and annual reports of the NRB. Still, some specific information about the operations and management of reserves is not allowed to be disclosed to the public immediately. For example, NRB does not disclose the details of its existing counterparties. The information on the currency composition, benchmark portfolio or the classes of assets is generally disclosed in broad terms rather than with specific details.

6.3.8 Risk Assessment of Investment Transactions

Risk is controlled at various levels of the reserves management process by different entities in accordance with the broad strategy of risk management, investment guidelines and procedure manuals and circulars.

Currency Risk

The NRB follows conventional policies in establishing an appropriate currency mix. Eligible currencies must be convertible (except in case of INR), relatively less susceptible to frequent and sharp exchange rate fluctuations, generally free from restrictions on their use and products of well-developed financial markets. Accordingly, the NRB has established a minimum credit rating of a country's sovereign debt to be 'Aa2'/'AA' for its currency to be eligible, except for the G-7 member countries, in which case the minimum rating is set at 'Baa3/BBB minus'.

Interest Rate Risk

Modified duration is used to control interest rate risk. Overall interest rate risk is a function of three factors: the size of the portfolio, modified duration, and the actual or expected change in bond yields. NRB has adopted mainstream and market-based benchmarks to facilitate risk management and attribution of performance to various decision levels. The JP Morgan and Salomon Smith-Barney Government Bond Indices are adopted for the Investment Portfolio and Liquidity Portfolio, respectively. Liquidity and the safety of the funds are paramount in the liquidity portfolio. For this reason, no specific duration benchmark is specified other than a maximum maturity period of one year.

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 the banks on the adequacy of reserves, the FEMD focuses on liquidity requirement of reserves.

Credit Risk

NRB is exposed mainly to two kinds of credit risks, that is, bank risk and sovereign or supranational risk. Additional risks relating to the use of counterparties, fund managers, and the global custodian are also addressed. The Bank utilizes rating reports of Standard & Poor’s and Moody’s Investor Services to monitor sovereign and corporate risk. Maintaining a list of eligible banks approved annually by the Investment Committee is expected to control the bank risk. The minimum rating required to be an eligible counterparty in recent years is 'A minus'. The maximum exposure to an individual bank having 'AA' or better ratings by Standard & Poor's is five percent of the total reserve, whereas for the banks having rating 'A', it is 3 percent. Deposits can be placed only in the full-fledged branches of the approved commercial banks. The maximum maturity of deposits should be limited to 6 months for 'AA' or better rated banks and 3 months for 'A' to 'AA-' rated banks. The list of eligible banks is confidential.

Counterparty Risk

Unsecured investments are permitted if the counterparty has a minimum long-term credit rating of 'A-/A3/A-' from at least one of the three agencies: Fitch, Moody’s and Standard & Poor’s. Such transactions are not permitted if any of the three agencies have given the counterparty a credit rating lower than 'A-/A3/A-'. Investments where the counterparty has provided satisfactory collateral in the form of cash or securities may be permitted if the counterparty has a minimum long-term credit rating of 'A-/A3/A-' from at least one of the previous credit rating agencies. The Investment Committee establishes rules, including credit rating requirements for foreign exchange transactions with NRB. Credit rating requirements can sometimes deviate from the requirements stipulated above.

The requirements for counterparties do not apply to investments in the BIS and other Central Banks. The investment committee establishes limits for total exposure to a single counterparty. The investment committee establishes principles for measuring exposure and ensures that lists of approved counterparties are available.

Operational Risk

Internally, there is a total separation of the front, middle and back office functions. The internal control systems ensure several checks at the stages of deal, deal processing and settlement. The deal processing and settlement system is also subject to internal control and internal audit from another department. Authority is delegated to officers at various levels for generation of payment instructions. To hold the dealers and front office staff to a high degree of integrity, they need to comply with a code of conduct. An independent cell, may be the Internal Audit Department, needs to watch the compliance of the code.

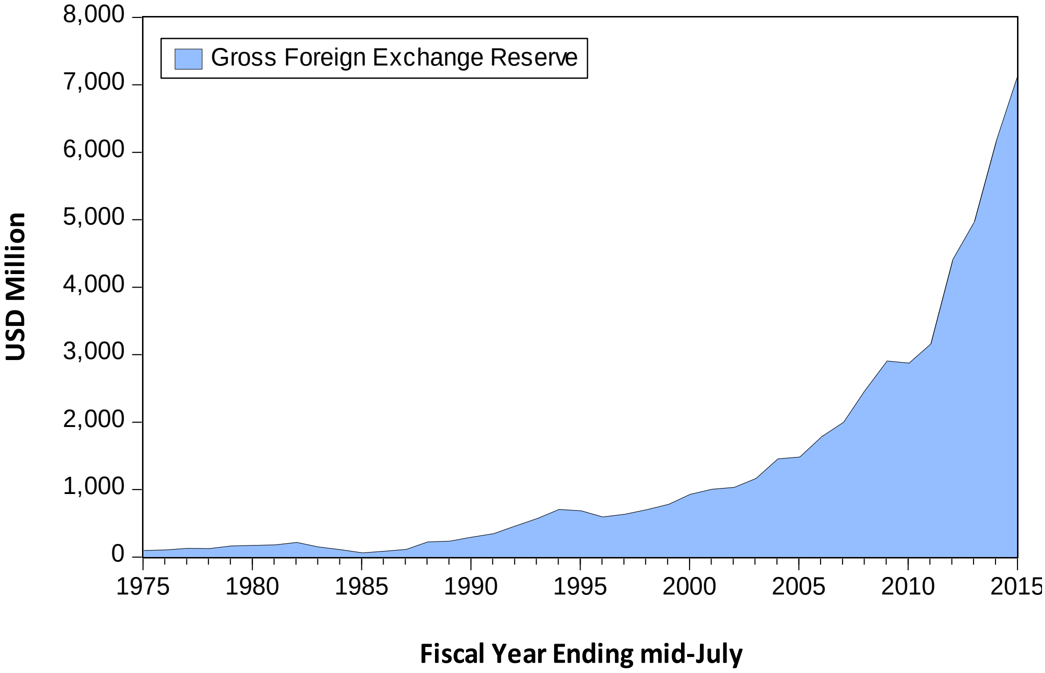
6.4 Data Analysis

6.4.1 Trend of Reserves Accumulation

Among the many economic indicators that Central Bankers, financial market participants and the financial press perpetually keep tabs on, is the size of a country's foreign exchange reserves. A remarkable feature of the international financial system over the last three decades has been the worldwide rapid accumulation of foreign exchange reserves, especially by emerging market and developing economies.

Time-series data on the composition of Nepal's International reserves from FY 1974/75 to FY 2014/15 has been presented in Appendix 6.1 and the graphical presentation of reserves accumulation trend during the same period is furnished in figure 6.3 below.

Figure 6.3
Reserves Accumulation Trend in Nepal

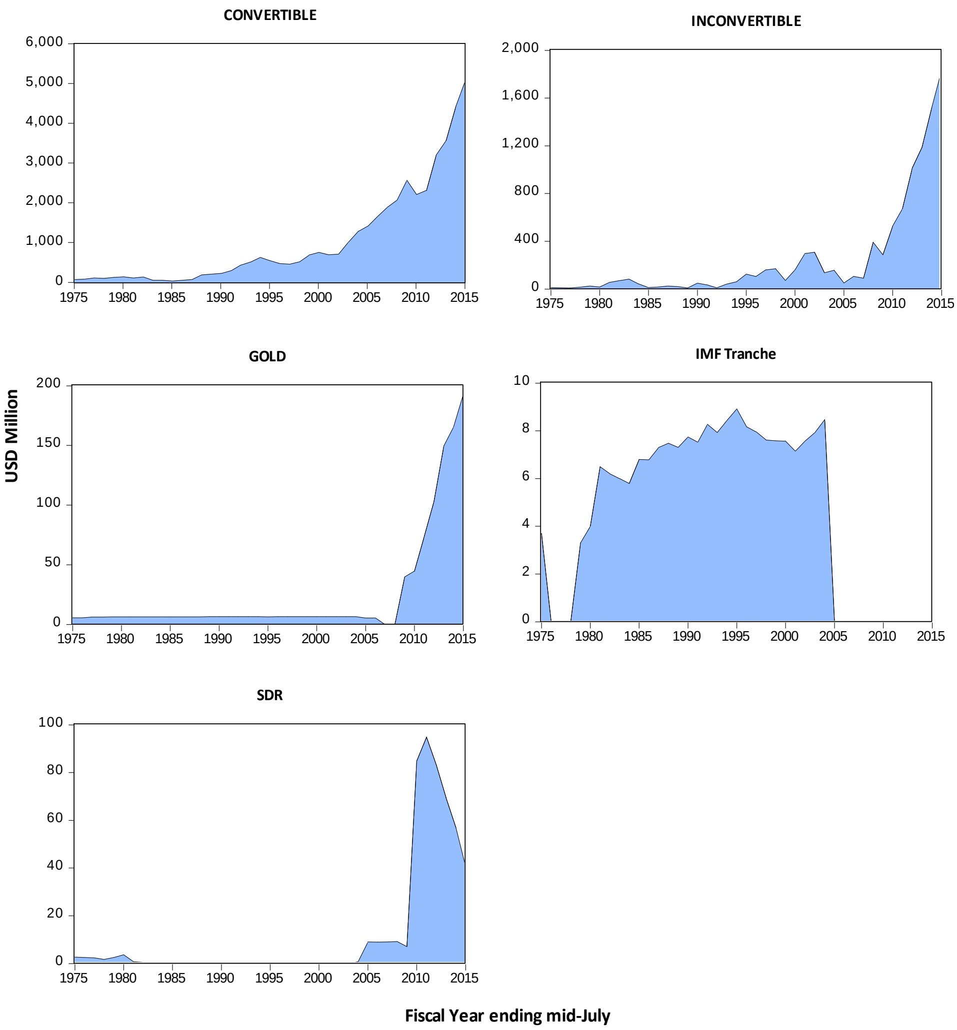


After the political regime was changed from the single party *Panchayat* system to the multi-party democratic system in 1990, economic policy-making was heavily characterized by the fundamentals of the liberalisation process which was responsible for increasing the momentum of international reserves. This phenomenon could be observed in Figure 6.3 which shows a rising trend in the curve representing gross foreign exchange reserves since FY 1989/90. The gross foreign exchange reserves, which was USD 112.6 million in FY 1974/75, increased to USD 7,184.90 million in FY 2014/15, posting a growth of 63 times in four decades. As observed in the graph, the accumulation trend of foreign exchange reserves accelerated since FY 1999/00. The growth of gross foreign exchange reserves accelerated on the basis of a proportionate rise of remittances inflow in the country. As such, the sustainability of the reserves has been questioned due to its dependency on a single fragile source, i.e., remittances.

6.4.2 Composition of Reserves

The composition of Nepal's foreign exchange reserves includes gold, special drawing rights of the IMF [SDRs], reserve tranche position in the IMF and the foreign exchange reserves in the form of both convertible and inconvertible currencies. The convertible foreign currency reserves include currency stock in the form of time deposits with other Central Banks, Bank for International Settlements [BIS] and reputed commercial banks across the world. It also includes other types of financial assets denominated in foreign currencies. The composition of Nepal's international reserves over the years from FY 1974/75 to FY 2014/15 has been presented in Appendix 6.1 and the graphical presentation of the movements of the components of gross foreign exchange reserves in Figure 6.4:

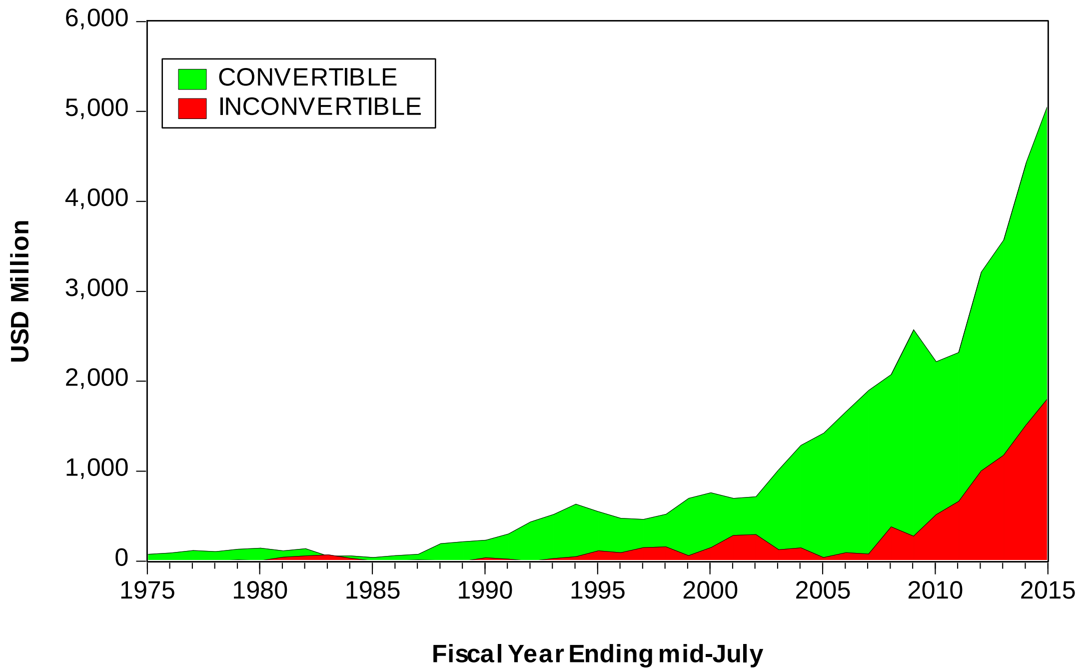
Figure 6.4
Movements of the Components of Gross Foreign exchange Reserves



According to Figure 6.4, components such as IMF reserves tranche position and the SDRs are mandatory although they are of nominal amount. Gold, which had a share of 2.7 percent in gross reserves in FY 2014/15, seems to have been managed passively as indicated from its amount. The major components include convertible currency reserves held in USD, GBP, EUR, CAD, AUD and JPY while INR is held as inconvertible currency reserve. The acceleration in the convertible foreign currency component is observed since FY 1995/96 whereas the acceleration in the inconvertible currency component is observed since FY 2010/11. As the graph indicates, both these components have been increasing rapidly in recent years.

Figure 6.5

Share of Convertible and Inconvertible Currencies in Total Currency Reserve



Further, the composition of foreign currency reserves over the years has been presented in Appendix 6.2 while the graphical presentation is furnished in Figure 6.5 above. As seen in Appendix 6.2 along with the graph above, the composition of the components, viz., convertible currency and inconvertible currency, has been changed significantly in recent years. The share of convertible and inconvertible currency, which was 88.1 percent and 11.9 percent in FY 1974/75, was 73.6 percent and 24.4 percent respectively in FY 2014/15. The share of convertible currency reserves in gross currency reserves was highest in FY 1991/92 with a remarkable share of 97.8 percent and was lowest in FY 1982/83 with a share of 45.2 percent only. From this, it can be concluded that the holding of inconvertible currency, which is entirely INR, is not so crucial from the perspective of total currency composition as it can be obtained by selling convertible currency in the Indian foreign exchange market. However, as NRB is investing in high-yielding Indian Treasury Bills since FY 2010/11, the INR holding has seen a gradual increase in recent years.

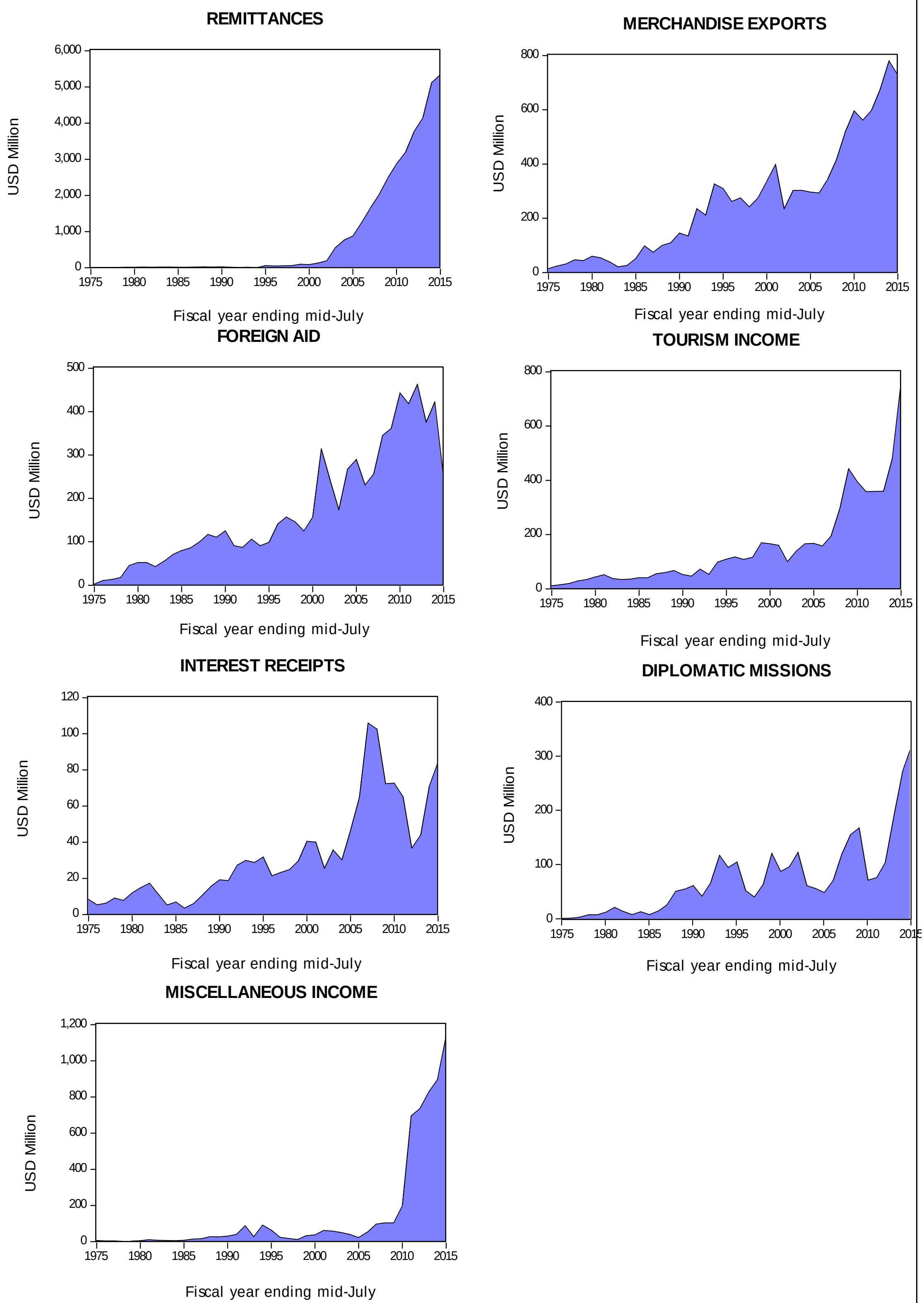
6.4.3 Sources and Uses of Reserves

Sources

The primary sources of Nepal's foreign exchange reserves in FY 2014/15 include remittances (61.92 percent) followed by tourism income (8.86 percent), merchandise exports (8.43 percent), diplomatic mission (3.72 percent) and interest receipts (0.98 percent). The rest expressed as miscellaneous account for 13.23 percent. The time-series annual data on sources of foreign exchange reserves are given in Appendix 6.3. Figure 6.6 presents the movements of components of foreign exchange reserves over the years from FY 1974/75 to FY 2014/15.

Figure 6.6

Movements of Source Components of Foreign Exchange Reserves

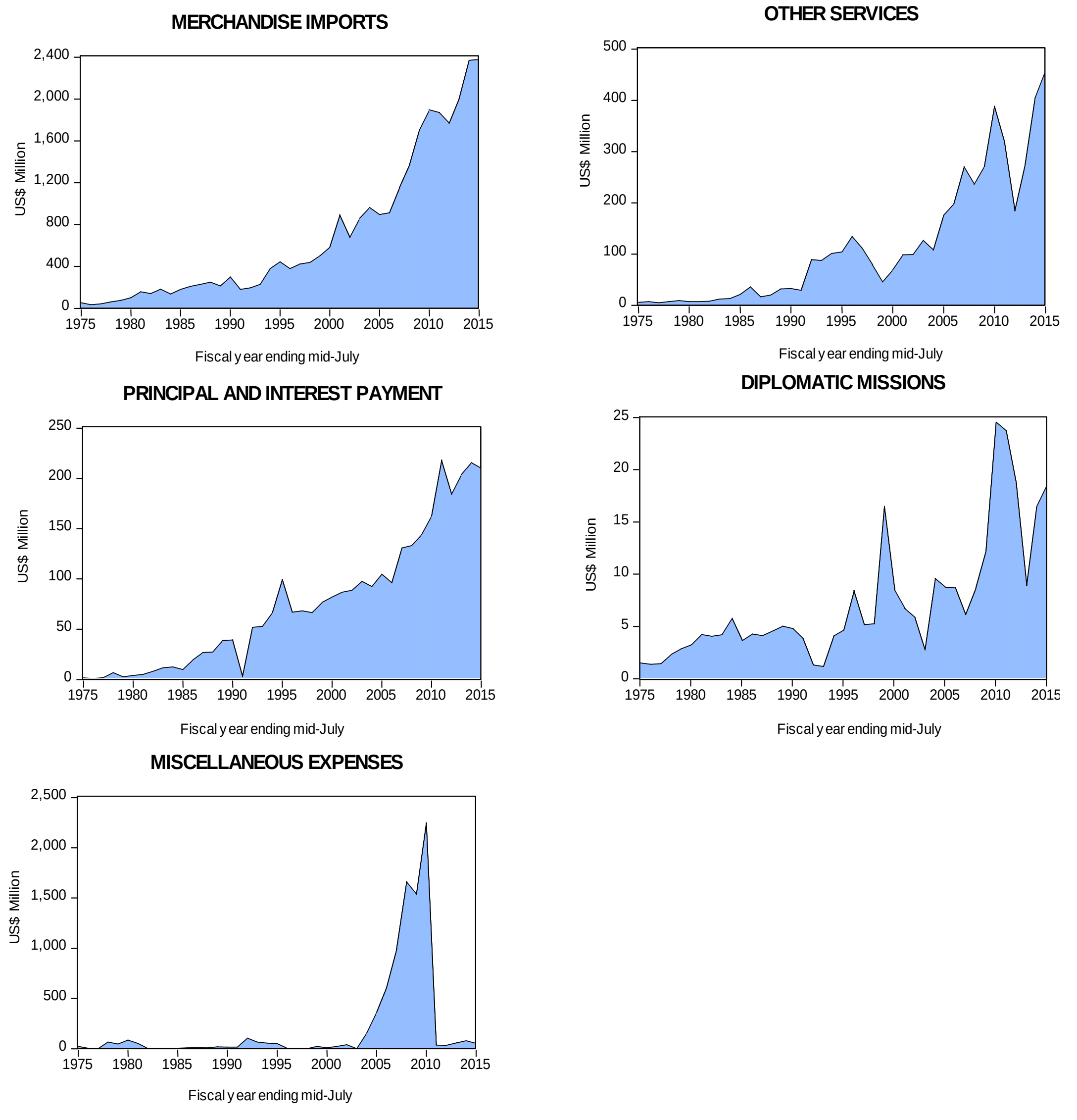


As shown in Figure 6.6, the share of remittances is continuously increasing at a higher pace especially since FY 2003/04, as Nepal became a member of WTO and foreign employment was encouraged.

Uses

The major uses of foreign reserves in recent years are merchandise imports accounting for 76.24 percent of the total uses in FY 2014/15, followed by other services payments (14.67 percent), debt servicing payments (6.73 percent), diplomatic missions (0.60 percent) and the residual miscellaneous payments (1.72 percent). The time-series annual data on expenditures of foreign exchange reserves are given in Appendix 6.6. The movements of various components of uses of reserves over the years have been presented in Figure 6.7:

Figure 6.7
Uses of Foreign Exchange Reserves



As depicted in the preceding figure, the growth trends of merchandise import as well as principal and interest payments are consistently increasing whereas fluctuations are seen in case of other services payments and diplomatic missions outflow. The residuals termed as miscellaneous expenses seem modest in recent years due to increased efficiency in classification into related heads.

6.4.4 Investment Portfolio

In determining the appropriate currency weights, the relative use of the currency has been used. The currency benchmark is constructed in such a way that it matches the international trade flows and external debt obligation of the country. The underlying philosophy for currency exposure is that it is not appropriate to modify currency weights in response to short-term exchange rate fluctuations. The currency composition of the reserves will be derived from the currency composition of Nepal's imports and the currency composition of the GON's external debt in the ratio of 75:25. Nearly two-thirds of Nepal's total imports is from India, of which a substantial part includes import of petroleum products. Though the payment of petroleum products is made in INR, the currency composition of the reserves to be held against oil is not INR, but the USD. The investment portfolio of foreign exchange reserves from FY 2008/09 to FY 2014/15 has been presented in Table 6.6:

Table 6.6

Investment Portfolio of Foreign Exchange Reserves

As Percent of Total Investment

FY	USD	GBP	EUR	CAD	AUD	JPY	CNY	INR	Gold	Total
2008/09	68	9	13	1	8	0	0	0	0	100
2009/10	61	10	16	2	12	0	0	0	0	100
2010/11	42	8	13	2	11	0	0	22	3	100
2011/12	49	6	9	1	9	0	0	23	3	100
2012/13	50	5	6	2	8	0	3	24	3	100
2013/14	48	5	6	1	7	0	6	24	3	100
2014/15	51	4	4	1	5	0	10	22	3	100

Average	53	7	10	1	9	0	6	23	3	100

Source: FEMD, Nepal Rastra Bank

The preceding table shows that the shares of USD, GBP, EUR, CAD, AUD and JPY are gradually decreasing in the currency portfolio mix, whereas the shares of CNY, INR and gold have been increasing in the recent years. The investments in INR and CNY started since FY 2010/11 and FY 2012/13 respectively. The investment in gold started since FY 2010/11. It can be observed that Nepal is relying on reserve investments in the currencies of the countries which are major trading partners although their currencies are not convertible in the capital account. This structure of reserve currencies is consistent with Nepal's structure of national foreign debt, with insignificant debt liabilities in INR, CNY and AUD. Over 90 percent of Nepal's foreign debt is owed to ADB and IDA and denominated in SDR through USD. The investment in INR and CNY-denominated portfolios commenced because of the higher returns, as discussed in the next section:

Figure 6.8
Currencywise Investment Portfolio of Foreign Exchange Reserves

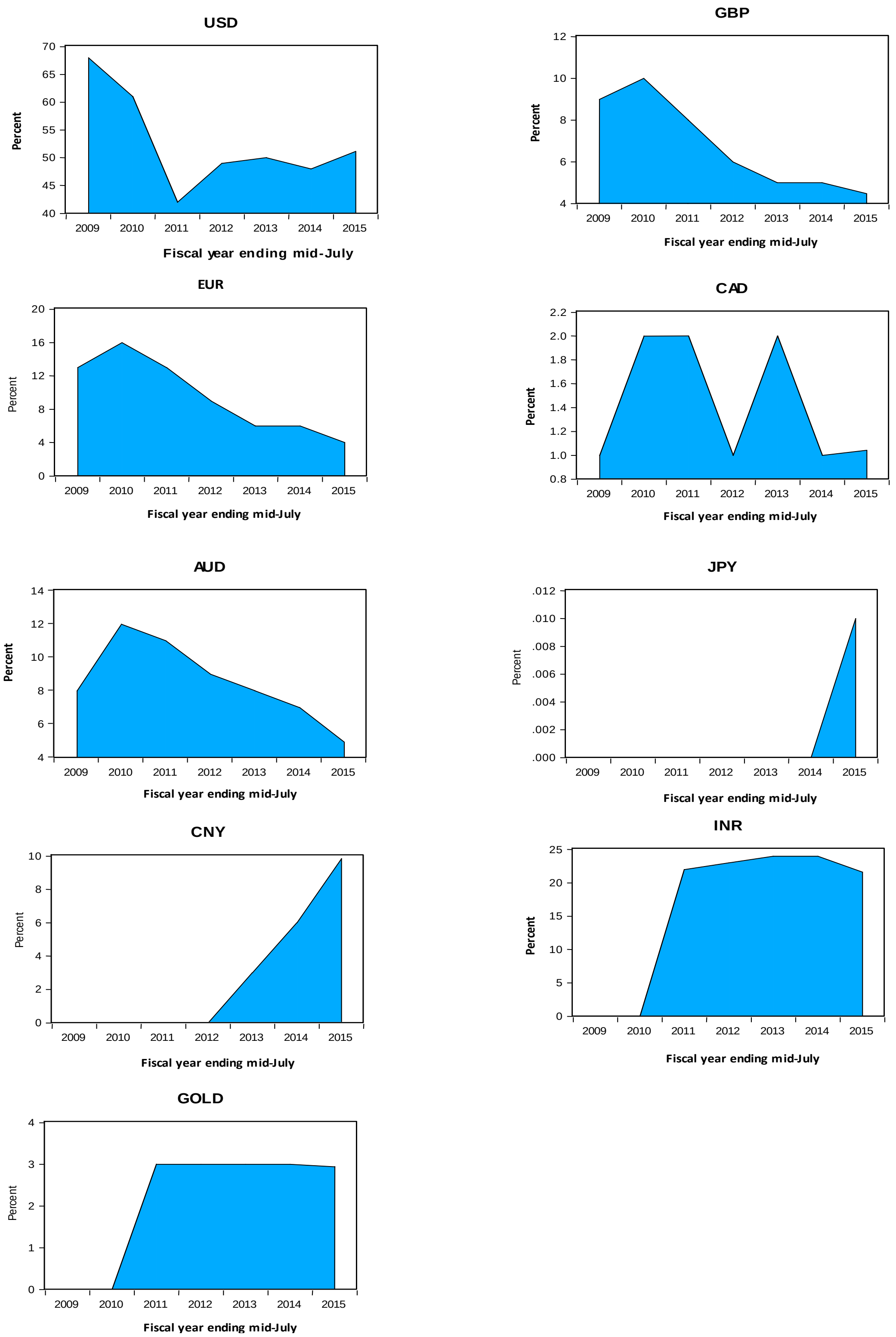


Figure 6.8 shows that investment in USD and CAD has been highly fluctuating while investment in GBP, EUR and AUD is consistently declining. On the other, investment in CNY has witnessed a sharp and consistent increment. Investments in INR and gold have not seen much increment after their initial amounts of investment.

6.4.5 Return on Reserves

Central Banks across the world intend to maximize returns on the portfolio investments without compromising on liquidity and safety considerations. NRB is no exception to this feature. Although the volume is very high, return has not been the foremost concern on investment. However, the return on reserve is always a major source of revenue for the government and an important source of foreign exchange earnings, too. Achieving an acceptable level of earnings will be a priority within the clearly defined security, liquidity and risk frameworks. NRB tries to maximize the value of reserves, within the prudent risk limits that form a framework for reserves management, so that reserves are always available when needed.[27] As a consequence, reserves asset portfolios tend to be highly risk-averse, with a consequent priority for liquidity and security before profit. This necessarily involves making a trade-off between risk and return while sequencing the reserves management priorities. The currencywise return on portfolio investment of foreign exchange reserves from FY 2008/09 to FY 2014/15 is presented in Table 6.7:

[27] NRB (2009), Foreign Exchange Investment Guidelines 2009 (Section 4).

Table 6.7

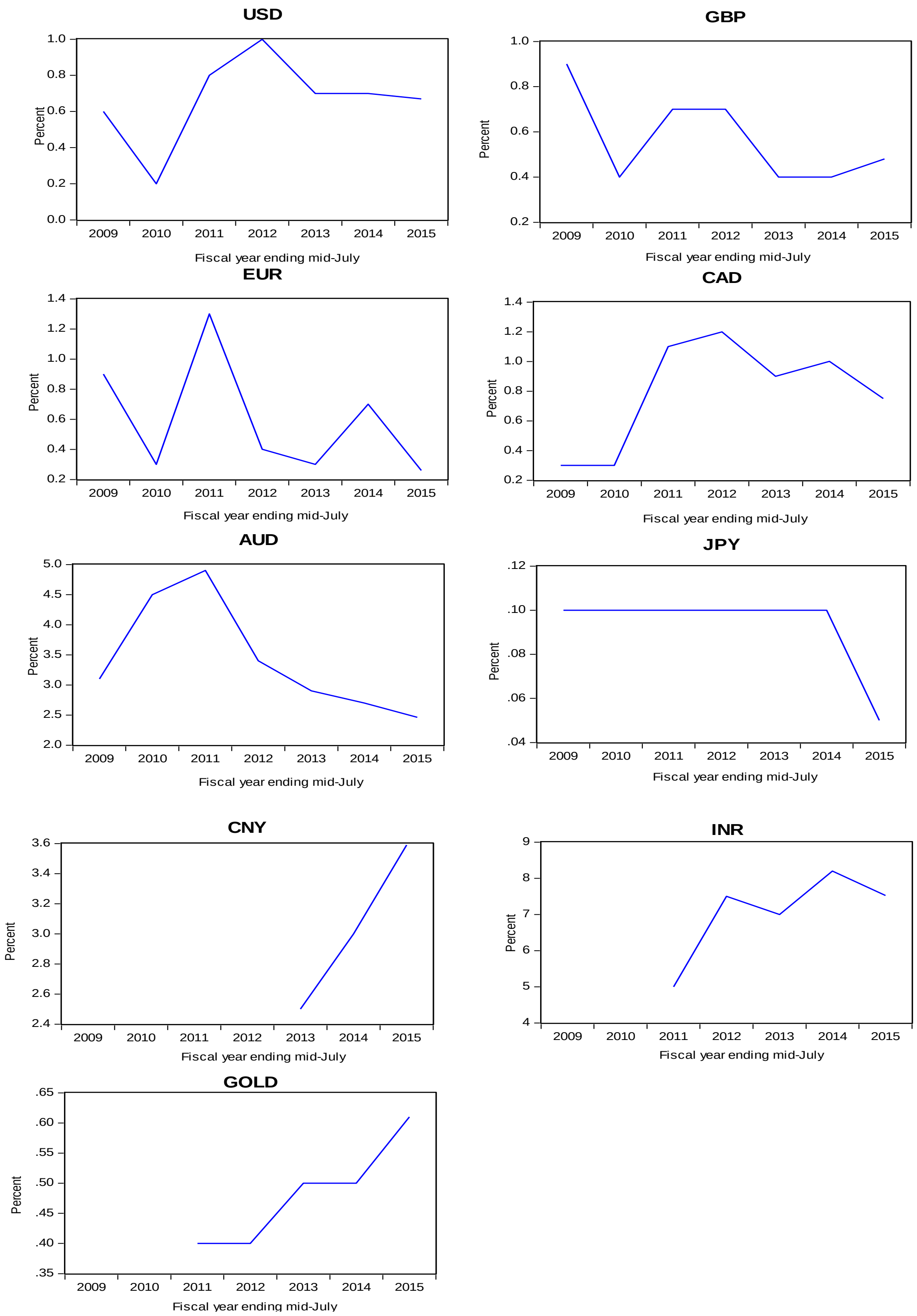
Weighted Average Yield (Currencywise) in Percent

Fiscal Year	USD	GBP	EUR	CAD	AUD	JPY	CNY	INR	GOLD
2008/09	0.6	0.9	0.9	0.3	3.1	0.1	- -	- -	- -
2009/10	0.2	0.4	0.3	0.3	4.5	0.1	- -	- -	- -
2010/11	0.8	0.7	1.3	1.1	4.9	0.1	- -	5.0	0.4
2011/12	1.0	0.7	0.4	1.2	3.4	0.1	- -	7.5	0.4
2012/13	0.7	0.4	0.3	0.9	2.9	0.1	2.5	7.0	0.5
2013/14	0.7	0.4	0.7	1.0	2.7	0.1	3.0	8.2	0.5
2014/15	0.7	0.5	0.3	0.8	2.5	0.1	3.6	7.5	0.6
Average	**0.7**	**0.6**	**0.6**	**0.8**	**3.4**	**0.1**	**3.0**	**7.0**	**0.5**

Source: Nepal Rastra Bank, FEMD

As Table 6.7 shows, the highest average return is from investment in INR (7.0 percent), AUD (3.4 percent) and CNY (3.0 percent). All others have average returns of less than one percent. Thus, INR, AUD and CNY are most remunerative investments. The average investment share in five currencies and gold amounted to three-fourth of the total which yielded earnings of less than one (0.7) percent while one-fourth amount of the total investment yielded earnings at the rate of 5.1 percent. The aggregate earning thus amounts to 2.33 percent. Therefore, Nepal's reserves management is primarily guided by principles of liquidity and security and not by returns. The calculation of the yields is based on nominal values.

Figure 6.9
Currencywise Weighted Average Yield on Portfolio Investment



As exhibited in Figure 6.9, returns from investment in the currencies, namely, INR, AUD and CNY seem high-yielding compared to other currencies. From the perspective of returns, investment in JPY, CAD and EUR in recent years have not been profitable. The returns in these currencies are also decreasing annually. The return on investment in gold is satisfactory, which could also yield capital gain. Gold is susceptible to price fluctuations; so, capital losses are possible. After analysing the reserves investment portfolio, the Central Bank could take appropriate initiatives towards shifting to the more profitable currencies.

6.4.6 Management of INR in Nepal

There is high demand for INR in the Nepalese Market, especially in border areas. It is mainly due to the inability of NRB to supply adequate amounts of INR in cash form. Nepal, therefore, has now put in place some stringent measures regarding withdrawal and purchase of INR. Know Your Customer [KYC] regulations invoked by NRB while dealing with INR are also very strict. However, the huge volume of the informal market of INR in border areas also can't be denied. People are paying a premium of Rs. 2 to Rs. 8 or sometimes even more, in the informal market for exchange of INR 100. The exchange rate prevailing in the informal exchange market raises an important question regarding the appropriateness of the existing peg rate, i.e., NPR 1.60 for a unit of INR.

Thousands of people cross over from Nepal to India everyday for purposes like trading, holidaying, religious and spiritual travelling, medical treatment, studying and working. However, the flow of people from India to Nepal is minimal. Consequently, the supply of INR in Nepal affected. This is one of the reasons for the current INR shortage. Similarly, when the volume of unofficial export to India increases, the supply of INR in cash form in border areas increases. But a shortage signifies that unaccounted export from Nepal to India has declined drastically, thereby resulting in a shortage of INR in Nepal.

NRB is financing the trade deficit with India by purchasing INR from Indian commercial banks by selling USD. This process of selling USD for acquiring INR was initiated in FY 2003/04 and since then the volume of USD sales is continuously on an upward trend except in two fiscal years, i.e., FY 2008/09 and FY 2011/12. Nepal sold about USD 3.5 billion to purchase INR in FY 2014/15, as shown in Table 6.8:

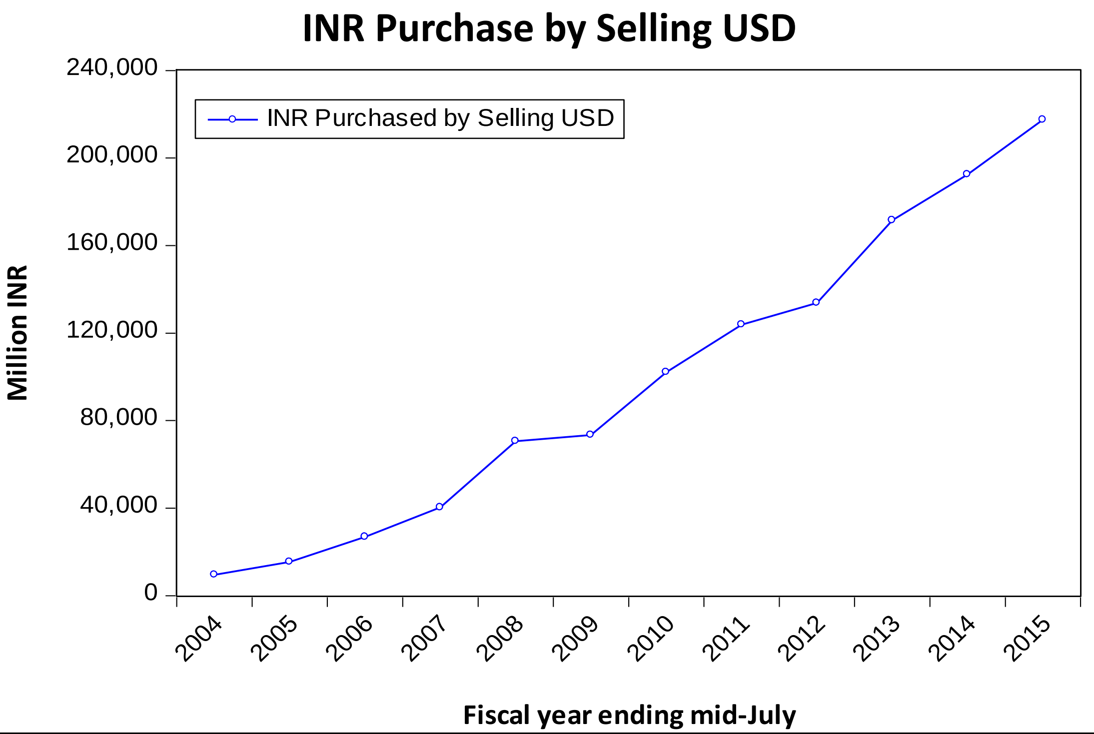
Table 6.8

INR Purchases by NRB by Selling USD

Fiscal Year	USD Sold		INR Purchased		Average Exchange Rate (INR/USD)
	USD Million	Growth Rate	INR Million	Growth Rate	
2003/04	210.0	--	9,489.3	--	45.19
2004/05	350.0	66.67	15,405.8	62.35	44.02
2005/06	600.0	71.43	26,848.6	74.28	44.75
2006/07	930.0	55.00	40,327.7	50.20	43.36
2007/08	1,730.0	86.02	70,602.5	75.07	40.81
2008/09	1,520.0	-12.14	73,400.6	3.96	48.29
2009/10	2,190.0	44.08	102,093.2	39.09	46.62
2010/11	2,740.0	25.11	123,845.2	21.31	45.20
2011/12	2,660.0	-2.92	133,718.6	7.97	50.27
2012/13	3,120.0	17.29	171,522.6	28.27	54.98
2013/14	3,140.0	0.64	192,490.2	12.22	61.30
2014/15	3,500.0	11.46	217,556.5	13.02	62.16
Total/Average	**22,690.0**	**32.97**	**1,177,300.7**	**35.25**	**51.89**

Source: Nepal Rastra Bank, FEMD

Figure 6.10



Major Uses of INR: Imports of Petroleum Products from India

Nepal fully relies on India for import of processed petroleum products. The payment for petroleum products, which used to be settled in USD earlier, is now settled in INR, effective since FY 2003/04. Therefore, payment for oil imports is one of the major uses of INR in Nepal. Table 6.9 presents the amount of INR (and equivalent USD) paid by the Nepal Oil Corporation [NOC] to Indian Oil Corporation [IOC] for the import of petroleum products.

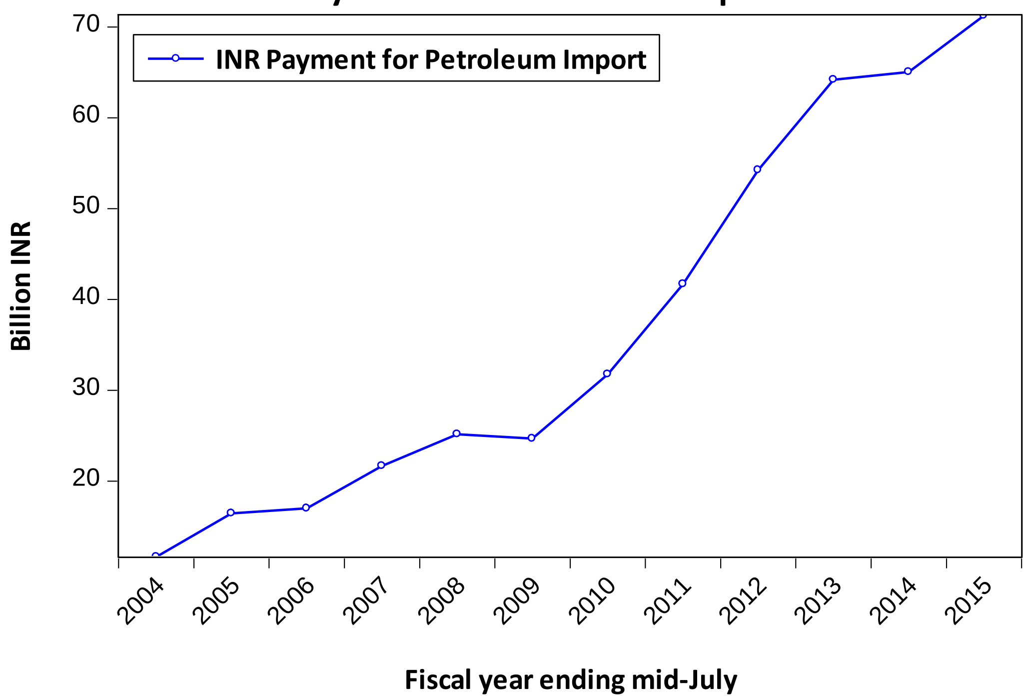
Table 6.9
Payments Made in INR by NOC for Petroleum Imports

In Millions of the Respective Currencies

Fiscal Year	INR paid	Growth Rate Percent	Equivalent USD	Growth Rate Percent
2003/04	11,699.62	--	252.72	--
2004/05	16,458.27	40.67	374.67	48.3
2005/06	17,022.19	3.43	367.90	-1.8
2006/07	21,674.09	27.33	535.25	45.5
2007/08	25,158.17	16.07	588.19	9.9
2008/09	24,701.30	(1.82)	506.84	-13.8
2009/10	31,755.07	28.56	683.18	34.8
2010/11	41,708.28	31.34	941.45	37.8
2011/12	54,237.90	30.04	980.38	4.1
2012/13	64,177.30	18.33	1,167.69	19.1
2013/14	65,031.40	1.33	1,086.00	-7.0
2014/15	71,266.60	9.59	1,128.47	3.9
Total/Av. Growth	**444,890.19**	**18.62**	**8,612.74**	**16.4**

Source: Nepal Oil Corporation

Figure 6.11
INR Payments for Petroleum Imports



As seen in the graph above, there is a continuous increase in the INR payments by NOC to IOC. The curve has been rising almost at 45 degrees, which hints that the growth will continue in the future as well. The increasing volume of INR payments is a cause for serious concern for the Central Bank as it is financing the INR requirement by selling USD to the Indian commercial banks on almost a daily basis.

Problems in Connection with Cash INR

Import and export of the INR 500 and 1,000 denomination notes (to and from Nepal) are legal up to a limit of INR 25,000 per person per visit, effective 2015. Prior to this, the RBI used to reject these two denominations notes from Nepalese authorities which indeed caused problems for the management of INR in Nepal.

6.4.7 Managing Monetary Gold

Monetary gold, although a small portion of reserves, is the most traditional component of Nepalese reserves. It is a highly liquid asset, convenient to store and exchange, and commonly accepted in foreign trade. Since gold is not issued by a country, gold is not subject to national crises, as distinct from money issued by a country. Historically, it is found that gold prices are boosted during political, military, socioeconomic crises and geopolitical tensions. NRB is managing its gold reserve since its establishment in 1956. The Bank had received gold which was held as mandatory backing for the currency issued by *kausitosakhana*, then GON treasury office. NRB formulated the Gold Reserve Management Policy 2013 on April 18, 2013. NRB's gold policy is a hybrid between active and passive management.

As envisaged in the gold policy of the Central Bank, NRB considers gold as an important part of foreign exchange reserves. Along with the worldwide trends, the NRB position is that existing monetary gold will continue as a part of its reserves in the long term. During the 2000s, the NRB took the strategic decision of allowing storage of 60 percent of gold reserve outside its own vault to the Bank of England. This decision enables NRB to economize gold maintenance costs while staying within NRB's statutory risk requirements. Gold reserves, though less significant at the present time, is helping portfolio managers within NRB to accumulate experiences and techniques on managing gold reserve in the international market.

6.4.8 Measuring Reserves Adequacy

As envisaged in the Investment Guidelines, the NRB aims to maintain foreign exchange reserves at a level which is adequate for the execution of monetary and exchange rate policies and for the prompt settlement of international transactions. In order to ensure the availability of reserves and to set appropriate investment priorities, *six-month import coverage* and *one year's government external debt obligations* are officially set to be indicative bases for the adequacy level of reserves.

One important consideration for NRB is the need to identify a desired range for the level of reserves within which the nominated objectives can be achieved. To a large extent, the decision may simply be a function of the policy environment that prevails at the time. However, when determining the optimal size of a reserves portfolio, consideration should be given to a number of factors including the size of the reserves, the opportunity costs of maintaining the portfolio, the relative depth of the domestic and foreign exchange markets, the size and openness of the domestic economy and the extent to which an economy is reliant on external sources of short-term funding. An attempt has been made to measure the reserves adequacy under three different techniques, namely import capacity, Guidotti rule and reserves to GDP ratio.

Months of Import Coverage or Import Capacity of Reserves

The most commonly used method in Nepal to measure reserves adequacy is the import capacity of reserves. For the period of four decades under review from FY 1974/75 to FY 2014/15, the import capacity of Nepalese reserves ranged from a very low coverage of 2.1 months (FY 1984/85) to a comfortable 11.3 months (FY 2014/15). Nepal faced a severe BOP crisis during FY 1984/85, which was seen as the lowest point of reserves as shown in Figure 6.11. The second lowest point observed in FY 1996/97 is mainly attributed to the strain in India-Nepal relations, which ultimately ended with political change in Nepal towards a multi-party democratic system from the then existing party-less system. Based on the average imports of last four decades from FY 1974/75 to FY 2014/15, the available level of reserves is adequate for financing merchandise and service imports of an average of 8.6 months. While the international standard of this measure is supposed to be three months, the import capacity of Nepalese reserves level seems to have been sufficient in almost all years, except in the crisis years, viz., FY 1984/85 and FY 1985/86. The national standard for Nepal for the coverage has been set as adequate to finance imports of merchandise and services of six months, as stated above. The import capacity of Nepalese reserves holding has been presented in Table 6.10 and Figure 6.12 below:

Table 6.10

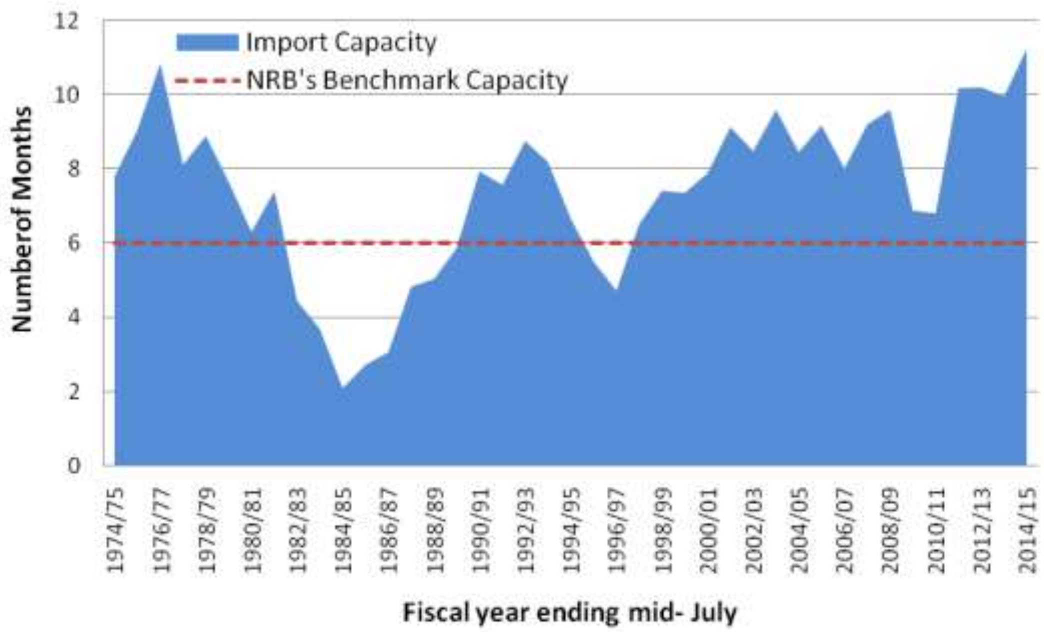
Import Capacity of Reserves

In Million USD

Fiscal Year	Gross Forex Reserves	Imports	Import Capacity (Months)
1974/75	112.6	172.8	7.8
1975/76	120.3	159.2	9.1
1976/77	145.9	161.3	10.9
1977/78	140.6	207.5	8.1
1978/79	179.9	242.4	8.9
1979/80	186.9	292.4	7.7
1980/81	195.8	372.1	6.3
1981/82	232.6	376.4	7.4
1982/83	163.0	438.5	4.5
1983/84	123.1	399.7	3.7
1984/85	77.4	439.9	2.1
1985/86	100.9	442.7	2.7
1986/87	128.2	500.2	3.1
1987/88	238.0	590.2	4.8
1988/89	249.5	593.6	5.0
1989/90	308.6	629.7	5.9
1990/91	360.4	543.9	8.0
1991/92	473.8	749.8	7.6
1992/93	584.7	800.1	8.8
1993/94	718.0	1,050.1	8.2
1994/95	702.1	1,262.2	6.7
1995/96	608.6	1,323.6	5.5
1996/97	650.4	1,648.5	4.7
1997/98	715.9	1,316.6	6.5
1998/99	794.4	1,284.3	7.4
1999/00	946.7	1,541.3	7.4
2000/01	1,020.0	1,549.7	7.9
2001/02	1,048.6	1,376.8	9.1
2002/03	1,177.8	1,663.6	8.5
2003/04	1,471.2	1,838.1	9.6
2004/05	1,498.9	2,124.7	8.5
2005/06	1,795.4	2,345.2	9.2
2006/07	2,007.9	3,002.2	8.0
2007/08	2,486.3	3,240.0	9.2
2008/09	2,919.3	3,646.0	9.6
2009/10	2,888.3	5,028.7	6.9
2010/11	3,172.0	5,583.9	6.8
2011/12	4,424.9	5,210.7	10.2
2012/13	4,987.3	5,860.4	10.2
2013/14	6,191.4	7,449.1	10.0
2014/15	7,184.9	7,659.5	11.3
Total/Average	53,532.5	75,117.7	8.6

Source: Appendix 5.1 and 6.1.

Figure 6.12
Import Capacity of Reserves (in Months)



Reserves Adequacy under the Guidotti Rule

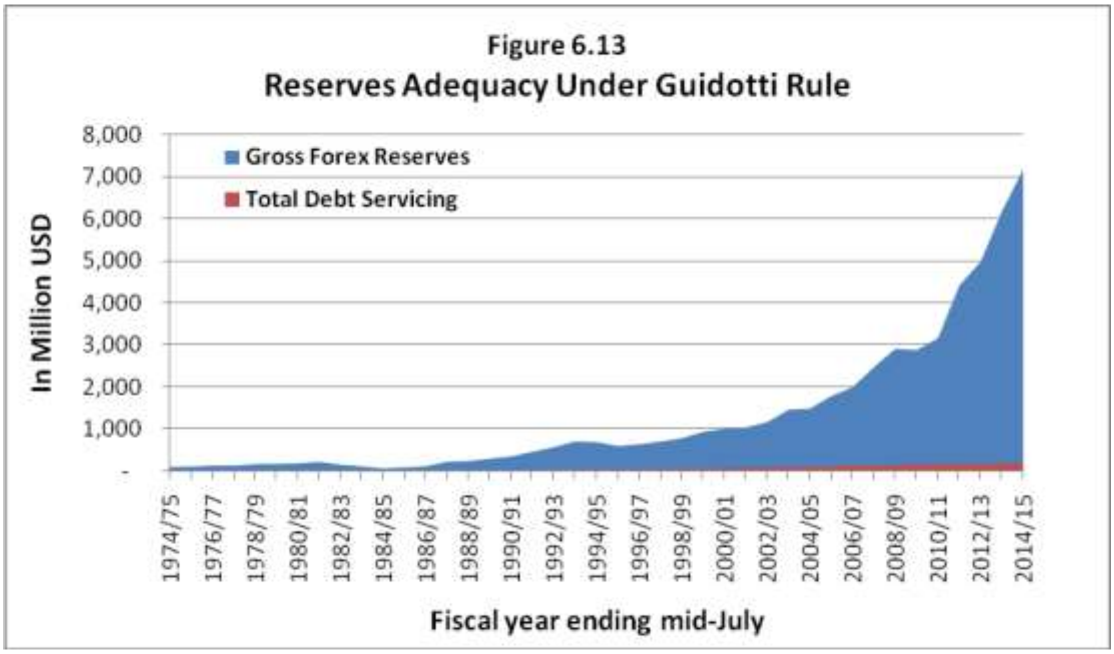
The simple rule of thumb, popularly known as Guidotti rule or sometimes Calvo rule, which is similar to Guidotti rule, was developed by economist and former Argentinean Deputy Finance Minister Pablo Guidotti. It states that when the useable foreign exchange reserves exceed scheduled amortization of international debt during the following year, the reserves level is considered adequate. This rule assumes no roll-overs of the debts to the following year. This simple rule is useful in developing countries like Nepal, which have a substantial amount of foreign debt. When the reserves level is adequate by this technique, countries are supposed to be risk free on debt servicing and amortization for that particular year. For all the years under review, Nepal possesses a sound level of reserves according to the standard of this rule. Reserves adequacy measured under Guidotti Rule has been presented in Table 6.11 and Figure 6.13.

Table 6.11
Reserves Adequacy Under the Guidotti Rule

In Million USD

Fiscal Year	Gross Forex Reserves	Total Debt Servicing	Debt Servicing as % of Forex Reserves
1974/75	112.6	1.1	0.9
1975/76	120.3	1.2	1.0
1976/77	145.9	1.3	0.9
1977/78	140.6	1.7	1.2
1978/79	179.9	1.9	1.1
1979/80	186.9	1.9	1.0
1980/81	195.8	5.0	2.6
1981/82	232.6	5.6	2.4
1982/83	163.0	6.4	3.9
1983/84	123.1	7.9	6.4
1984/85	77.4	10.8	13.9
1985/86	100.9	13.5	13.4
1986/87	128.2	17.8	13.8
1987/88	238.0	25.1	10.6
1988/89	249.5	25.6	10.3
1989/90	308.6	38.6	12.5
1990/91	360.4	25.4	7.1
1991/92	473.8	39.1	8.2
1992/93	584.7	43.5	7.4
1993/94	718.0	50.7	7.1
1994/95	702.1	59.2	8.4
1995/96	608.6	58.7	9.7
1996/97	650.4	59.0	9.1
1997/98	715.9	62.1	8.7
1998/99	794.4	69.6	8.8
1999/00	946.7	75.6	8.0
2000/01	1,020.0	83.1	8.1
2001/02	1,048.6	84.2	8.0
2002/03	1,177.8	100.6	8.5
2003/04	1,471.2	106.7	7.3
2004/05	1,498.9	115.2	7.7
2005/06	1,795.4	123.5	6.9
2006/07	2,007.9	147.9	7.4
2007/08	2,486.3	146.2	5.9
2008/09	2,919.3	160.1	5.5
2009/10	2,888.3	177.3	6.1
2010/11	3,172.0	190.8	6.0
2011/12	4,424.9	184.7	4.2
2012/13	4,987.3	181.0	3.6
2013/14	6,191.4	0.6	0.0
2014/15	7,184.9	198.5	2.8
Total	53,532.5	2,708.9	5.1

Sources: Economic Survey (Various Issues) and the Office of the Comptroller General, GON.



Reserves to GDP Ratio

Another measure of assessing reserves adequacy which is used in Nepalese practice is reserves to GDP ratio. This debt based indicator simply relates the reserves level to GDP. If this level is computed as 20 percent or more, the reserves level is deemed adequate and if it lower, then it is insufficient. However, this technique does not describe the excess liquidity point. The ratio of foreign exchange reserves to GDP from FY 1974/75 to FY 2014/15 has been presented in Table 6.12 and Figure 6.14.

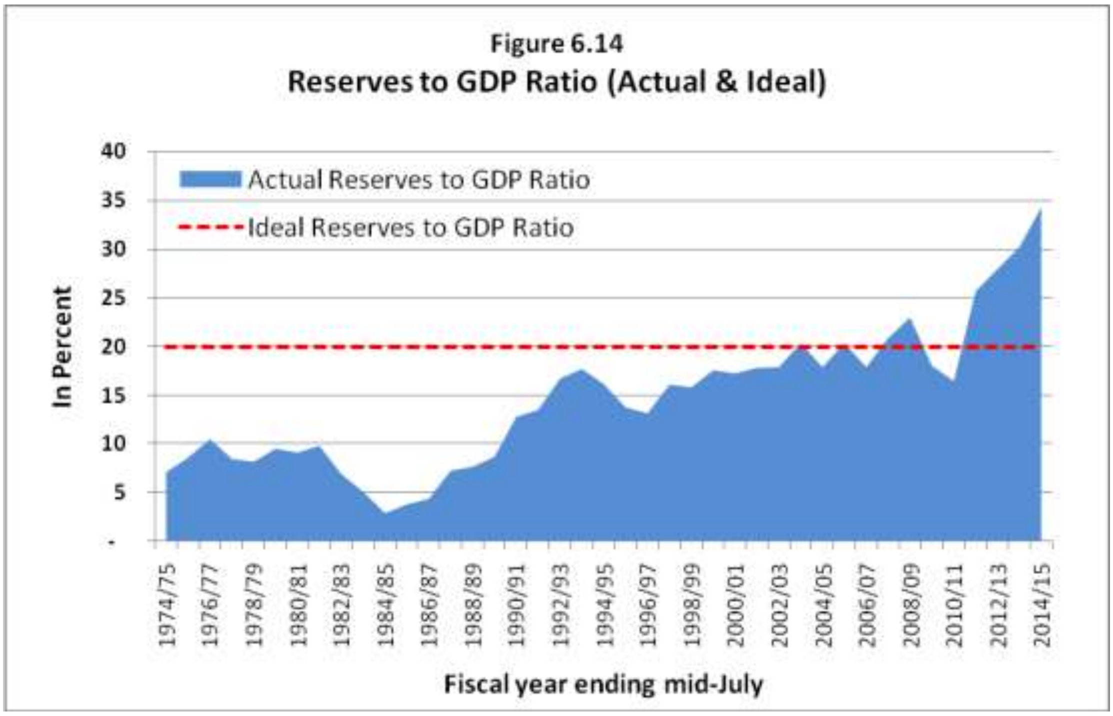
Table 6.12

Foreign Exchange Reserves to GDP Ratio

In Million USD

Fiscal Year	Nominal GDP at Producers Price	Gross Forex Reserves	Forex Reserves as % of GDP
1974/75	1,581.0	112.6	7.12
1975/76	1,397.1	120.3	8.61
1976/77	1,388.0	145.9	10.51
1977/78	1,657.7	140.6	8.48
1978/79	2,195.6	179.9	8.19
1979/80	1,962.3	186.9	9.52
1980/81	2,145.4	195.8	9.13
1981/82	2,365.5	232.6	9.83
1982/83	2,348.7	163.0	6.94
1983/84	2,410.4	123.1	5.11
1984/85	2,647.0	77.4	2.92
1985/86	2,641.4	100.9	3.82
1986/87	2,929.5	128.2	4.38
1987/88	3,272.6	238.0	7.27
1988/89	3,258.0	249.5	7.66
1989/90	3,553.8	308.6	8.68
1990/91	2,819.0	360.4	12.79
1991/92	3,509.1	473.8	13.50
1992/93	3,499.8	584.7	16.71
1993/94	4,057.7	718.0	17.70
1994/95	4,344.4	702.1	16.16
1995/96	4,425.1	608.6	13.75
1996/97	4,943.0	650.4	13.16
1997/98	4,450.4	715.9	16.09
1998/99	5,018.9	794.4	15.83
1999/00	5,390.5	946.7	17.56
2000/01	5,914.5	1,020.0	17.25
2001/02	5,890.3	1,048.6	17.80
2002/03	6,585.0	1,177.8	17.89
2003/04	7,239.7	1,471.2	20.32
2004/05	8,378.3	1,498.9	17.89
2005/06	8,827.0	1,795.4	20.34
2006/07	11,223.2	2,007.9	17.89
2007/08	11,907.5	2,486.3	20.88
2008/09	12,701.0	2,919.3	22.98
2009/10	16,023.3	2,888.3	18.03
2010/11	19,266.4	3,172.0	16.46
2011/12	17,238.6	4,424.9	25.67
2012/13	17,842.2	4,987.3	27.95
2013/14	20,485.3	6,191.4	39.70
2014/15	20,965.7	7,184.9	34.27
Total/Average	270,700.0	53,532.5	19.78

Source: Economic Survey (Various Issues), MOF, GON and Quarterly Economic Bulletin, NRB, Vol. 50. No. 4, July 2016.



As shown above, the Nepalese reserves level measured in relation to GDP seemed to be inadequate till FY 2002/03, whereas, subsequently, the reserves level was found adequate except in four years, FY 2004/05, FY 2006/07, FY 2009/10 and FY 2011/12. On an average of the whole period under review, the reserves to GDP ratio has been calculated at 19.78 percent.

6.5 Concluding Note

NRB is the legally authorized manager and custodian of the Nepalese foreign exchange reserves. NRB manages reserves following the guidelines approved by NRB Board of Directors and following international norms and practices, giving due attention to liquidity, safety and return. It is recognized that the management of reserves without appropriate strategies may put other elements of national policy like exchange rate policy, BOP and monetary policy at risk and could cause severe economic damage and financial loss of the reserves itself. For managing reserves, the NRB has institutionalised an appropriate policy and the administrative structure. The decisions are taken at various levels from NRB Board to within the FEMD. As such, reserves management presupposes the NRB role at the optimum level with risk diversification. Different measures of risk assessments and minimization are in practice including currency risk, interest rate risk, liquidity risk, credit risk, counterparty risk and operational risk. The investment guidelines of NRB also give clear instructions regarding strategies and scopes, investable currencies and instruments, eligible counter-parties, liquidity requirements, portfolio management, tranching and roles of the authorities involved in the decision making process.

Foreign exchange management is obviously a very responsible task under a pegged exchange rate regime. With the gradual increment in accumulated reserves over the years, the NRB is facing both opportunities and challenges in managing the same. The reserves management process is crucial since it accounts for a significant share of Nepal’s wealth. Undoubtedly, prudent and competent management of the reserves portfolio has important implications for the NRB as well as the economy as a whole.

Since the INR is not a fully convertible currency, there is no guarantee that the NRB will be able to acquire convertible currencies from its INR holdings, especially during crises and disputes. In contrast, INR can easily be acquired by selling convertible currency reserves without any significant loss in exchange rate or value. The imports taking place in INR can be replaced by USD since the volatility of the INR is much lower against the USD than the other major currencies. Although the return in short-term INR seems to be quite high, NRB should focus on other convertible currencies.

There seems to be an adequate level of the reserves stock by NRB as measured by import coverage, the Guidotti rule and reserves to GDP ratio.