

TREASURY MANAGEMENT IN BANKS

Traditionally, the role of the Treasury in Indian banks was limited to ensuring the maintenance of the RBI-stipulated norms for Cash Reserve Ratio (CRR) - which mandates that a minimum proportion of defined liabilities be kept as deposit with the central bank (RBI) - and Statutory Liquidity Ratio (SLR) - which obliges banks to invest a specified percentage of their liabilities in notified securities issued by the Government of India and State Governments or guaranteed by them.

Activity in foreign exchange was confined to meeting merchants' and customers' requirements for imports, exports, remittances and deposits.

Furthermore, Indian Money Market was characterized by the imperfections arising from administered interest rates. The Money Market, therefore, hardly reflected the position of true liquidity in the system.

Following the recommendations of the Committee to Review the Working of Monetary System (1985 : Chairman Shri Sukhamoy Chakravarty) and the Working Group on Money Market (1987: Chairman : Shri N. Vaghul) RBI had initiated various measures to reform the money market and to develop the necessary institutional infrastructure and instruments needed to widen and deepen the money market. To start with, Discount and Finance House of India was set up to provide to the market participants an institutional mechanism (in the form of a market maker) to meet their liquidity requirements by dealing in short term money market instruments like treasury bills, bills rediscounting, etc.

Further, steps such as increasing the number of instruments by introducing commercial paper and certificate of deposits greatly contributed to the development of money market. To enable price discovery, cap on call money interest rate was removed in stages, and completely withdrawn in May 1989. Non-banking institutions such as Life Insurance

Corporation, All India Financial Institutions, Mutual Funds, etc, were, over a period, allowed to enter the call money market for lending only.

The deregulation of financial markets began with the shift to market - determined exchange rates and moved ahead with the freeing of bank deposit and lending rates.

8.2 Sources of Profit for Treasury

The sources of profits for treasury are:

(a) Investments, where the bank earns a higher yield than its cost of funds. An example is buying a corporate bond yielding 7% and maturing in three years, financed by deposits costing only 6%.

(b) Spreads between yields on money market assets and money market funding. The bank may, for instance, borrow short-term at 5% and deploy in commercial paper with returns of 6%.

(c) Arbitrage is a buy/sell swap in the forex market, where the bank converts its rupee funds into a dollar deposit, earns LIBOR and gets back rupee on deposit maturity. This generates a risk-free profit (“arbitrage”), if LIBOR plus the forward premium on dollar/rupee is more than the domestic interest rate.

(d) Relative Value. This is a form of arbitrage in which the bank exploits anomalies in market prices. The bank may have an ‘AAA’ bond, which yields only 6%, compared to another with the same rating and maturity, but of a different issuer, which offers 6.5%. It is worthwhile to sell the first bond and invest in the second and improve the yield by 50 bps without any incremental risk, as both bonds have the same credit quality.

Bank's balance sheet consists of treasury assets and liabilities on the one hand and non-treasury assets and liabilities on the other. There is a clear distinction between the two groups. In general, if a specific asset or liability is created through a transaction in the inter-bank market and/or can be assigned or negotiated, it becomes a part of the treasury portfolio of the bank.

An example of a treasury asset/liability which is created by corporate/treasury actions/decisions on funding/deployment, but is not tradable, is the Inter-bank Participation Certificate. **Loans and advances are specific contractual agreements between the bank and its borrowers, and do not form a part of the treasury assets, although these are obligations to the bank.** (They can, however, be securitized and sold in the market. If a bank were to take a position in such securitised debts, it would become part of treasury activity). On the other hand, an investment in G-Sacs can be traded in the market. It is, therefore, a treasury asset. An illustrative list of (domestic) treasury assets is as follows:

- G-Sacs, (T-bills, State Government securities)
- Commercial Paper
- Certificates of Deposit
- SLR Bonds
- Non-SLR Bonds
- Pass through Certificates
- Equity Shares

The following are examples of treasury liabilities:

- Call/Notice/Term Money
- Certificates of Deposit

- Tier II Capital Bonds (if issued by the bank)

Treasury liabilities are distinguished from other liabilities by the fact that they are borrowings from the money (or bond) market.

Deposits (current and savings accounts and fixed deposits) are not treasury liabilities, as they are not created by market borrowing.

List of Bank's Treasury Products

A. Domestic Treasury

1. ASSET PRODUCTS/INSTRUMENTS

- Call/Notice Money Lending
- Term Money Lending/Inter-bank Deposits
- Investment in CDs
- Commercial Paper
- Inter-bank Participation Certificates
- Derivative Since Promissory Notes/Bankers' or Corporate Acceptances
- Reverse Repos/CBLO - backed Lending through CCIL
- SLR Bonds (notified as such by the RBI)

(a) Issued by the Government of India as securities and T-bills

(b) Issued by State Governments

(c) Guaranteed by Government of India

(d) Guaranteed by State Governments

- Non-SLR Bonds (issued by)

- (a) Financial Institutions
- (b) Banks/NBFCs (Tier II Capital)
- (c) Corporate
- (d) State-level Enterprises
- (e) Infrastructure Projects
 - Asset-backed Securities (PTCs)
 - Private Placements
 - Floating Rate Bonds
 - Tax-free Bonds
 - Preference Shares
 - Listed/Unlisted Equity
 - Mutual Funds

2. LIABILITY PRODUCTS/INSTRUMENTS

- Call/Notice Money Borrowing
- Term Money Borrowing
- CD Issues
- Repos/CBLO-backed Borrowing through CCIL

8.5.2 OBJECTIVES OF THE TREASURY

Treasury of a commercial bank undertakes various operations in fulfillment of the following objectives:

- To take advantage of the attractive trading and arbitrage opportunities in the bond and forex markets.

To deploy and invest the deposit liabilities, internal generation and cash flows from maturing assets for maximum return on a current and forward basis consistent with the bank's risk policies/appetite.

To fund the balance sheet on current and forward basis as cheaply as possible taking into account the marginal impact of these actions.

To effectively manage the forex assets and liabilities of the bank.

To manage and contain the treasury risks of the bank within the approved and prudential norms of the bank and regulatory authorities.

To assess, advise and manage the financial risks associated with the non-treasury assets and liabilities of the bank.

To adopt the best practices in dealing, clearing, settlement and risk management in treasury operations.

To maintain statutory reserves - CRR and SLR - as mandated by the RBI on current and forward planning basis.

To deploy profitably and without compromising liquidity the clearing surpluses of the bank.

To identify and borrow on the best terms from the market to meet the clearing deficits of the Bank.

To offer comprehensive value-added treasury and related services to the bank's customers.

To act as a profit centre for the bank.

8.5.3 ORGANISATIONAL STRUCTURE

Organizational structure of a commercial bank treasury should facilitate the handling of all market operations, from dealing to settlement, custody and accounting, in both the domestic and foreign exchange markets. In view of the voluminous and complex nature of transactions handled by a treasury, various functions are segregated as under:

Front-Office : Dealing - Risk Taking

Mid-Office : Risk Management and Management Information

Back-Office : Confirmations, Settlements, Accounting and Reconciliation

The organization of a treasury depends on the volume of activities handled. It is important that the above three functions are distinct and work in water-tight compartments. The dealers are not supposed to handle settlement or accounts. **The Back-Office should not perform dealing but may perform accounting function, and accounting section should not perform dealing but may perform Back Office function.** The corporate treasury is headed by an appropriate senior executive who directs, controls and co-ordinates the activities of the treasury. **Hershel also co-ordinates the work between the chief dealer, the Head of Back Office, Head of Research, and is totally responsible for the management of funds, investments and forex activity.**

Hershel will also be a member of **Assets Liability Management Committee (ALCO)** and help the committee in deciding on various policies on treasury management.

Banks which have separate forex operations, will have dealers for forex operations. Treasury will have a separate research division. Head of Research will be assisted by officers to carry out research activities/analysis in various types of securities. **Research department may be common for money market, debt, equities and forex.** Market analysis would also be provided by the research Department. Appropriate Information technology (process, package and infrastructure) is necessary for treasury management as the operations/transactions are distinct from branch banking and are also very critical. As software packages available in the market may not be adequate, banks may have to modify the software to suit its needs, changing circumstances and volatility.

The fund manager looks into the liquidity position, fund flows, and maintenance of reserve requirement/s.

Risk managers should be posted in treasury for facilitating the evaluation of scenarios, independent review of line/limit excess, reviews of transactions to ensure compliance with regulations, monitor risk factors - credit risk, liquidity risk, interest rate risk, operational risk - in the transactions and give guidance to the front line, viz. dealers to remain in touch with product and market developments.

CORPORATE/APEX TREASURY ORGANISATION STRUCTURE FUNCTIONS OF A TREASURER

Treasury operations of a commercial bank consist mainly of two vital functions via:

(a) Ensuring strict compliance with the statutory requirements of maintaining the stipulated Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR), and

(b)Liquidity management by

- (i) ensuring the optimum utilization of the residual resources through investments
- (ii) raising additional resources required for meeting credit demands at optimal cost and
- (iii) managing market and liquidity risks in the transactions. With financial market reforms, banks have been compelled to look for avenues for alternatives to credit, the historical source of profits. It has been realized that credit function alone is not sufficient and banks should look to investments for earning market related returns on funds. Investments have thus gained importance as an equally important part of the banks' balance sheets. Therefore, over and above the statutory holding of government securities, as SLR, a substantial portion of banks' resources are deployed in government/corporate bonds and other products as an alternative to credit.
- (iv) The treasury operations also include providing of cover to the customers of the bank in respect of their foreign exchange exposure for their trade transactions like exports, imports, remittances, etc., and extending products and services to its customers for hedging the interest rate risks. While doing so, the treasury also takes care of the associated functions like liquidity management and asset-liability management of the domestic as well as foreign exchange resources and deployment.

Basic Treasury Functions :

| Domestic Operations | | Forex Operations | |
|---------------------|------------------------------------|------------------|---|
| 1. | Maintenance of statutory reserves | 1. | Extending cover to foreign exchange trade transactions |
| 2. | Managing liquidity | 2. | Funding and managing forex assets and liabilities |
| 3. | Profitable deployment of resources | 3. | Providing hedge to forex risks proprietary and for its constituents |
| 4. | Trading and arbitrage | 4. | Trading and Arbitrage |
| 5. | Hedge and cover operations | 5. | Mid/Back Office functions |

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|----|------------------------------|--|--|
| 6. | Mid/Back - Office function/s | | |
|----|------------------------------|--|--|

RESPONSIBILITIES OF A TREASURER

In today’s highly competitive environment, the treasury plays a vital role in the viability and success of a bank and calls for effective internal and external interface. **It performs a myriad of functions such as balance sheet management, liquidity management, reserves management, funds management, investments, managing capital adequacy, transfer pricing, technology and operations, risk management, trading activities and**

offering hedge products. It has to work on arriving at an optimal size of the balance sheet, interface with various liability and asset groups internally, give correct pricing signals keeping in mind the liquidity profile of the bank. On the external front it has to provide active trading support to the market, make two-way prices, add to the liquidity and continuously strive to provide the customers with value-added solutions to their specific financial needs.

BALANCE SHEET MANAGEMENT: An important aspect of balance sheet management is Liquidity Management. Liquidity essentially means the ability to meet all contractual obligations as and when they arise, as well as the ability to satisfy funds requirement to meet new business opportunities. Liquidity planning involves an analysis of all major cash flows that arise in the bank as a result of changes in the assets and liabilities and projecting these cash flows over the future.

Ideally, **Effective liquidity management** requires careful attention to balance sheet structure and growth. A balance sheet that is growing rapidly needs careful scrutiny to determine whether the liquidity of the bank is being adversely affected. Very often banks put up excessive assets in the form of cash credit loans or investments in **securities without having matching source of funds of similar tenure**. This mismatch in the maturities of assets and liabilities may result in the **bank being subjected to liquidity risk, because the bank starts depending chronically and excessively on the most easily accessible source of funds i.e. the interbank call money market**. Thus, the bank may end up funding long-term assets through overnight borrowings on an ongoing basis. It should be borne in mind that dependence on the call market may not be advisable due to the sharp fluctuations in market rates as well as volatility in the availability of funds in the market. Funds management by the treasury involves providing a balanced and well

diversified liability base to fund the various assets in the balance sheet of the bank.

Diversified liabilities imply raising funds from a variety of sources, through a variety of instruments and for a variety of tenures. Customer deposits are often the most suitable source of funds for a bank, due to actuarial and behavioural reasons. At the other end of the spectrum are the funds obtained from the interbank money market which are very short term in tenure and volatile as regards rate as well as availability. The treasury has to decide on an optimal mix of funds from various sources to ensure that there is no excessive dependence on any single category. It is also advisable that the maturity profile of assets conform broadly to that of the liabilities, **so that there is no large structural mismatch in the balance sheet that can lead to liquidity problems.**

The treasury also has the responsibility for setting targets for balance sheet size and key ratios, in consultation with all business groups. Asset and liability levels need to be monitored and managed periodically to iron out any structural imbalances. **The ALCO (Asset and Liability Committee)** should meet every month for this aspect of strategic business planning. The size of the balance sheet is a matter of great importance for a bank, in light of capital adequacy guidelines. A bank cannot afford to be driven just by volume goals which aim at a certain percentage growth in credit and deposits year after year. **This is because balance sheet growth will call for additional capital in accordance with BIS guidelines, and capital is increasingly scarce. Therefore, the focus has now to shift on to the quality of assets,** with return on assets being a key criterion for measuring the efficiency of deployment of funds.

8.6 INTEGRATED TREASURY : COST CENTER AND PROFIT CENTER

Integrated treasury is a holistic approach to funding the balance sheet and deployment of funds across the domestic as well as global money and forex markets. This approach

enables the bank to optimize its asset-liability management and also capitalize on arbitrage opportunities.

Traditionally, the forex dealing room of a bank managed the foreign exchange dealings mainly arising out of merchant transactions (forex buying from and selling to customers) and consequent cover operations in interbank market. The domestic treasury/investment operations were independent of forex dealings of a bank. The treasury operations were treated as a cost center, specifically devoted to reserve management (CRR and SLR) and consequent fund management.

The treasury also undertook investment in Government and non-government securities. **The need for integration of forex dealings and domestic treasury operations has arisen on account of interest rate deregulations, liberalization of exchange control, development of forex market, introduction of derivative products and technological advancement in settlement systems and dealing environment. The integrated treasury performs not only the traditional roles of forex dealing room and treasury unit but also many other functions**

FUNCTIONS OF INTEGRATED TREASURY:

(a) Reserve Management and Investment :

It involves:

(i) meeting CRR/SLR obligations,

(ii) having an approximate mix of investment portfolio to optimize yield and duration.

Duration analysis is used as a tool to monitor the price sensitivity of an investment instrument to interest rate changes.

(b) Liquidity and Funds Management :

It involves:

- i. analysing of major cash flows arising out of asset-liability transactions,
- ii. providing a balanced and well-diversified liability base to fund the various assets in the balance sheet of the bank and
- iii. providing policy inputs to the strategic planning group of the bank on funding mix (currency, tenor and cost) and yield expected in credit and investment.

(c)Asset Liability Management : ALM calls for determining the optimal size and growth rate of the balance sheet and also price the assets and liabilities in accordance with prescribed guidelines.

(d)Risk Management : Integrated treasury manages all market risks associated with a bank's liabilities and assets. The market risk of liabilities pertains to floating interest rate risks and asset and liability mismatches. Market risk for assets can arise from:

- (I) unfavourable change in interest rates,
- (ii) increasing levels of disintermediation,
- (ii) securitization of assets,
- (iii) emergence of credit derivatives, etc. While the credit risk assessment continues to be in the domain of Credit Department, the treasury would monitor the cash inflow impact from changes in asset prices due to interest rate changes by adhering to prudential exposure limits.

(e)Transfer Pricing : The treasury has to ensure that the funds of the bank are deployed optimally, without sacrificing yield or liquidity. An integrated treasury unit has an idea of the bank/s overall funding needs as well as direct access to various markets (like money market, capital market, forex market, credit market). Hence, ideally the treasury should provide benchmark rates, after assuming market

risk, to various business groups and product categories about the correct business strategy to adopt.

(f) Derivative Products : The treasury can develop Interest Rate Swap (IRS) and other rupee based/cross-currency derivative products for hedging bank's own exposures and also sell such products to customers/other banks.

(g) Arbitrage : Treasury units of banks undertake arbitrage by simultaneous buying and selling of the same type of assets in two different markets in order to make profit less risky.

(h) Capital Adequacy : This function focuses on quality of assets, with Return on Assets (ROA) being a key criterion for measuring the efficiency of deployed fund. An integrated treasury is a major profit center. It has its own P and L measurement. It undertakes exposures through proprietary trading (deals done to make profits out of movements in market interest/exchange rates) that may not be required for general banking.

8.6.4 STRUCTURE OF INTEGRATED TREASURY The treasury branch is manned by the front-office, mid-office, back office and audit group. The dealers and traders constitute the front office. In the course of their buying and selling transactions, they are the first point of interface with other participants in the market (dealers of other banks, brokers and customers). They report to their department heads. They also interact among themselves to exploit arbitrage opportunities. A mid-office set-up, independent of the treasury unit, acts as the unit responsible for risk monitoring, measurement and analysis and reports directly to the top Management for control. This unit provides risk assessment

to Asset Liability Committee (ALCO) and is responsible for daily tracking of risk exposures, individually as well as collectively. **The back-office** undertakes accounting, settlement and reconciliation operations. The audit group independently inspects/audits daily operations in the treasury department to ensure adherence to internal/regulatory systems and procedures.

OBJECTIVE, SOURCES AND DEPLOYMENT

Liquidity can be defined as the comprehensive ability of a bank to meet liabilities exactly when they fall due or when depositors want their money back. This is at the heart of banking operations and distinguishes a bank from other entities.

The bank's liquidity steps from the following:

- Cash in excess of CRR;
- Investments in SLR securities over and above the mandatory requirements. (These can be used for CBLO/REPO borrowing through CCIL or from the RBI's LAF and market);
- Prime assets - investments in T-bills, top-rated short-term paper and loans to top-rated companies;
- Swapping forex funds to INR
 - Undrawn lines from the RBI - export credit refinance (ECR); and
 - Undrawn lines from specialized FIs - SIDBI, NABARD, Exim Bank, NHB, MUDRA, etc.

If in need of short-term liquidity, a bank can have recourse to any of the above sources. The bank can also generate liquidity from asset sales, especially of short-term paper of high credit quality. While SLR securities with SGL/CCIL facilities can be used in CBLO

or REPO and need not be sold for liquidity, other instruments may not be amenable for such facilities.

The Reserve Bank of India provides export credit refinance facility to banks under Section 17(3A) of the Reserve Bank of India Act, 1934. This facility is given on the basis of banks' eligible outstanding rupee export credit both at the pre-shipment and post-shipment stages. The quantum of refinance is fixed from time to time based on the stance of monetary policy of the RBI. At present, the scheduled banks are provided export credit refinance to the extent of 32.0 per cent of the outstanding export credit eligible for refinance as at the end of the second preceding fortnight. Export credit refinance facility is available at the Repo Rate under the Liquidity Adjustment Facility, as announced from time to time. There are also refinance facilities for other types of loans in the bank's portfolio to small-scale units (from SIDBI), agriculture (NABARD-60%, State Govt.-25%, BANK-15%), activities allied to agriculture and against loans for rural off-farm sector (from NABARD) and for imports/exports (from Exim Bank). Refinance is also available to banks from Micro Units Development and Refinance Agency (MUDRA) for their financing to micro units with loan requirement ranging from Rs.50,000 to Rs.10 lakh. MUDRA has been established in 2015 by an Act of Parliament under Prime Minister Mudra Yojana (PMMY). It has developed three refinance products,

- (a) Shishu – covering loans upto Rs.50,000,
- (b) Inshore - covering loans Rs.50,000 - Rs.5 lakh, and
- (c) Taren – covering loans Rs.5 lakh – Rs.10 lakh. In a liquidity - short situation - a bank would naturally source the cheapest funds, after considering the call money market, repos, security (SLR and non-SLR), prices and the cost of refinance from the RBI and FIs. In extraordinary situations, the bank may seek RBI liquidity support, on merits against the collateral of securities.

In a situation of surplus liquidity, the bank would look at the following options :

- Money market lending
- Reverse REPO
- Buying T-bills, CP or securities, depending upon the tenures of surplus liquidity
- Repaying refinance (if any).

All the above, form part of the liquidity management system of a bank. In order to have effective liquidity management banks need to undertake periodic funds flow projections, taking into account movements in non-treasury assets and liabilities [fresh deposits, maturing deposits (and maturing) and new term loans] and maturing treasury assets and liabilities. This enables forward planning for CRR and SLR maintenance. The latter is especially crucial as timing is paramount in buying G-Sacs given the volatility in their yields. If the bank expects them to fall, it is better to buy SLR securities ahead of the actual need. Similarly, maturing assets can also be reinvested before their actual maturity (with inter-bank funding as the bridge).

FUNDING THE BALANCE SHEET

The bank's balance sheet is funded not only by deposits but also by market borrowing - call/notice/term money, inter-bank deposits, repos and refinance. The latter assume importance when the bank expands the portfolio of fixed income securities in anticipation of a fall in interest rates (which leads to price appreciation of the securities). Forex funding is also resorted to when the USD/INR exchange rate is expected to be stable. On this view, the bank may create rupee assets from forex liabilities on an unhedged basis, within the limits imposed by the RBI and the bank's investment policy on such exposures. Conversely, the bank may borrow INR and convert into USD to invest short-term

surpluses, if offshore interest rates are high, and INR is depreciating. These can be done not only for the purpose of day-to-day liquidity management but also for arbitrage.

CASH RESERVE RATIO (CRR)

The Reserve Bank of India prescribes certain percentage of demand and time liabilities (DTL) which a bank is required to maintain as cash reserve (called CRR – Cash Reserve Ratio) that may be enhanced/reduced, having regard to the needs of securing the monetary stability in the country. The maintenance of CRR by scheduled banks is governed by Section 42(1) of the RBI Act, 1934 and by other banks by Section 18 of the Banking Regulation Act, 1949. [The BR Act, 1949 was made applicable to the cooperative banks with the passage of Banking Laws (Application to Co-operative Societies) Act, 1965]. The scheduled banks are required to maintain CRR with the Reserve Bank of India, while other banks may maintain CRR with themselves and/or by way of balance in a current account with RBI and/or by way of net balance in current accounts with other banks. It may, thus, be observed that the banks do not earn anything on the balances maintained by way of CRR. As such, increase/decrease in CRR affects cost of funds to the banking system and resultant increase/decrease in lending rates.

Computation of DTL Liabilities of a bank may be in the form of demand or time deposits or borrowings or other miscellaneous items of liabilities. As defined under Section 42 of the RBI Act, 1934, liabilities of a bank may be towards the banking system or towards others **Demand Liabilities** Demand Liabilities of a bank are liabilities which are payable on demand. These include current deposits, demand liabilities portion of savings bank deposits, margins held against letters of credit/guarantees, balances in overdue fixed deposits, cash certificates and cumulative/recurring deposits, outstanding Telegraphic

Transfers (TTs), Mail Transfers (MTs), Demand Drafts (DDs), unclaimed deposits, credit balances in the Cash Credit account and deposits held as security for advances which are payable on demand. Money at Call and Short Notice from outside the banking system should be shown against liability to others.

9.2.1.2 Time Liabilities Time Liabilities of a bank are those which are payable otherwise than on demand. These include fixed deposits, cash certificates, cumulative and recurring deposits, time liabilities portion of savings bank deposits, staff security deposits, margin held against letters of credit, if not payable on demand, deposits held as securities for advances which are not payable on demand and Gold deposits.

9.2.1.3 Other Demand and Time Liabilities (ODTL) ODTL include interest accrued on deposits, bills payable, unpaid dividends, suspense account balances representing amounts due to other banks or public, net credit balances in branch adjustment account, any amounts due to the banking system which are not in the nature of deposits or borrowing. Such liabilities may arise due to items like collection of bills on behalf of other banks, interest due to other banks and so on. If a bank cannot segregate the liabilities to the banking system, the entire amount has to be treated as ODTL **The balance outstanding in the blocked account pertaining to segregated outstanding credit entries for more than 5 years in inter-branch adjustment account, the margin money on bills purchased/discounted and gold borrowed by banks from abroad, should also be included in ODTL. Cash collaterals received under collateralized derivative transactions should be included in the bank's DTL/NDTL for the purpose of reserve requirements as these are in the nature of 'outside liabilities'**. Interest accrued on deposits should be calculated on each reporting fortnight (as per the interest calculation methods applicable to various types of accounts) so that the bank's liability in this regard is fairly reflected in the total NDTL of the same fortnightly return.

9.2.1.4 Assets with the Banking System Assets with the banking system include balances with banks in current account, balances with banks and notified financial institutions in other accounts, funds made available to banking system by way of loans or deposits repayable at call or short notice of a fortnight or less and loans other than money at call and short notice made available to the banking system. Any other amounts due from the banking system which cannot be classified under any of the above items are also to be taken as assets with the banking system.

9.2.1.5 Borrowings from abroad by banks in India Loans/borrowings from abroad by banks in India will be considered as ‘liabilities to others’ and will be subject to reserve requirements. Upper Tier II instruments raised and maintained abroad shall be reckoned as liability for the computation of DTL for the purpose of reserve requirements.

Liabilities not to be included for DTL/NDTL computation The under-noted liabilities will not form part of liabilities for the purpose of CRR and SLR:

- (a) Paid up capital, reserves, any credit balance in the Profit & Loss Account of the bank, amount of any loan taken from the RBI and the amount of refinance taken from Exim Bank, NHB, NABARD, SIDBI;
- (b) Net income tax provision;
- (c) Amount received from DICGC towards claims and held by banks pending adjustments thereof;
- (d) Amount received from ECGC by invoking the guarantee;
- (e) Amount received from insurance company on ad-hoc settlement of claims pending judgment of the Court;

- (f) Amount received from the Court Receiver;
- (g) The liabilities arising on account of utilization of limits under Bankers' Acceptance Facility (BAF);
- (h) District Rural Development Agency (DRDA) subsidy of Rs.10,000 kept in Subsidy Reserve Fund account in the name of Self Help Groups;
- (I) Subsidy released by NABARD under Investment Subsidy Scheme for Construction/Renovation/Expansion of Rural Godowns
- (j) Net unrealized gain/loss arising from derivatives transaction under trading portfolio;
- (k) Income flows received in advance such as annual fees and other charges which are not refundable;
- (l) Bill rediscounted by a bank with eligible financial institutions as approved by RBI.

COST OF CRR MAINTENANCE

There is an opportunity cost involved in maintaining CRR. Assuming the nominal cost of a deposit of Rs. 100 to be 8%, the applicable CRR will be Rs. 4 (4%). On this amount, the bank is not entitled to any interest. The cost to be recouped on the funds net of CRR (Rs 100-4) = Rs. 96 is Rs. 8, i.e. the deposit interest of Rs. 8. **This works out to 8.33% and is the effective cost of the deposit, although the nominal cost is only 8%. In general, the higher the CRR, the higher is the real cost of deposits.**

(c) Investment in the following instruments which will be referred to as "Statutory Liquidity Ratio (SLR) securities":

- (I) Notified Dated securities issued up to May 06, 2011;
- (ii) Treasury Bills of the Government of India;
- (iii) Dated securities of the Government of India issued from time to time under the market borrowing programmed and the Market Stabilization Scheme;

(iv) State Development Loans (SDLs) of the State Governments issued from time to time under the market borrowing programmed; and

(v) Any other instrument as may be notified by the Reserve Bank of India. Provided that the securities (including margin) referred to above, if acquired under the Reserve Bank - Liquidity Adjustment Facility (LAF), shall not be treated as an eligible asset for this purpose. Explanation:

1. For the above purpose, “market borrowing programmed” shall mean the domestic rupee loans raised by the Government of India and the State Governments from the public and managed by the Reserve Bank of India through issue of marketable securities, governed by the Government Securities Act, 2006 and the Regulations framed there under, through an auction or any other method, as specified in the Notification issued in this regard.

2. Encumbered SLR securities shall not be included for the purpose of computing the percentage specified above.

Provided that for the purpose of computing the percentage of assets referred to hereinabove, the following shall be included, via:

(i) securities lodged with another institution for an advance or any other credit arrangement to the extent to which such securities have not been drawn against or availed of; and,

(ii) securities offered as collateral to the Reserve Bank of India for availing liquidity assistance from Marginal Standing Facility (MSF) up to two per cent of the total NDTL in India carved out of the required SLR portfolio of the bank concerned.

3. In computing the amount for the above purpose, the following shall be deemed to be cash maintained in India:

(i) The deposit required under sub-section of Section 11 of the Banking Regulation Act, 1949 to be made with the Reserve Bank by a banking company incorporated outside India;

(ii) Any balance maintained by a scheduled bank with the Reserve Bank in excess of the balance required to be maintained by it under Section 42 of the Reserve Bank of India Act, 1934 (2 of 1934);

(iii) Net balance in current accounts with other SCBs in India. Reserve Bank periodically notifies the SLR status of securities issued by the Government of India and the State Governments at the time of issuance of the securities; **and) an updated and current list of the SLR securities is posted on the Reserve Bank's website (www.rbi.org.in) under the link "Database on Indian Economy"**. The Cash Management bill is treated as Government of India Treasury Bill and accordingly is to be treated as SLR security.

As regards classification and valuation of approved securities, banks may be guided by the instructions contained in our Master Circular (as updated from time to time) on Prudential Norms for Classification, Valuation and Operation of Investment Portfolio by banks. 9.3.3 Penalties **If a banking company fails to maintain the required amount of SLR**, it shall be liable to pay to RBI in respect of that default, the penal interest for that day at the rate of three per cent per annum above the Bank Rate on the shortfall and if the default continues on the next succeeding working day, the penal interest may be increased to a rate of five per cent per annum above the Bank Rate for the concerned days of default on the shortfall.

COST OF SLR MAINTENANCE

The impact of SLR on the cost of deposits depends on the yield on SLR investments. To arrive at the effective cost of SLR it is necessary to compare the current yield on SLR bonds and the cost of deposits. **If this spread is negative**, it would mean that the effective cost of deposits is more than the nominal cost. For example, if the current yield on SLR bonds is 8% and the cost of deposits is 9%, the loss is 1% on Rs. 18.50 (as SLR is 18.50%)

out of Rs. 100 of deposits, i.e., Rs. 0.185. This loss must be made good on the non-SLR asset portfolio of Rs. 81.5, which must yield $9.185/81.5 = 11.27\%$, to cover the cost of the deposit. A negative current yield spread on the SLR portfolio is significant as SLR accounts for 18.5% of the liabilities by mandate.

MONETARY CONTROL BY THE RBI

The RBI has several tools to inject liquidity into or withdraw liquidity from the market. Such operations are undertaken to bring liquidity and interest rates in line with the RBI's monetary policy and interest rate objectives. With the economy becoming more or less completely open to capital flows from abroad and their repatriation as well as capital outflows from residents, the short-term forex demand-supply balance has the potential to significantly affect the exchange rate, domestic liquidity and interest rates.

RISK ANALYSIS AND CONTROL Risk profile of the treasury activities consists of two broad categories viz. Financial Risk and Operational Risk.

Financial risks include market risks (interest rate risk, price risk, basis risk), credit risks, liquidity risks, etc. Operational Risks include systemic risk, compliance risk, legal risks, IT risks, fraud risks, etc. For mitigation of such risks, various prudential guidelines prescribed by the regulators and internal policies and procedures laid down by the management are to be scrupulously followed. Most of the treasury activities, like investments in bonds, forex positions, etc., predominantly involve high degree of market risks than credit risks.

Factors Affecting Exchange Rates

- Macroeconomic, social and political influences
- Exchange control regulations and exchange rate policy

- Balance of payment and balance of trade
- Relative price and inflation
- Assets market
- Interest rate difference between the relative currencies
- Anticipations and economic estimates of input variables
- Other factors, e.g. political developments like war, change in the government, official intervention, restriction on capital flows, change in productivity levels, fiscal and monetary policy of the government and underlying psychology of the market operators.

Factors Affecting Interest Rates

- Macroeconomic, social and political influences
- Fiscal and monetary policy measures of the Government and central bank
- Demand for money, which is dependent on growth rate, economy, etc.

Government borrowings

- Supply of money, depending on price level, incentives to save, etc.
- Inflation rate

Treasury risk management assumes importance for two reasons :

(I) The nature of treasury activity is such that profits are generated out of market opportunities, and market risk is present at every step.

(ii) Treasury is also responsible for balance sheet management, i.e. market risk generated by other operational departments. Bank management is highly sensitive to treasury risk, as the risk arises out of high leverage the treasury business enjoys. The risks of losing capital are much higher than, say in the credit business. In the case of a loan, the risk is limited to the principal and interest, which may be lost, fully or partly, over a period of time. Bank's capacity to extend loans is limited by the high capital requirement, a minimum of 9% of

the loan amount; hence the losses are also correspondingly limited. **Treasury on the other hand has a very low capital requirement, which is known as high leverage.** For instance, treasury can buy and sell foreign exchange of value of Rs. 1000 cores with as little capital as Rs. 90 laths. But at the same time, an adverse movement of the exchange rate by Re.1 may result in a loss of Rs. 10 crore to the bank - which is a straight loss of capital. A second reason for management concern is large size of transactions done at the sole discretion of the treasurer. A single transaction may range from Rs. 5 cores to Rs. 50 cores (even more in larger banks). The limits are intimated to the treasurer in advance, and individual market deals rarely need specific approval from the management. **If the treasurer commits an error of judgment, consequent losses to the bank would be enormous.** A third factor closely connected to the above is that the losses in treasury business materialize in very short term, and, the transactions, once confirmed, are irrevocable - hence no corrective actions is possible. Particularly in foreign exchange, market reacts so fast that profits or losses on trade deals are almost instantaneous. It is for the above reasons that not only bank management, but also the central banks are concerned with treasury risk management.

The conventional control and supervisory measures, mostly in the nature of preventive steps, can be divided into three parts:

- Organizational controls
- Exposure ceiling
- Limits on trading positions and stop-loss limits

10.2 OPERATIONAL RISK

This covers the entire gamut of the transaction cycle from dealing to custody. Operational risk can again be divided into those arising from :

- System deficiencies, authorizations, based on approved delegation of powers, must integrate with work and document flows. This ensures that individual compliance with laid-down procedures and authorizations for dealing, settlement and custody;
- fraudulent practices involving deals and settlements;
- IT involving software quality, hardware uptime; and
- legal risks due to inadequate definitions and coverage of covenants and responsibilities of the bank and counterparty in contracts and agreements.

10.2.1 MITIGATION

- Dealers must operate strictly within the single deal, portfolio and prudential limits set for the instrument and counterparty. Stop loss and risk norms of duration and value at risk should be adhered to at all times.
- No deviation from approved and implemented work and document flows should be allowed.
- The necessary authorizations must accompany documents as they pass from one stage of the transaction cycle to the next.
- Delegation of powers must be strictly adhered to. Deals or transactions exceeding powers must be immediately and formally ratified in accordance with management/board edicts on ratification.
- The prescribed settlement systems in each product/instrument and market must be followed. Deviations from delivery and payment practices should not be allowed.
- Computer systems - hardware, networks and software should have adequate backups. They should be put through periodic stress tests to determine their ability to cope with increased volumes and external data combinations.
- Custodian's creditworthiness is paramount in demit systems of records of ownership and transfer. Custodial relationships should be only with those with the highest credit rating.

- Counterparty authorizations/powers of attorney must be kept current.
- The list of approved brokers should be reviewed periodically to satisfy the bank's credit standards and ethics. In equity transactions, the broker is the counterparty. Settlement must be of the delivery against payment type.
- Deal, transaction and legal documentation should be adequate to protect the bank, especially in one-off transactions and structured deals.

10.3 FINANCIAL RISKS The following identifies and defines individual financial risks:

10.3.1 CREDIT RISK The oldest of all financial risks in its simplest form, refers to the possibility of the issuer of a debt instrument being unable to honor his interest payments and/or principal repayment obligations. But, in modern financial markets, it includes non-performance by a counterparty in a variety of off-balance sheet contracts such as forward contracts, interest rate swaps and currency swaps and counterparty risk in the inter-bank market. These have necessitated prescribing maximum exposure limits for individual counterparties for fund and non-fund exposures.

MITIGATION

- Better Credit appraisal. Careful analysis of cash flows of the business before investing.
- Investing only in rated instruments
- Risk pricing
- Credit enhancement through margin arrangements, escrow accounts etc.

Guarantees/letters of credit from rated entities

Adequate financial and/or physical assets as security

- Exposure limits by counterparty, industry, location, business group, on and off balance sheet

- Diversification by industry, sector, location and so on
- Exposure limits for individual bank counterparties for funded/non-funded assets
- Reputation and image of counterparties
- Collateralization of transactions through repos

10.3.2 LIQUIDITY RISK

- An asset that cannot be converted into cash when needed is liquidity note which is the normal characteristic of the vast majority of bonds.
 - There is also the risk of scarcity of funds in the market. This could happen, for example, when the RBI deliberately tightens liquidity, by increasing CRR, selling securities or forex.
 - A third situation is when a bank’s creditworthiness becomes suspect and there are no willing lenders, even though there is no liquidity shortage in the market. **MITIGATION** Increase the proportion of investments in liquid securities
 - Increase the proportion of investments in near-maturity high quality instruments
 - Maintain credit rating, reputation and image Securitize loan portfolio of large as well as small borrowers

10.4 MARKET RISK

- A generic term to describe both interest rate risk and event (“systemic”) risk.

10.4.1 **EVENT RISK** The risk that an unexpected happening, which is extreme, sudden or dramatic (e.g., September 11 terrorist attacks, tsunami), will cause an all-round fall in market prices.

MITIGATION

□ Increase the proportion of assets in risk-free, high position, equity share or a portfolio of these instruments.

10.5 RISK MANAGEMENT : RBI GUIDELINES/NORMS

The RBI has circulated detailed guidance notes on Market Risk Management, Asset Liability Management and Credit Risk Management.

According to these,

(a) Banks are required to send monthly reports covering liquidity mismatches and interest rate sensitivity.

(b) Banks are required to pay special attention to liquidity risk and management and monitor the following:

(a) Call Borrowing/Lending

(b) Purchased Funds vis-a-vis Liquid Assets

(c) Core Deposits vis-a-vis Core Assets, i.e., CRR, SLR and Loans

(d) Duration of Liabilities and Investments

(e) Maximum Cumulative Outflows across all time bands

(f) Commitment Ratio - on and off B/S

(g) Swapped Funds Ratio, i.e., extent of liabilities from forex sources.

10.5.1 RISK MANAGEMENT IN BANKS

(a) Banks have an Asset-Liability Management Committee (ALCO), which manages gap, interest rate, liquidity and currency risks of the treasury and non-treasury balance sheets.

(b) The banks submit monthly statements to the Board and RBI on liquidity mismatches and interest rate sensitivity.

(c) Stop loss levels are fixed for both SLR and non-SLR securities.

(d) Bank undertakes concurrent audits of securities and funds management transactions. These findings/reports are put up to the Audit Committee of the Board every quarter.

(e) The Investment Committee reviews the investment portfolio every half-year, with emphasis on rating migration and portfolio quality.

(f) The Treasury Department is subject to periodic inspection.

(g) The panel of brokers is reviewed annually.

(h) The software package used by treasury is system-audited at regular intervals to test its ability to cope with new products and instruments, scale of operations and outlying data and conditions.

(i) The functions of front-office, settlement back-office, mid-office and accounts are completely segregated.

(j) Deals are backed by deal slips, and office memos containing approvals by competent authority.

(k) Defaults/arrears in interest/principal on bonds are monitored and reported to appropriate authorities.

(l) A bank will fully comply with all the RBI's guidelines, regulations and rules governing

the investment portfolio.

(m)The RBI has now finalized norms for risk-based internal audit systems. Banks have been asked to move to the new system from the first quarter of 2003.

10.5.2 ASSET-LIABILITY PRICING

Bank's liabilities are principally customer's deposits of the demand (current, savings) and time categories. Time deposits could be of maturities from as little as 7 days to 10 years.

Deposit pricing is a function of:

- (a)Money market rates;
- (b)Interest rates/yields on risk-free securities, i.e., Government of India bonds;
- (c)Maturity;
- (d)Shape of the yield curve;
- (e)Rate offered by competitors; and
- (f)Rates on alternative fixed income instruments.

The ALCO of the bank decides on the deposit rates after taking into account all the above factors. The rates should give a spread to the bank on the asset side. Ideally speaking, deposit rates should be at or less than money market rates as the latter represents the opportunity cost of funds for the bank. This necessitates close liaison between head office and treasury on the one hand and treasury and branches on the other.

10.5.3 ADDING NEW PRODUCTS

Dealing in new products should be suitably authorized - informally at first if there is time pressure - and ratified immediately thereafter. Key steps to be gone through in this process are:

- (a) Approval for dealing in the new product - whether one-off or on a regular basis;
- (b) Procedures for credit clearance in general, and limits specific clearances;
- (c) Check if within existing regulations or guidelines, or specific then RBI approval is required;
- (d) Ensure that bank's investment/treasury policies are not transgressed;
- (e) Assess and identify specific risk factors associated with the new product;
- (f) Evolve pricing approaches and models;
- (g) Specify settlement procedures;
- (h) Specify custodial responsibilities and follow-up of obligations of and to the bank;
- (I) Accounting; and (j) Develop Software.

10.6 FOREX (MARKET) RISK

The forex market is probably the most consistently volatile of all financial markets. While it offers enormous scope for making profits, the other side of the coin is the risk of big losses from unexpected swings in exchange rates. This necessitates an effective forex risk management system involving: (a) fixing exposure limits by currency and maturity; (b) continuous market monitoring with reference to the bank's open positions; and (c) closing loss positions, if stop loss limits/Vary are breached. For supporting the above, it is necessary to have adequate data-gathering systems in place to measure currency-wise exposures and their maturities.

The following determine the forex risk exposure of the bank:

- (a) Open Positions;

- (b) Gap (Interest Rate/Swap) Risk;
- (c) Counterparty (Credit) Risk;
- (d) Settlement Risk;
- (e) Country Risk;
- (f) Value-at-Risk;
- (g) Operational Risk; and
- (h) Legal Risk.

10.6.1 OPEN POSITIONS AND GAPS

(a) The main source of forex risk is the bank's open positions in individual currencies. An open position is a completely unhedged exposure in a currency. For example, if the bank has bought USD and sold INR, it is long USD and short INR - in effect it has a USD asset and INR liability. Thus, if the USD appreciates against the rupee, the bank gains, but if it depreciates, the bank loses. On the other hand, if the bank has sold USD and bought INR, it is exposed to the risk of USD appreciation. **A perfect hedge in this situation is if the bank has offset a long USD position with a USD sale. Now it runs no currency risk: there is no open position.** The same definition and analysis applies to cross-currencies - USD/JPY, EUR/USD, GBP/USD, etc. - as well. Dealers do a host of transactions in different currencies in the interbank market or for customers. In view of the large volumes, transactions offset one another leaving net open (uncovered) positions in various currencies. **Treasury Front-Office** maintains and manages all the forex positions of the bank. When the dealing room closes "shop" everyday, the open position for each currency is arrived at. It is essential to ensure that this should be within the approved limits; otherwise it should be justified and ratified in accordance with the delegation of powers. Dealers may or may not cover customer's deals immediately, depending upon the market situation, movements and dealers views on markets. If not covered, they add to the bank's

open position. Thus, the forex deal book of the bank is a portfolio of longhand short forex positions in different currencies.

These positions vary in amount and maturity. Spot deals mature in two working days (as of trade day) and forwards may mature any time up to six months or even a year. Long and short positions in a currency maturing on the same date (“natural hedges”) will partly offset one another leaving a net open position. Formally, the net open position in a currency is: Net spot position (assets less liabilities in the currency including accrued income and expenditure) Net forward position (forward assets less forward liabilities, including swaps, options, futures, etc). + Unsettled spot contracts (spot asset less spot liability positions) + Crystallized off-balance sheet liabilities (L/Cs, guarantees, etc.) + Net open position The net position in each currency is summed, with the longs on one side and the shorts on the other. This is done in the base currency, USD. The higher of the aggregate longs and aggregate shorts is the open position of the bank. To this should be added the open position in gold (if any). The total open position must be within the board-approved limit for open forex positions. In assessing risk in a forex portfolio, cross-currency positions (e.g., USD/JPY, euro/USD) must be isolated from USD/INR positions. The issue then is whether to convert all non-dollar assets/liabilities into USD assets/liabilities (and keep only USD/INR risk) or vice versa (and keep cross-currency risk).

(b) **Open Position Limits Daylight** Daylight open positions, as the name suggests, are exposures that are opened in the course of a trading day and will invariably be closed (squared) before the close of the day. Daylight exposures may last only for a few seconds, minutes or hours and arise when dealers try to take advantage of volatility during a trading session, either in the domestic (USD/INR) market or Far East, European or US markets, if trading in the crosses.

Thus, the bank may buy USD 1 mio. and sell equivalent INR at 10 a.m. for Rs.64.75 and sell USD 1 mio., buying INR, for Rs.64.80 at 11 a.m. for a profit of Re. 0.05/USD. The bank has an open position of USD 1 mio. for one hour till the transaction is squared and risks USD depreciation during this time.

Overnight positions are positions carried over from one trading day to the next. If the bank elects not to close positions at the close of trading, it has an overnight exposure. O/N exposures are monitored on a real time basis. All O/N open positions carry 100% risk weight.

10.6.2 Gap (Interest Rate/Swap)

Risk Period mismatches in a currency pair result in interest (or swap) rate risk. If the bank has long USD/INR three months and short USD/INR six months (same amount), there is no open position, but on maturity of the long (three-month) contract, there will be a gain or loss depending on: whether spot USD/INR is more or less than the originally contracted three-month forward; and whether the three-month swap rate for three months after three months (3×6) is more or less than the original swap differential when the three-month and six-month positions were created. A fall in the forward discount on INR/USD (or, to put it differently, fall in the forward premium on USD/INR) could have been because INR interest rates are coming down or USD interest rates going up (or both). The point is that movements in interest rates affect forward premiums or discounts. A long forward position is adversely affected if interest rates in the long currency go up and vice versa. Or, as is won't in the Indian situation, the forward premiums or discounts are driven more by expectations than interest differentials. Thus, if the market expects USD/INR to fall (rise), forward premiums on USD/INR will fall (rise). The same principle applies to maturity

mismatches in asset and liability flows in a currency. If assets mature ahead of liabilities, there is reinvestment risk, i.e., new assets may not yield as much as existing assets. Conversely, when liabilities mature earlier, refinancing risk arises because liabilities may increase in cost. This underlines the need to monitor and forward a plan to manage the interest rate risks inherent in mismatched forward

forward contracts and cash flow positions. Forex risk management in the bank is edifice as follows:

(a) Identification of Risk Factors by Product and Risk Measure

(b) Identification of Risk Management Responsibilities by Function Credit Risk Exposure Measurement All forward and derivative contracts must be valued at replacement cost (i.e., marked to market).

The RBI has suggested the original exposure method or current exposure method for the purpose. The latter contains a provision for changes in future credit exposure as well.

10.6.3 Customer Credit Risk In merchant transactions, credit risk is the responsibility of the branches from which the transactions originate. Branches will have to credit appraise customers before putting through deals on their behalf. **10.6.4 SETTLEMENT RISK**

Settlement risk arising from time differences between trading zones, which may result in one of the parties to a transaction having to settle ahead of the other party, i.e., debit and credit are not synchronized. To some extent (but not completely), this is mitigated by the exposure limits fixed for each inter-bank counterparty.

10.6.5 COUNTRY RISK Country risk is the possibility that a country or bank in a country will not be able to honor obligations due to shortage of foreign exchange or political risk.

The RBI has asked banks to measure, monitor and control country exposures. It requires specific responsibility and accountability in the organization structures of the bank for country risk management. The RBI's principal norms with regard to country risk are summarized below:

- Monitoring and management are necessary only for countries where the net funded exposure is 1% of total assets.
- Country risk is part of counterparty risk. Thus, apart from credit risk with regard to individual borrowers, banks should factor in the country risk of the host country of the bank's branch or the borrower.
- Over a period of time, the bank must develop internal ratings for country risk. They, however, should not exceed the international rating of individual countries.
- In the meanwhile, banks may use the ECGC's seven category classification of country risk.
- Banks must fix country exposure limits in relation to their Tier I and II capital as well as by product, maturity buckets and branches. These must be reviewed at least once a year. Individual limits should not be more than the regulatory capital requirements of the concerned country.
- Country exposures should be monitored weekly in the beginning and then real-time. High risk countries should be put on real-time monitoring.
- Country portfolios should be subject to stress tests. The bank should have contingency plans and exit strategies to manage emergent situations, especially in high risk category countries.
 - Exposures of the bank's foreign branches to the host country must be included.
 - Exposures to the bank's foreign subsidiaries should be within the applicable country risk limits.

□ Specific provisioning norms for the six categories of country risk have been stipulated. The provisioning needs to be only 25% of the norm for exposures maturing within 180 days. This is in addition to those for other assets.

□ Provisioning out of Tier II capital should not exceed 1.25% of risk weighted assets. The following disclosures are mandatory: □ Country exposures by risk category □ Aggregate provisioning for country risk □ Country exposures form part of the DBS returns to the RBI.

10.6.6 LEGAL RISK Standard agreements govern forex contracts in the domestic and international markets, the main being:

- (a) For Spot and Forward Foreign Exchange International Foreign Forward Foreign Exchange International Foreign Exchange Nostrum Agreement (IFENA)
- (b) Foreign Exchange Options International Currency Options Agreement (ICOM)
- (c) All others including Derivatives Internal Swap Dealers' Association Master Agreement (ISDA Master Agreement) Disputes and arbitration in international courts/tribunals will be governed by covenants and obligations in the above agreements.

10.7 OPERATIONAL RISK AND CONCURRENT AUDIT

As required by the RBI, the banks carry out concurrent audit of all forex transactions. Auditors are required to give daily and monthly reports covering : □ Compliance with approved open position limit □ Compliance with overnight exposure limits □ Compliance with aggregate and individual gap limits □ Compliance with value at risk norms.

FRONT OFFICE,MID OFFICE,BACK OFFICE-

Treasury deals with a lot of money. It is, therefore, essential that there are in-built checks and balances within the organization such that treasury is efficient. For this purpose, treasury has to be organized into three main divisions namely, **the Dealing Room (or, Front Office), the Back Office (or, Treasury Administration) and the Middle Office.** These departments report independently to a functionary above the Chief Treasurer in the hierarchy. Typically a middle office to the CEO, back office to the COO and Chief Dealer to the Head Treasury.

11.1 FRONT - OFFICE The scope of functions of front-office, as the name itself states, is to buy, sell and trade in money market instruments, securities, forex, equity, derivatives and precious metal. The decisions in regard to any restructuring, reorganizing, prepayment, etc. are taken at front-office. The front-office dealers keep track of and develop their views on different asset classes, securities, currencies, derivative products which are put up to Department Head/Investment Committee for arriving at trading/strategic investment entry/exit decisions. In nut-shell, the front office of a treasury manages transactions facing external market. The front office of a treasury has a responsibility to manage investment and market risks in accordance with instructions received from the bank's ALCO. This is undertaken through the Dealing Room which acts as the bank's interface to international and domestic financial markets. The Dealing Room is the center for market and risk management activities in the bank. It is the clearing house for risk and has the responsibility to manage the treasury risks taken in all areas of the bank, on behalf of customers, and on behalf of the bank, within the policies and limits prescribed by the Board and Risk Management Committee. For this reason significant authority is given to the 'Treasurer' and the Dealing Room staff to commit the bank to market. Treasury also functions as a profit center of the bank. It is, therefore, important that the treasury is managed efficiently. In view of this, control

over the activities of the treasury and its staff are critical to ensure that the bank is protected from undue market risk.

11.2 DEALING FUNCTIONS

The Dealing functions are, normally headed by Chief Dealer. A number of Dealers work under the chief dealer. They undertake to buy and sell in the markets. A Dealer may specialize in one of the markets, i.e. foreign exchange, money market or securities market, although, in an integrated treasury, dealers are generally familiar with all the markets. The dealing room is equipped with modern infrastructure, information screens, and trading architecture. Dealers are governed by exposure limits, stop loss limits and other guidelines within which each dealer is, generally free to buy and sell in allotted area/currency/security. A dealer's role is restricted to that of negotiating and agreeing to a transaction. On completion of this, a deal slip is prepared giving the details of counterparty, amount of transaction, security and currency details. This deal slip is sent to the back office for executing the transaction. A copy of the deal slip is also forwarded by the dealer to the concerned counterparty.

The Front-office functions can be summarized as under:

- (a) Significant interaction with various trading and delivery teams;
- (b) Liquidity Management;
- (c) ALM implementation;
- (d) Striking of Deals (trading) and earning profits from trading;
- (e) Maintenance of CRR and SLR;
- (f) Follow 'When Issued Securities' place order and square up the order well in time against future holding;

(g)Manage short selling and square off the securities well in advance; and (h)Reporting to respective authorities.

11.3 MID-OFFICE

Mid-office is responsible for onsite risk measurement, monitoring and management reporting. The other functions of Mid Office are:

- (a)Limit setting and monitoring exposures in relation to limits;
- (b)Assessing likely market movements based on internal assessments and external/internal research;
- (c)Evolving hedging strategies for assets and liabilities;
- (d)Interacting with the bank's Risk Management Department on liquidity and market risk;
- (e)Monitoring open currency positions;
- (f)Calculating and reporting VAR;
- (g)Stress testing and back testing of investment and trading portfolios;
- (h)Risk-return analysis; and

(I)Marking open positions to market to assess unrealized gain and losses. Mid-office is responsible for critical analysis of investment operations. It prepares liquidity ladder to assess the bank's liquidity position at various intervals for arresting asset-liability mismatch so as to enable the management to adopt a suitable and appropriate strategy. **In fact, mid-office works as the Secretariat to the Asset Liability Management Committee (ALCO)** to enable the management to understand market, liquidity, interest/exchange rate risks associated with the treasury operations. As distinct from front office, Middle Office is not transaction oriented and deals exclusively with risk management. It is created exclusively to provide information to the management (MIS) and to implement risk management systems. Middle Office monitors exposure limits, stop loss

limits, Vary and other risk measures of Treasury and reports to the management on key parameters of performance

11.4 BACK- OFFICE OPERATIONS The key functions of back-office are:

- (a) Deal slip verification;
- (b) Generation and dispatch of interbank confirmations ;

- (c) Monitoring receipt of confirmations from counterparty banks;
- (d) Monitoring receipt of confirmations of forward contracts;
- (e) Effecting/receiving payments;
- (f) Settlement through CCIL or direct through nostrum as applicable;
- (g) Monitoring receipt of forex funds in interbank contracts;
- (h) Statutory reports to the RBI;
- (I) Management of nostrum funds to advise latest funds position to enable the F/O to take the decision for the surplus/shortfall of funds;
- (j) Reconciliation of nostrum/other accounts;
- (k) Monitoring approved exposure and position limits; and
- (l) Accounting.

The Back-office is responsible for confirmation, verification and settlement of the deals concluded by the dealers. The deals are verified on the basis of deal slips prepared by the dealers with reference to the confirmation received from the counterparties. The back office also confirms the deals independently with the counterparties (banks and other institutions) over phone and verify the authenticity of the confirmation document. The Back-office takes care of all activities related to putting through the transaction, book keeping and submission of periodical returns to RBI, demit accounts with depository participants and ensures that adequate margin is maintained with Clearing Corporation of

India for Rupee and dollar settlements. An important function of back office is settlement of deals. This refers to receipt and payment of amounts following deals made by dealers (i.e. sale and purchase of foreign currency, lending and borrowing, sale and purchase of securities etc.). Settlements is a key function of Back-office, as all payments and receipts must take place on value date. Any delay in settlement would result in financial loss to the bank, and delays in payment are considered a default by the bank, severely affecting the bank's reputation. Though treasury functions are integrated the settlement function of markets such as call money, securities and foreign exchange is distinct. There are specific performances linked to each of these markets. The back office ensures that settlement in each market is carried out as per market practices.

The Back office functions for various transactions in respect of forex, money market and securities market are given below.

Forex Treasury : In the case of forex treasury deals, back office looks after foreign exchange settlement, and interbank confirmations. It maintains Nostrum mirror ledgers, returns, merchant forward contracts, advance bills EEFC, reporting forms, receipt receipt from branches regarding purchase and sale of foreign exchange transactions, FBP reversals, interbank transactions, preparation of detailed reports on currency positions at end of the day, preparation and maintenance of fund's chart, statement of maturity pattern of contracts, maturity-wise analysis of deals etc. It monitors each day's receipts and payments of foreign funds and counter values and undertakes reconciliation of interbank transactions. Back office monitors receipt of exchange brokers' notes for deals concluded through them which are checked with corresponding deal slips immediately on receipt. Discrepancies, if any, observed in the particulars of the deals with those furnished in broker's notes are brought to the notice of concerned dealers and corrective action is taken.

Statement giving broker-wise summary of deals put through during the month and brokerage payable to each broker are generated on computer/prepared manually at the end of each month. This will be compared with broker-wise limits previously approved to ensure that there is no deviation.

Back office also generate and send confirmations to counterparty banks for deals done on each day. On receipt of confirmation of contracts from the counterparty banks, back office officials recheck accuracy of the particulars of the deals furnished therein.

As a part of its routine, back office checks all the deals prepared by the dealers and verify particulars of direct deals done in the interbank market with Telex/Reuters Printout.

The back office also checks the rates quoted by the dealers vies-a-vies, the card in respect of merchant transactions reported by the branches and also verifies rates quoted on merchant forward contracts booked and cancelled during the day. Forex hourly rates (both for major currencies and exotic currencies) are prepared/generated by computers to undertake random checks of some deals with reference to those rates to find out any significant variations in the rates quoted for those deals.

A register is maintained to keep an account of deal slips used, cancelled and keyed in the computers. Number of deals done should tally with number of slips used and the same is tallied with the number of deals keyed in the computer. Opening balance of the printed stock of deal slips in hand minus slips used and cancelled during the day should tally with printed stock of deal slips in hand at the end of the day. Verification of deals as per dealer's pad and those recorded in Position Book is done at the end of day.

Backup staff check every computer printouts. Addition/alterations by hand/manually should not be allowed for obvious reasons. However, if there are compelling reasons, the same should be done under the instructions of appropriate authority and should be properly authenticated by the concerned official. Co-ordination & Control : There should be proper

co-ordination between the back office and dealing room. This revolves around proper monitoring of the day light limits, overnight limits, counterparty bank limits, country limits etc. Cases where these limits are exceeded should be studied, reasons for exceeding the limits should be ascertained from the dealers and should be reported to the Top Management without delay. True position statements (currency-wise) as of last Friday of each month should be generated for all transactions including transactions of small amounts (specified as per card rates - not reported by the branches over telephone or telegram on the date of deals done) reported by branches in reporting forms for submission of international division, for proper monitoring of currency positions.

SWIFT & Computer System : The backup department should be equipped with SWIFT System through which Nostrum Account Balances with all correspondents are received daily in the morning and various receipts/payment messages are received/transmitted daily from/to the overseas banks. SWIFT system is also used for confirmation of interbank deals.

Specimen Signatures : Specimen signatures of all authorized officials of counterparty banks (who should not be dealers) branch officials and authorized broker should be kept on record. Checking of signatures of officials of banks who are signing confirmation should be scrupulously undertaken. Banks/counterparties who do not provide signature on confirmations (computerized sheets etc.) should be asked to advise their practice in writing about authorized signatures and furnish suitable indemnity as prescribed by the Foreign Exchange Dealers Association of India. This indemnity should be kept in a safe place carefully. Similarly it should be verified for deals done with branches and brokers. Rate scan report should be prepared by backup department as per RBI Guidelines for Internal Control over Foreign Exchange Business. This report is generated for different time slots through the printer attached to the Reuters Monitor Screen.

DOCUMENTATION Proper documentation relating to all investment transactions need to be maintained. Records of deals entered into, i.e. deal slips, deal confirmations, voice recordings, reconciliations etc. need to be maintained in addition to approved documented policies/procedures/manuals as follows: Investment Policy: Banks should frame Internal Investment Policy Guidelines and obtain the Board’s approval. The investment policy may be suitably framed/ amended to include Primary Dealer (PD) activities also. Within the overall framework of the investment policy, the PD business undertaken by the bank will be limited to dealing, underwriting and market-making in Government Securities. Investments in Corporate/PSU/FI bonds, Commercial Papers, Certificate of Deposits, debt mutual funds and other fixed income securities will not be deemed to be part of PD business. Risk Management Policy: A detailed risk management policy needs to be framed and kept on record. The Policy should be duly approved by the Board and should cover all types of risks, like market risk, liquidity risk, interest rate/ exchange risk, credit risk, operational risk, compliance risk, etc. The broad parameters of risk management function should encompass:

- (a) organizational structure,
- (b) comprehensive risk measurement approach,
- (c) risk management policies should be consistent with the broader business strategies, capital strength, management expertise and overall willingness to assume risk,
- (d) guidelines and other parameters used to govern risk taking including detailed structure of prudential limits,
- (e) strong MIS for reporting, monitoring and controlling risks,
- (f) well laid out procedures, effective control and comprehensive risk reporting framework,
- (g) separate risk management framework independent of operational Departments and with

Basel III & Liquidity Ratios:

Realising the importance of Liquidity and its connected risk, BCBS has come out with two Liquidity Ratios and they are:

a. Liquidity Coverage Ratio (LCR)

b. Net Stable Funding Ratio (NSFR)

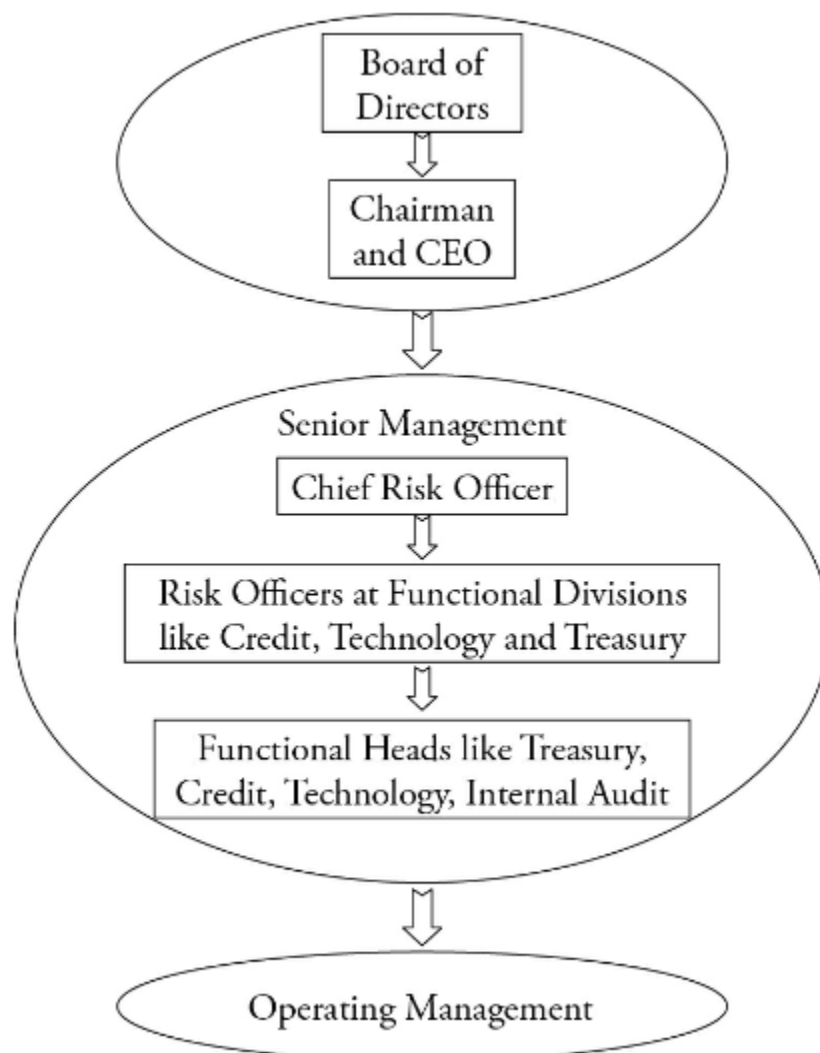
a. **Liquidity Coverage Ratio:** The objective of the LCR is to promote the short-term resilience of the liquidity risk profile of banks. It does this by ensuring that banks have an adequate stock of unencumbered **high-quality liquid assets (HQLA)** that can be converted easily and immediately in private markets into cash to meet their liquidity needs for a 30 calendar day liquidity stress scenario. The LCR would improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source, thus reducing the risk of spill-over from the financial sector to the real economy.

b. **Net Stable Funding Ratio (NSFR):** The second objective of BCBS (the first objective being LCR) is to promote resilience over a longer time horizon by creating additional incentives for banks to fund their activities with more stable sources of funding on an ongoing basis. The NSFR supplements the LCR and has a time horizon of one year. NSFR limits over reliance on short-term wholesale funding, encourages better assessment of fund risk across all on and off balance sheet exposure and promotes funding stability. It has been developed to provide a sustainable maturity structure of assets and liabilities.

Leadership ensures that the organization has capabilities to accomplish the mission of managing risks. The key to risk management is that the top management should direct with well-structured methodology and effectiveness.

Risk Organization

An illustrative structure for risk organization may be as under:



Particularly for Treasury Function, it should be clearly divided into three areas:

1. Dealing Room, where deals are struck by the Dealers and all the dealers have to report to the Head of the Treasury.
2. Back Office, where functions like deal confirmation, accounting, reconciliation areas are attended. Staff working in this department will have to report to the Head of the Treasury.
3. Mid Office, which acts a watch dog of Dealing Room. Even though this section is situated in the Treasury, the staff of this section would be reporting to the Head of Risk Management. Such an arrangement is made in order to make impartial reporting of the Treasury Operations to the Top Management.

It must be stated that the list is illustrative and not exhaustive.

Internal Audit Functionaries

