

Advanced Module: Treasury Management

(Including Forex Treasury)

PART-I

Treasury – An Overview

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PART-II

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3. Exchange Rate movements – volatility of major currencies
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PART-III

Classification of Treasury Market

-Broad classification of Treasury Market

- Domestic or National Treasury market and
- Forex or International Treasury.
- Features, Products, Dimensions, Ideal Ticket Size, Regulatory Framework.

Domestic and International Treasury Markets

-Domestic or National Treasury Market

1. Capital Market primary and secondary Issues
2. Issue of GDR
3. Money market
4. Commodity market
5. Government Securities Market

-International Treasury Market

6. Market participants
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PART-IV

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- Market practices & FIMMDA guidelines

-Foreign Exchange (Forex) Markets

- Different kinds of Forex markets,
- History of Forex Markets,
- Nature of transactions – cross border currency flows relating to capitalmarket, world trade and speculative
- Liberalisation of exchange control regime
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- Derivatives and also Interest Rate Derivatives

PART-V

Treasury Products& Regulatory Provisions

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- Factoring
- Forfeiting
- Bill discounting
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PART-VI

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- Forwards, Futures and FRAs
- Use of derivative products like interest rate futures and currency futures
- Collars, Options
- Futures & Options their uses - Indian and Overseas Markets

PART-VII

Risk Management & Risk Framework – Treasury and Forex

- Assets Liability Management(ALM) – bridging liquidity and interest rate sensitivity gaps
- ALM Book – Merchant book & Trading Book
- Liability Management, using interest rate derivatives
- Treasury Risk Management Policy,
- Treasury Organisation –Front Office, Back Office and Middle Office
- Control and Reporting requirements
- Open position – day-end, day-light and overnight position limits – limit orders with other banks
- Mismatch of positions – gap limits (IGL – Individual Gap Limite and AGL – Aggregate Gap Limit) and stop loss limits VaR& capital provisions
- Developing Risk Framework for Organizations and Individual issue of Instruments
- Monitoring risks in open positions – Risk limits
- Exposure limits

- Foreign Exchange exposures to Risk and its Management
- Credit risk, country risk, operating risk and market risk
- Approach to Forex Risk Management Policy
- Developing Risk Framework for Forex Transactions
- Implications of BASEL III on capital requirement
- FEDAI Rules – RBI guidelines for Internal Control
- Hedging strategies – mandatory and optional hedging – transaction-wise / portfolio-wise risk management

PART-I

Treasury – An Overview

Treasury-Evolution, Importance & an Ideal Treasury Department

Treasury management (or treasury operations) includes management of an enterprise's holdings, with the ultimate goal of maximizing the firm's liquidity and mitigating its operational, financial and reputational risk. Treasury Management includes a firm's collections, disbursements, concentration, investment and funding activities. In larger firms, it may also include trading in bonds, currencies, financial derivatives and the associated financial risk management.

Most banks have whole departments devoted to treasury management and supporting their clients' needs in this area. Until recently, large banks had the stronghold on the provision of treasury management products and services. However, smaller banks are increasingly launching and/or expanding their treasury management functions and offerings, because of the market opportunity afforded by the recent economic environment (with banks of all sizes focusing on the clients they serve best), availability of (recently displaced) highly-seasoned treasury management professionals, access to industry standard, third-party technology providers' products and services tiered according to the needs of smaller clients, and investment in education and other best practices.

For non-banking entities, the terms *Treasury Management* and *Cash Management* are sometimes used interchangeably, while, in fact, the scope of treasury management is larger (and includes funding and investment activities mentioned above). In general, a company's treasury operations come under the control of the CFO, Vice-President / Director of Finance or Treasurer, and are handled

on a day to day basis by the organization's treasury staff, controller, or comptroller.

Bank Treasuries may have the following departments:

- A Fixed Income or Money Market desk that is devoted to buying and selling interest bearing securities
- A Foreign exchange or "FX" desk that buys and sells currencies
- A Capital Markets or Equities desk that deals in shares listed on the stock market.

In addition the Treasury function may also have a Proprietary Trading desk that conducts trading activities for the bank's own account and capital, an Asset liability management (ALM) desk that manages the risk of interest rate mismatch and liquidity; and a Transfer pricing or Pooling function that prices liquidity for business lines (the liability and asset sales teams) within the bank.

As businesses recover from the global meltdown, treasury management is becoming essential. Treasury management has long been an important aspect of many corporations' financial management. It ensures the business is accurately tracking its daily sales and payments in an effective manner, while also having sufficient liquidity to meet both expected and unexpected financial obligations.

Significant changes to regulation that will be coming into force in the following years are set to transform the ways in which treasury managers do their jobs. These regulations, in particular Basel III, will affect how Treasury Management Systems (TMS) are utilised, and how important they are perceived to be.

The industry is facing a period of change as the way companies employ treasury management is shifting. There are more choices of which system a company wishes to use, as well as how they install it. The cloud is opening up opportunities for outsourcing at lower costs than creating or buying an in-house treasury management system. Companies can opt for ever-more customizable systems that particularly suit their business model and needs, in order to ensure they get the most from treasury management.

More companies are realizing the importance of treasury management. A global survey by Accenture, the professional services consultancy, found that the top-performing companies considered their levels of liquidity risk as either their primary or secondary concerns. After all – cash only has value when it is easily accessed.

Basel III regulations

As globalization strides forward and previously unavailable markets are opened up, staying-up to-date with numerous regulations is becoming increasingly complicated. International companies must keep track of a variety of regulations impacting them from different locales – each has to be correctly tended to in order to ensure a prosperous business.

However, treasury managers need to remain aware of local regulations that can change quickly and substantially in smaller regions. The most substantial new regulation affecting the financial sector, and particularly the treasury management industry, is Basel III. With its introduction planned over the next few years, it is set to have a large impact on the global treasury management industry.

The latest installment in the Basel Accords lays down a new global regulatory framework that builds on previous versions; Basel I & II. Designed to develop risk management and transparency in the banking sector, Basel III aims to improve all banks' ability to deal with economic stress. It does this by setting a series of rules, the most important of which are that banks must hold 4.5 percent common equity (up from two percent in Basel II) and six percent Tier one capital of risk-weighted assets (up from four percent). Banks will build progressively larger buffers of capital in order to absorb financial damages and protect themselves against more downturns.

Although Basel III is meant to start coming into effect from the beginning of 2013, full implementation of Basel III is expected by 2019.

Treasury Management Objectives

- Maintaining Liquidity
- Optimizing Cash Resources
- Establishing and Maintaining Access to Short-Term Financing
- Maintaining Access to Medium- and Long-Term Financing
- Maintaining Shareholder Relations
- Managing Risk
- Coordinating Financial Functions and Sharing Financial Information

The Treasury function in any corporate has always been important in making sure that the business has sufficient liquidity to meet its obligations, whilst managing payments, receipts and financial risks effectively.

With the ever increasing pace of change to regulation, compliance and technology in the financial sector, Treasury has increasingly become a strategic business partner across all areas of the business, adding value to the operating divisions of the company: for example, working with the sales department to establish good financial contract terms so that any trade discounts offered and the payment method agreed are beneficial to the business. Current market conditions also reinforce the need for corporates to ensure that their financial position is managed as efficiently as possible, with no excess working capital tied up in the business - the old adage 'cash is king' is certainly as relevant today as it has always been.

Treasury departments need to cover the complete financial environment; from capital structure and long term investments to liquidity and working capital management. If Treasury can drive improvements in the Purchase-To-Pay and Order-To Cash cycles, there can be a direct effect on the overall debt and investment requirements and thus on the capital structure required in the business.

The question then is: if the Treasury function is becoming more of a business partner, how can the department manage its time to ensure that day to day administration, processing and transaction execution is completed using the minimum of resource?

The answer is that larger companies automate the majority of their daily financial processing and administration tasks, supported by policy standards, control and monitoring processes, embedding financial best practices across the whole business. Integrating corporate systems with those of their banks can achieve significant levels of automation, reducing the amount of time that needs to be spent on tasks such as calculating the daily cash position.

At the same time, the efficient use of secure systems can minimize operational risk, increase operational security and maximize straight through processing. Add to this automatic reconciliation of bank account data and Treasury can then manage exceptions rather than every item, giving them the time to devote to delivering value-added services across the company.

Technology development is continually providing new and enhanced ways for corporates to manage their financial position. An example of this is the development of SWIFT Corporate Access, enabling corporates to use SWIFT channels to communicate directly with their banks. This, together with the development of more standardized file formats, for example XML, has the potential to change radically the systems and processes used in the business where the benefits outweigh the cost of introduction.

Cash and liquidity management has always been a key task in every company to ensure debtor, creditor and stock levels are managed as efficiently and effectively as possible. When the business environment is more challenging, corporates can gain a competitive advantage through optimal management of every aspect of their financial position.

An ideal Treasury- Front/Mid and Back Office

There is no perfect answer to the question of what is the optimal structure for a corporate treasury. Although the quest for the best corporate treasury structure is not new, international growth, better technology, and the more strategic responsibilities of a corporate treasurer have all led to this increased focus.

1. International growth with a tougher economic environment, corporations are increasingly seeking out growth opportunities in emerging markets. Companies are no longer waiting until they are well-established and wealthy to carry out overseas expansions and, as a result, treasury departments are under pressure to support businesses in non-traditional markets where treasury processes may not be so easy to manage centrally.

2. Technology is becoming more affordable Companies of all sizes are embracing the Cloud and this, combined with the proliferation of mobile devices, removes technology from being a hindrance to managing decentralized treasuries and keeping remote users connected. In fact, web technology creates an opportunity to not only connect remote users and position in virtually any worldwide location, but also to ensure that processes and control are optimized. Technology is both an enabler and a catalyst: without it, treasury cannot hope to make its processes more efficient and impose high-level controls. At the same time, the very process of rolling out a system triggers a transformation, as old ways of doing things are examined, discarded or improved.

3. A more strategic role for treasurers is becoming more responsible for collaborating with other teams and finding new ways to add value to the organization. Senior management is realizing that treasurers can provide functions like risk management and can also drive efficiencies and optimize financial returns.

Hybrid Structure

One of the strategies towards an ideal treasury is the implementation of a hybrid structure that takes the best of centralized and decentralized treasury structures and allows tailoring to the specific needs of the organization. Hybrid approach can provide full cash visibility across an entire operation, spanning geographic locations, time zones and offices, while

providing local and regional support. The extent to which each of these functions becomes the focus depends entirely on factors like the size of a business, its business model and the expected role of the treasury department within that business.

Centralizing Control to Improve Efficiency

Businesses are increasingly bending the old treasury rules to suit the way they want to work. Through using technologies and tools like re-invoicing centers, payment factories and IHBs, firms are standardizing workflows that make geographic expansion and additional workloads manageable without adding headcount.

Thinking More Strategically

Treasurers are no longer required simply to process data and present facts, they need to be able to think strategically to utilize information to help the decision making process. Knowledge of the specific risks linked with operating in certain region should be taken into account and treasurers' skill sets should allow them to present data appropriately in light of these risks. The key for treasury departments is to try to ensure they have the right levels of expertise in different geographical locations.

Treasury Technology Is an Enabler

Automating daily treasury functions can help businesses to reach the ultimate goal of "maximizing the sources and uses of funds", Automating basic functions and using a treasury management provider who can help to manage banking relationships and keep track of everything from cash visibility and liquidity to optimization and risk management, can finally allow treasurers to ensure they are involved in the establishment of an effective treasury structure right from the very beginning.

The quest for the perfect treasury structure is a balancing act of evaluating objectives, financial flows, people, technology, and corporate vision. Through a careful analysis of these factors along with a selection of the proper underlying technologies, corporate treasurers will succeed in finding the optimal treasury structure, which quite possibly may be a hybrid combining the best elements of centralized and decentralized strategies.

Functions of Treasury Department

The general mission of the treasury department is to manage the liquidity of a business. This means that all current and projected cash inflows and outflows must be monitored to ensure that there is sufficient cash to fund company operations, as well as to ensure that excess cash is properly invested. While accomplishing this mission, the treasurer must engage in considerable prudence to ensure that existing assets are safeguarded through the use of safe forms of investment and hedging activities.

Detail of Treasury Functions

In order to accomplish its mission, the treasury department must engage in the following activities:

- *Cash forecasting.* Compile information from around the company to create ongoing cash forecast. This information may come from the accounting records, the budget, capital budget, board minutes (for dividend payments) and even the CEO (for expenditures related to acquisitions).
- *Working capital monitoring.* Review the corporate policies related to working capital, and model their impact on cash flows. For example, looser credit results in a larger investment in accounts receivable, which consumes cash.
- *Cash concentration.* Create a system for funneling cash into a centralized investment account, from which cash can be

most effectively invested. This may involve the use of notional pooling or cash sweeps.

- *Investments.* Use the corporate investment policy for allocating excess cash to various types of investments, depending on their rates of return and how quickly they can be converted into cash.
- *Grant credit.* Issue credit to customers, which involves management of the policy under which credit terms are granted.
- *Fund raising.* Determine when additional cash is needed, and raise funds through the acquisition of debt, sale of stock, or changes in company policies that impact the amount of working capital required to run the business.
- *Risk management.* Use various hedging and netting strategies to reduce risk related to changes in asset values, interest rates, and foreign currency holdings.
- *Credit rating agency relations.* Keep any credit rating agencies informed of the company's financial results and condition, if these agencies are providing ratings on the company's marketable debt issuances.
- *Bank relations.* Keep the company's bankers apprised of the company's financial condition and projections, as well as any forthcoming changes in its need for borrowed funds. The discussion may extend to the various services provided by the banks to the company, such as lockboxes, wire transfers, and so forth.
- *IT systems.* The department maintains treasury workstations that provide it with information about cash holdings, projections, market conditions, and other information.
- *Reporting.* The treasurer provides the senior management team with reports concerning market conditions, funding issues, returns on investment, cash-related risks, and similar topics.

- *Mergers and acquisitions.* The department may advise on the company's acquisition activities, and may be called upon to integrate the treasury functions of entity being merged.

In essence, treasury functions revolve around the monitoring of cash, the use of cash, and the ability to raise more cash. All other tasks of the department support these functions.

Liquidity Management in Treasuries – Cash Forecasting

Cash forecasts are generally made over three time horizons: short, medium and long term.

Short-term cash forecasts

Generally these cover approximately 30 days. Short-term forecasts are usually used exclusively by the treasury department to manage liquidity on a day-to-day basis. Their purpose is to aid decisions on the management of short-term borrowings and deposits, to ensure that there are no idle balances sitting in bank accounts and that shortages are detected and financed in the most cost-effective manner.

Short-term cash forecasts are generally prepared on a daily basis for the following five to ten days. Opening cleared cash balances at banks are calculated and adjusted for anticipated daily cash receipts and cash payments. This day-by-day forecast is ideally updated daily. The following days are often prepared on a week-by-week basis, since trends, as opposed to daily movements, are more important. Short-term forecasts are usually prepared by the treasury department from records at their disposal, or information supplied by other parts of the business. Those companies with stable and predictable cashflows sometimes prepare parts of these forecasts from historic data, updated for known circumstances.

Preparation of short-term cash forecasts

It is normally the responsibility of the cash manager to prepare short-term cash forecasts. The opening balance will be the cleared balance reported through the company's bank balance reporting system. It will represent the total of cleared balances at the start of the day on the banking pool, or the net of different individual accounts with a particular bank. The bank balance reporting system will also inform the company of those payments or receipts that are being cleared through the clearing system that day, and for which their accounts will be debited or credited by the end of the day.

Medium-term forecasts

Medium-term cash forecast is generally prepared for financial management purposes by the various finance departments within the organization. Equity analysts are putting more and more emphasis on cashflow as an indicator of the financial health of a company. Company directors also are seeing cash control as one of the primary tools in the creation of value. As a result the management of cash, effected through a whole series of controls over every aspect of working capital and capital expenditure, becomes a key management issue. Central to these controls is the efficient and effective forecasting of cash over the budget or current financial year and beyond.

Most companies will produce medium-term cash forecasts on a month by-month basis, which are then updated at regular intervals. Many will produce medium-term cash forecasts that cover a rolling 12–18 months. Such rolling forecasts ensure that the control of cash does not just go from financial year to financial year, but that a consistent control is taken over a 12-month cycle. Medium-term cash forecasts are usually prepared on a receipts and payments basis, with emphasis being placed on the key drivers in cash management.

Use by treasury of medium-term forecasts

Medium-term cash forecasts are used by the treasury department for a number of purposes, such as the management of headroom within medium-term banking facilities and forecasting the observance of key financial covenants within borrowing instruments. Treasury also uses medium-term forecasts to:

- Strategically manage short-term liquidity. For instance a treasury department with some cash surpluses, if it believes interest rates may decline more rapidly than the market predicts, may use the medium term cash forecasts in determining whether to deposit those funds for a more extended period than usual.
- Manage the actual interest cost, which for many treasury departments is one of their annual objectives. The medium-term forecast aids the management of derivative and liquidity instruments to meet this objective.

Long-term cash forecasts

Long-term cash forecasts generally cover a period of three to five years and are produced during the strategic planning process. These cash forecasts are only indicative of the likely trend of a company's cash generation. Long-term cash forecasts are little used in the management of liquidity, but have a greater significance in the management of a company's debt structure.

Aspects of cash forecasting

Most companies accept the need for accurate cash forecasts but few are able to produce them on a consistent basis. One of the main reasons for this is the difficulty of forecasting the timing of certain major items of cash expenditure and receipt. For instance, a company may have planned the purchase of certain items of capital equipment, but identifying the exact timing of the payments for the plant may be extremely difficult. If the assets are being specifically manufactured, timing of payment depends on

delivery of the order by the company, the design and production at the supplier, and then delivery, testing and acceptance by the company. Alternatively, expenditure may relate to the development of freehold premises, with all the problems of planning consent and construction progress. Working capital in some companies can fluctuate quite substantially. While companies can forecast the total cash outflow or inflow for the year as a whole, it is extremely difficult to achieve the same accuracy on a month-by-month basis. There are however, a number of general principles that, when applied, can lead to more efficient cash forecasting:

- Are full variances produced of actual cashflow against that budgeted or most recently forecast? This analysis should give an understanding as to permanent variances and those that are due to timing. What lessons for cash forecasting can be learned from these variances?
- Are the forecasts being prepared in sufficient detail to enable meaningful variance analysis to be undertaken? Is there a continual review of the underlying assumptions used in the preparation of the forecasts? Who vets and reviews these assumptions?
- Is sensitivity analysis used to determine the possible boundaries of cash inflows and outflows? Is the sensitivity analysis sensible and related to the historic volatility of the business?
- Who prepares the forecasts and for what purpose? Sometimes medium term cash forecasts are prepared for treasury by the finance function. If the finance function has no involvement in managing actual cashflow to that budgeted, then it is unlikely they will give the exercise high priority and may not be too concerned with its accuracy.
- Are the time horizons used in the forecast appropriate? This very much depends on the volatility of the cash cycles in the business.

- How frequently are forecasts, actual cashflow and variance analysis reports prepared? The more regularly they are undertaken, then generally the more accurate they become. Specific forecasting techniques should be applied to each component of the cash forecast. For instance, to forecast the timing of cash receipts from customer trade payments requires an understanding of the payment methods used by customers (Cheque, bill of exchange etc.), the company's payment terms and billing cycle, and the payment routines on their receivables ledger used by customers. It may also require an analysis of the comparative importance of different customers and different payment terms attached to different groups of customers.
- Do other related items need to be forecast? This may include foreign exchange receipts and payments that are related to forecasts for overseas sales.
- Are incentives aligned to the management of cash against that budgeted and forecast, and does a cash management culture pervade the whole organization? It needs to be remembered that successful cash forecasting is often heavily reliant on the individuals preparing the forecasts, and their experience, skill and knowledge of the business and its current operations.

Banking Relationships

A company needs a small number of relationship banks from whom it can purchase its treasury products. The products that these banks offer need to be strongly differentiated between the individual banks that offer them. Some banks for instance bring powerful balance sheets and the ability to provide substantial amounts of finance at short notice. Others have very extensive capital market distribution capabilities and hence, in addition to providing effective delivery for capital market transactions, are

able to provide constructive advice on the appropriate capital market products for a company. Others may have very efficient derivatives businesses or specialization in certain derivative products that meet the company's particular needs.

The essence of good banking relationships is for the company to exploit the favored products and market positions of banks to both the company's and the banks' mutual benefit.

How many banking relationships?

A company probably needs at least one bank in any territory where it has major operations. This bank will need to be able to offer the administration of current accounts, short-term credit facilities and efficient international payments. There is no rule for the number of banking relationships. Many treasury teams believe that there is no point in establishing relationships with investment banks. Should major acquisitions or disposals be effected, then advice will come from the company's merchant banks where officials are close to the company's senior executives. This is probably true, but today most banks that have advisory arms to their business are also part of a large banking group. In these circumstances the company should be able to 'lever off' the existing relationship to access products that interest and concern it.

Relationships are never stable. Rightly or wrongly, a bank usually achieves the status of a relationship bank by participating in one of the company's major bank financings. This financing for most companies is a revolving credit that provides the company's core finance to meet working capital, capital and small acquisition needs. Banks are continually changing the perception of their desire to be involved in such financings. In addition they are continually comparing the return from the total business generated by the relationship with the cost of capital required to support it. If banks consider the returns are inadequate they will reduce support to the company. As a result of this a treasurer

needs to be continually open to new potential relationships, and ever sensitive to which of the existing relationships may wither. Most banks that participate in a major financing maintain that the returns from traditional bank lending are insufficient to cover the cost of capital required to support their commitment. As a result they are continually looking for ancillary business from a company to subsidize the bank lending activities effectively. This is a real problem for many treasurers since many companies do not have that volume of ancillary business. Unfortunately there is not much that can be done other than to be extra sensitive to ensuring that all treasury business goes to relationship banks. Additionally, treasurers need to ensure that relationship banks have, wherever possible, an opportunity to bid for all relevant treasury business.

What each side must give the relationship

Most treasurers would probably see the key elements to a successful relationship as being:

- Product compatibility
- Personal chemistry
- Integrity: the ability to see each other's point of view
- Open information and understanding
- Credit standing by the bank and credit consciousness by the company.

Credit Management

Credit Management Group within the Treasury Department is responsible for implementing and ensuring compliance with credit policies established by the organization for the management of derivative credit exposures. Through strategic, tactical and risk-

oriented teams of professionals, Treasury Credit delivers the highest quality service and expertise to its stakeholders.

The most crucial part of credit management is to manage credit risk. Most of the institutions have faced difficulties over the years for a multitude of reasons, the major cause of serious problems continues to be directly related to lax credit standards for borrowers and counterparties, poor portfolio risk management, or a lack of attention to changes in economic or other circumstances that can lead to a deterioration in the credit standing of a organization's counterparties.

Credit risk is most simply defined as the potential that a borrower or counterparty will fail to meet its obligations in accordance with agreed terms. The goal of credit risk management is to maximize organization's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Organizations need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Organizations should also consider the relationships between credit risk and other risks. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any organization.

For most organizations, debtors (loans in case of banking organization) are the largest and most obvious source of credit risk. Banks are increasingly facing credit risk (or counterparty risk) in various financial instruments other than loans, including acceptances, interbank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options, and in the extension of commitments and guarantees, and the settlement of transactions.

Since exposure to credit risk continues to be the leading source of problems in banks world-wide, banks and their supervisors

should be able to draw useful lessons from past experiences. Banks should now have a keen awareness of the need to identify, measure, monitor and control credit risk as well as to determine that they hold adequate capital against these risks and that they are adequately compensated for risks incurred. The Basel Committee is issuing this document in order to encourage banking supervisors globally to promote sound practices for managing credit risk. Although the principles contained in this paper are most clearly applicable to the business of lending, they should be applied to all activities where credit risk is present.

A further particular instance of credit risk relates to the process of settling financial transactions. If one side of a transaction is settled but the other fails, a loss may be incurred that is equal to the principal amount of the transaction. Even if one party is simply late in settling, then the other party may incur a loss relating to missed investment opportunities. Settlement risk (i.e. the risk that the completion or settlement of a financial transaction will fail to take place as expected) thus includes elements of liquidity, market, operational and reputational risk as well as credit risk. The level of risk is determined by the particular arrangements for settlement. Factors in such arrangements that have a bearing on credit risk include: the timing of the exchange of value; payment/settlement finality; and the role of intermediaries and clearing houses.

Treasury Services

a) Bank Treasury:

The treasury department of a bank is responsible for balancing and managing the daily cash flow and liquidity of funds within the bank. The department also handles the bank's investments in securities, foreign exchange, asset/liability management and cash instruments.

b) Government Treasury:

A government Treasury is a department which carries out the functions related to finance and taxation for state governments and central governments. It is an executive agency, with the primary responsibilities of promoting economic prosperity and ensuring the financial security of a country.

c) Corporate Treasury:

Corporate treasury manages a company's cash flows in the most efficient and profitable fashion possible. It also involves forecasting future needs for funding and seeking the best alternatives for obtaining it. Cash managers are the subcategory of corporate treasury personnel who focus on balancing incoming payments from customers with outgoing payments to suppliers and for taxes. Cash managers also seek appropriate investment opportunities for excess cash, normally in short-term debt or bank deposits, giving the field an aspect of money management .

Additionally, corporate treasury has many similarities to investment banking , since it also involves monitoring and forecasting the company's needs for outside funding, both

long-term and short-term, utilizing bank loans, commercial paper, bond issues and stock issues to meet these needs for cash. Corporate treasury personnel work in close concert with outside investment bankers.

An insight into

Float:

Float can be defined as the time delay between a company preparing a payment instrument to pay a supplier and the supplier having usable funds. In the case of cheques, float arises from the time it takes to produce the cheque and post it, for the cheque to be delivered, for the supplier to handle the cheque and pay it into the bank, for the cheque to pass through the clearing system, and finally for the supplier to get value from its bank. Any one of these factors can cause float in respect of cheque payments to vary from four to ten days or more. When interest rates were generally high across the world, the float for the payer provided by cheques was comparatively valuable. Nowadays, with interest rates very low across the globe, the value of float has all but vanished.

Availability:

Selection of an appropriate cheque clearing channel is a function of deposit bank processing time, geographic location and the availability schedules of clearing agents. Availability is granted to the clearing bank if the cheque reaches the endpoint (or location established by the clearing agent) prior to a prearranged deposit deadline. Availability schedules define the number of days delay for each endpoint. The assignment is

usually in whole business days, and cheques are generally assigned zero, one or two days availability. Banks have availability schedules for their customers. Many banks have multiple availability schedules. To construct the availability schedule, the clearing bank examines clearing times for important endpoints, determines the clearing channels for each endpoint, calculates costs, and works back from deposit deadlines for those endpoints to establish its own deposit deadlines for customers.

The following factors influence the availability a bank assigns to a particular cheque:

- *Drawee location.* Cheques drawn on banks in remote locations generally have a longer availability time than those drawn on nearby banks.
- *Time of deposit.* Cheques must reach the processing centre by a certain time of the day in order to receive the designated availability.

Swaps:

A swap is an OTC contractual agreement between counterparties to exchange cashflows at specified future times according to pre-specified conditions:

Typically with a notional principal; and a stated maturity, often close to the date of the last cashflow. Each set of cashflows might be:

- A fixed percentage of the notional principal;
- A floating percentage depending on some interest or currency rate, such as 3-month Libor or 1-month Libor plus 25 bps;
- Or otherwise determined.

Swap terminology

Trade date: The date on which the parties commit to the swap and agree to its terms.

Effective date: The date on which interest starts to accrue, often 2 days after the trade date.

Payer: The party who pays the fixed rate.

Receiver: The party who receives the fixed rate.

Account Analysis:

Account analysis is an account analysis tool to effectively manage day-to-day treasury operations. Account Analysis statement provides a detailed report of treasury management service activity. It includes information on transaction volumes, services used and costs. Account analysis provides the functionality of dividing the services in to sub sets and gives a complete control over every operation at micro level.

Clearing houses:

A clearing house is an Institution engaged in the activities of offsetting transactions with one another in order to limit payment settlements to net balances. Clearinghouses play an important role in settling international payments and the transactions of banks, railroads, and stock and commodity exchanges. Bank clearinghouses are usually voluntary associations of local banks set up to simplify the exchange of checks, drafts, and notes, as well as to settle balances. Clearing in other countries around the world can vary as cheques are not used for corporate payments and most payments take place through bank transfers. The important concern for the treasurer is to understand the payment and collection instruments available in his/her country, how quickly value can be obtained for different instruments and the relative cost of each one.

Lockboxes:

Companies receive cheques from customers in the mail or through lockboxes. With a lockbox a processor receives mail at a specified

lockbox address, processes the remittances and deposits them in the payee's account. There are a number of advantages to lockboxes as opposed to receiving cheques through the mail.

- Mail float is usually reduced because a processor uses its own unique PIN code to speed mail delivery. A lockbox processor may also make more frequent mail pickups.
- Processing float can be reduced because cheques are mailed directly to the lockbox processor. This eliminates company handling time. Also many processors operate 24 hours a day, seven days a week. In effect, they specialize in the efficient processing of receipts and deposits.
- Availability float is also reduced because the processor works to meet critical availability deadlines. These are deadlines by which cheques must reach the bank's proof and transit area. For example, 9 a.m. could be the deadline for receiving same-day availability for cheques drawn on banks in the same city. Different processors will have different availability schedules.

In addition lockboxes provide efficient processing through economies of scale, and an audit trail and control.

Lockbox costs

These consist of a fixed monthly cost and a variable cost, which may be a per-item deposit and processing charge.

Collection studies

The location of lockboxes and the choice of lockbox processor are established after a collection study.

The following data are analyzed:

Location and geographic concentration of remitting customers, location of customers with largest payments, intercity mail times, bank availability schedules and administrative costs associated with using lockboxes. Lockbox networks may involve several

processors in different cities or a single processor with multiple locations.

Disbursements:

Disbursement is the function of deployment of funds in the business segments. Timely information about corporate cash flow, protection against unauthorized disbursements and elimination of idle balances is a key to efficient treasury management.

Efficient disbursement solutions of a treasury should be designed to help it improve funds management, expand information access and control and increase visibility into transactions, including:

- Timely notification of the cheques that will be charged to controlled disbursement account
- Detailed data to help reduce account reconciliation time
- Fraud prevention tools that enable identification of potentially fraudulent cheques before they are paid
- Quick access to important cheque information via digitized images
- Flexible card payment options
- Outsourced cheque printing and mailing

Reconciliation:

A robust treasury module should have the capabilities of handling payment reconciliations for transactions, nostro and internal accounts. It should support all types of accounts, having the capability to manage large volumes, with a very high percentage level of automatic reconciliation. The system should also provide for automated exception and investigations handling.

It should have the enterprise-wide, real-time Transaction Lifecycle Management (TLM) which should possess:

- Capabilities to reconcile the widest range of financial instruments, accounts, positions and processes on a single platform.
- Treasury confirmations processing.
- Post-trade allocation, confirmation, clearing and settlement of buy-side, sell-side.
- Capability to generate and handle exceptions
- Support optimal investment and lending opportunities.

Investment or Treasury Policy Manual

People should behave rationally, especially when it comes to finance. They often do not. One of the big ways to prevent this from happening in your investment portfolio is writing, implementing, and abiding by something known as an investment policy manual. In essence, it is a set of ground rules and guidelines about how a specific pool of assets will be managed. It details the parameters under which a portfolio will be established, managed, tracked, and protected. It can range from a very simple, five page document, which is probably all we need, to an extremely complex book. A comprehensive Investment or Treasury policy manual ideally covers following areas:

Investments

I. Purpose

The Investment Policy document of an organization sets forth policies and procedures to guide day today administration of all investment activities.

II. Responsibility

The Board of Directors is responsible for the formulation and implementation of investment policies. The Board may delegate its decision making authority with respect to specific investments to the President, for implementing investment policies and consistent with its policy document. The Board may also appoint an Investment Committee to act as a liaison between the Board and Management. The main functions of the committee will be:

- Working with management on investment issues and problems.
- Monitoring and reviewing for investing in financial institutions.
- Monitor investment decisions for compliance with the Policy Document, and
- Review the Policy Document and recommend changes to the Board when appropriate.

III. Investment Objective

The Investment policy document will enumerate the financial and investment objectives of the organization in details and the boundaries within which the investments can be made by the treasurer.

IV. Portfolio Composition

In the light of the investment objective, the policy document should prescribe the portfolio composition e.g. the portfolio should be comprised of securities with the following characteristics:

- A low degree of default risk.
- A low degree of interest risk resulting from changes in the level of interest rates.
- A high degree of liquidity.

The policy documents may further contain guidelines related to Authorized types of Investments, Maturity of Investments (Short term or long term), Diversification requirements etc.

Risk management policy

All the organizations aim to run risk free operations, however the truth is that no matter how careful they are there is always a danger of exposure to unexpected and unplanned for threats.

Implementing a risk management policy throughout an organization is the best way of identifying and managing these threats before they become costly problems.

Embedding such a policy within daily operations also helps with making well informed choices as decision-makers better understand and evaluate the wider impact their actions have. A good risk management policy builds a sound framework for (i) Risk assessment and identification, (ii) Risk ranking, (iii) Action Plan, (iv) Assessment and review, (v) Compliance and (vi) Feedback and Improvement

So far we have been considering risk management from the standpoint of the corporate treasurer, and the concept of financial risk that was used was that which the treasurer has responsibility for managing. In the 1990s the idea of managing risk throughout the organization was relatively new and most companies focused on specific, mainly financial and insurable risks. Companies have come to pay particular attention to the management of risks throughout their organization due to a combination of: legal and compliance requirements on companies; the increasing need to communicate a company's risk management processes to various stakeholders; and a recognition of the benefits that an active, and

corporate-wide, risk management programme can have on achieving the strategic aims of the organization and building shareholder value.

An assessment of the system of internal control is as relevant for the smaller listed company as it is for larger ones, since the risks facing such companies are generally increasing. Risk management is essential for reducing the probability that corporate objectives will be jeopardized by unforeseen events. It involves proactively managing those risk exposures that can affect everything the company is trying to achieve.

Among the steps involved in implementing and maintaining an effective risk management system are:

- Identifying risks
- Ranking those risks
- Agreeing control strategies and risk management policy
- Taking action
- Regular monitoring
- Regular reporting and review of risk and control.

As can be seen, the process for managing risks on an enterprise-wide basis is essentially the same as that established by the treasurer for managing treasury-related financial risks.

Identifying risks

Risks are often classified into: business, operational, financial and compliance risks.

Business risks

These arise from being in a particular industry and geographical area, and from the strategy the company has chosen to undertake. The risks can range from wrong business strategy, bad or failed acquisitions and inability to obtain further capital, to competitive

pressures on price and market share, political risks or the decline of an industry sector.

Operational risks

These relate to the various administrative and operational procedures that the business uses to implement its strategy. They may include skills shortages, stock-out of raw materials, physical disasters, loss of physical assets, quality problems, loss of key contracts or poor brand management.

Financial risks

In addition to those already discussed in relation to treasury risk management, financial risks can also comprise: going concern problems, overtrading, misuse of financial resources, and occurrence of fraud, misstatement risk relating to published financial information, unrecorded liabilities and penetration of IT systems by hackers.

Compliance risks

These derive from the necessity to ensure compliance with those laws and regulations that, if infringed, can damage a company. They can include breach of listing rules, breach of Companies Act requirements, VAT problems, tax penalties, health and safety risks and environmental problems.

In identifying risks, it is important to avoid selecting them from some form of generic list. The risks need to be specific to the industry sector and specific circumstances of the company. It is also useful to relate them to the likely obstacles facing the critical success factors that underpin the achievement of the company's objectives.

Quantifying and ranking risks

As with the measurement of treasury-related financial risks, the company is faced with the problem of quantifying or measuring the identified risks. While many treasury financial risks relate to movement in market prices and thus the possible impact of adverse price movements within certain ranges can be calculated, many of the identified enterprise risks are incapable of such direct measurement. Most organizations therefore rank such risks according to:

- High likelihood of occurrence–high impact: Consider for immediate action.
- Low likelihood of occurrence–high impact: Consider for action and have a contingency plan.
- High likelihood of occurrence–low impact: Consider action.
- Low likelihood of occurrence–low impact: Keep under periodic review.

The impacts should be considered not merely in financial terms, but more importantly in terms of their potential effect on the achievement of the company's objectives.

Agreeing control strategies

Various methods can be used to deal with risks identified and ranked. The directors need to ask the following:

- Do we wish to accept the risk?
- What is the control strategy for avoiding or mitigating the risk?
- What is the residual risk remaining after the application of controls?
- What is the early warning system?

Generally there are four main ways of dealing with risks:

- Accept them. Some risks may be inherent to the business (e.g. economic risks or volatility), and investors may actively

have sought securities reflecting them. In addition there may be some cases when the costs of managing risks are greater than the benefits from risk reduction.

- Transfer them. This is usually done through insurance or derivatives.
- Reduce or manage them by improving controls within existing processes; for example by improving production control techniques to reduce the likelihood of stock-out of raw materials.
- Eliminate them, generally through the pursuit of existing strategies.

For instance, the risk of market share pressures may be handled through an existing strategy of repositioning products and expanding the product range.

Taking action and reporting

Not only does the agreed action need to be taken but a regular reporting procedure needs to be put in place. In a small organization, responsibility for this may be delegated to the finance director or chief executive, but in larger organizations this role is likely to be undertaken by a risk management committee, led by senior executives or board directors.

Implications for the treasurer

What implications does an organization-wide risk management system and process have for the treasurer? It can be seen that the steps adopted in such a process are essentially the same as those adopted by the treasurer in identifying and managing risks within the scope of the treasury department. The treasurer's risk management routines will in most organizations be part of the organization-wide risk management routines. Treasury risks and action to identify, measure, manage and report them need to be set within the framework of corporate-wide risk management.

Exposure to Treasury Management Software

Finacle Treasury:

Finacle treasury solution is an integrated, middle and back office solution built on best-of-breed open technology platforms, providing high scalability, flexibility and STP capability. The treasury solution enables reduction in costs, decrease in time-to-market of products and services, while enhancing process efficiency.

The Finacle treasury solution supports a wide range of financial products and their derivatives in foreign exchange, money markets and securities. It also provides full back office processing capabilities, including General Ledger, and has extensive middle office features such as limits, risk and liquidity management.

Finacle treasury solution is differentiated by:

- Fast and Efficient Front-to-Back Office Processing.
- Integrated system with straight through front, middle and back office processing.
- Reduced operational costs that otherwise emerge from leveraging multiple systems.
- Transparent and interactive service delivery to customers.
- Wide Range of Asset Classes

Key Modules available in Finacle

Finacle treasury solution supports trading, risk management and processing for a broad array of asset classes on a single integrated platform. These asset classes include:

- Foreign exchange
- Money markets
- Interest rate derivatives
- Fixed income
- Precious metals
- Equities
- Structured products
- Credit derivatives

Front Office

Finacle presents a comprehensive dealer-friendly front office module that enables efficient deal capture. The treasury solution provides the flexibility to price and capture deals through the front office, or import them from external sources through seamless interfaces.

- Trade entry
- User-friendly interface
- Personalized layout
- Online updates
- Multi-dimensional organization structure
- Blotters
- Pricing
- Simulation
- Limits monitoring
- Real time position keeping and P & L

Middle Office

Finacle offers real-time tools to view positions and manage market, currency and credit risks effectively.

- Multiple revaluation methodologies
- Risk management
- Limits management
- Value at risk

Back Office

Finacle offers a comprehensive back office module for real-time management of treasury instruments and their derivatives. This comprises complete deal processing including deal settlement, updating, verification, confirmation, Nostro reconciliation and tickets printing.

- Straight Through Processing (STP)
- Deal lifecycle
- Permissioning system
- Exceptions management
- Blotter operations
- Nostro blotter
- Setup of static data
- Accounting
- Reporting
- Electronic messaging infrastructure
- Message management

Business Benefits

Finacle treasury solution provides a full range of products and their derivatives in foreign exchange, money markets and securities, round the clock. This empowers the bank with an all-in-one system that addresses corporate clients' needs for

sophisticated functionalities. It also relieves the constraint of unavailability of systems for long periods during EOD operations.

Further, Finacle treasury solution provides full STP for all supported instruments from pricing and pre-deal analysis to operation lifecycle processing, confirmation and settlement. In addition, the solution comes with a powerful integration framework to interface with the bank's core banking solution and external data sources – thus minimizing operational delays and ensuring seamless transaction flows at the bank. Treasury solution allows users, belonging to different legal entities to work on a single system and database, with support for cross-entity consolidation of risk and standing data. This directly results in significantly lower implementation costs and ease of centralized reporting for the bank.

SAP Treasury

SAP Treasury provides an opportunity to maintain full control over liquidity planning with help of SAP Cash and Liquidity Management application. Managing cash from sales orders to purchase orders with direct updates from bank – for a 360-degree view of treasury operations is made possible with SAP Treasury.

Cash & Liquidity Management Application delivers:

- Basel regulatory compliance through its Intraday Liquidity Management module
- Significant cost reductions by retiring multiple legacy systems and spreadsheets, whilst reducing the manual workload
- Reduced operational risk through real-time reconciliations and same day exception identification and resolution

- Improved balance management through automation of standard tasks, leaving staff to focus on critical tasks
- More profitable cash management by real-time tracking and monitoring of surplus positions, automated account sweeping and removing reliance on costly intra-day borrowing to boost liquidity
- More effective investment and funding decisions provided by greater visibility into cash movements
- Improved balance information through the reconciliation of correspondent movements, removing reliance on assumed settlement and next day statements
- More efficient management of higher transaction volumes and global cash movements without increasing headcount

Treasury workstation module of SAP

The Treasury workstation of SAP ERP System represents Treasury processes such as liquidity and risk analysis as well as transaction and position management in different systems. Cash management is used as an interface both in the transporting basic system and in the Treasury workstation. In the transporting basic system, the current liquidity status of the operative areas is updated, the relevant section is called up at defined points in time and imported to Cash management in the Treasury workstation.

You can use the Treasury workstation if you represent different company units in local systems and have to bring them together for liquidity control purposes, or for concluding financial transactions.

Liquidity status:

In the Treasury workstation, you can aggregate evaluations of the liquidity status. This also allows you to evaluate cross-organizational units, for example, several company codes within a group structure.

Financial transactions:

The *Cash management data* of the assigned systems provides the basis for financial investment and borrowing decisions. Financial transactions are managed entirely within the Treasury workstation.

Risk status:

You can also use Market risk management in the Treasury workstation. This provides an integrated view of risk positions and different valuation methods for risk measurement.

Oracle Treasury

Oracle Treasury is an application that has not gotten as much attention as it should -compared to the rest of the E-Business Suite. Oracle Treasury provides the ability to manage cash flows, foreign currency market deals, money market deals, and overall investment related risks. We can capitalize off banking / broker relationships and settlement features that allow us to integrate our cash flows and investment management into the E-Business Suite. The primary areas are cash management, deal management, and risk management.

Cash Flow Management

Oracle Treasury is not designed to replace Oracle Cash Management. That application still exists and serves the function of cash forecasting, cash positioning, and bank account reconciliation. Treasury is intended to manage investment portfolio including investments and borrowings. Likewise, it allows managing banking relationships, transactions between companies and banks, and short term / long term cash

forecasting. In addition, it can be used to manage in-house cash between companies within the same legal entity.

Deal Management

Oracle Treasury can be used to manage financial transactions and deals both short term and long term including investments and borrowings. This management capability allows the organization to better manage results to achieve improved overall operation of its treasury management process. For Deal Management, Oracle Treasury allows you to:

- Create portfolios to manage short term and long term deals that are controlled through deal rate tolerances.
- Create the products you need to relate to the deals you trade in. Define stocks and bonds.
- Setup your deals and manage them both in terms of risk and record appropriate journal entries to the General Ledger.
- Create confirmation templates that you can send out deal confirmations to the trading parties that you control.
- Manage the settlement process with trading parties using EDI and related technologies.
- Define audit requirements to help manage your internal audit requirements in the corporate treasury environment.

Risk Management

Risk Management is an ever increasing part of corporate treasury and cash management responsibilities; and as such you can use Oracle Treasury to drive policy, risk limits, and risk exposure to interest rates, foreign currency, and commodities. Oracle Treasury allows to:

- Define interest rate policy along with limit types and limits monitoring.

- Define global limits to create a decentralized ability to share the responsibility globally for managing your corporate treasury functions.
- Create exposure types and hedging policies to use as another tool in managing your cash and treasury risk.
- Set limits based on counterparty, counterparty groups, settlements, sovereign limits, currency limits, and dealer and utilize that all with workflow.
- Set up brokerage schedules and details to manage your brokerage accounts and relationships.
- Define market data curves and data sets so that you can use that for doing deal revaluations and mark to market evaluations to help manage your treasury risk.

Treasury 11i vs R12

From the perspective of using Treasury in an 11i versus R12 level, there is very little difference. R12 does utilize the functionality in Cash Management, where the bank account maintenance takes place in Cash Management. As part of R12, internal banks should be setup as parties and that allow you to further manage your banking relationships.

In R12 – the bank account control for Treasury is at a legal entity level. This is different than the bank account control for Accounts Payables and Accounts Receivables where the control is at the operating unit level.

Treasury does not utilize the sub-ledger accounting application functionality that is prevalent in R12 for the other sub-ledgers like Payables, Receivables, and Inventory. It does continue to utilize a direct interface to Oracle GL (without any drilldown functionality).

The remaining functionality in Treasury is the same from 11i to R12 as it relates to the primary functionality of the application. So, from an upgrade standpoint, there isn't any pre or post upgrade considerations required for Oracle Treasury.

PART-II

Cross-currency forwards

In simple terms a cross currency forward is a forward contract where a specified amount of one currency will be exchanged for a specified amount of another currency. The need for cross-currency forwards arises from a number of different situations:

- To convert a loan raised in a foreign currency into the company's domestic currency
- To hedge a foreign-denominated asset into a domestic currency
- To convert foreign currency cash balances to a domestic currency for a period of time.

Pricing: The "forward rate" or the price of a forward contract is based on the spot rate at the time the deal is booked, with an adjustment for "forward points" which represents the interest rate differential between the two currencies concerned.

Using the example of the U.S. Dollar and the Ethiopian Birr with a spot exchange rate of USD-ETB=9.8600 and one-year interest rates of 3.23% and 6.50% respectively for the U.S. and Ethiopia, we can calculate the one year forward rate as follows:

Forward Rate: (Multiplying Spot Rate with the Interest Rate Differential):

$$\frac{ETB}{USD} = Spot \times \frac{(1+r_{ETB})}{(1+r_{USD})} = 9.8600 \times \frac{(1+0.0650)}{(1+0.0323)} = 10.1720$$

$$\begin{aligned} \text{Forward Points} &= \text{Forward Rate} - \text{Spot Rate} \\ &= 10.1720 - 9.8600 \\ &= 0.312 \quad (\text{traders refer to these points as 31.2 pips}) \end{aligned}$$

The forward points reflect interest rate differentials between two currencies. They can be positive or negative depending on which currency has the lower or higher interest rate. In effect, the higher yielding currency will be discounted going forward and vice versa.

Constraints: If the underlying reason for wishing to set the exchange rate for a future delivery date no longer exists, the forward exchange contract may need to be cancelled at prevailing market rates. The unwinding of the position may incur a profit or a loss. (i.e. the 'mark to market' value of the contract). Currency markets are highly volatile and the prices of the underlying currencies can fluctuate rapidly and over wide ranges and may reflect unforeseen events or changes in conditions.

Exchange Rate movements – Volatility of major currencies

The recent fall in the exchange rate of the leading currencies surfaced renewed concerns among policy makers as well as investors in examining the nature and causes of such sharp decline. All emerging economy currencies depreciated sharply against the US Dollar with the exchange rate of the Indian Rupee (INR) said to be the worst performing currency among them.

There has been some turmoil in financial markets across the world as fears of a sooner-than-anticipated Fed tapering have grown. In India, we have had added volatility as the market has become concerned about policy rates and about oil marketing company demand for dollars. When the likely taper was announced in May, markets focused on India partly because of the large size of its Current Account Deficit (CAD).

Exchange rate affects trading relationships between two nations. The exchange rate of the currency determines the real return of the portfolio that holds the bulk of its investment. The exchange rate influences purchasing power of currency, income factors such as interest rates, inflation and capital gains from domestic securities.

India has adopted inflation targeting policy which is less flexible towards exchange rates. It intervenes quite frequently in the foreign exchange market than their advanced economy counterparts. The enhanced role of the exchange rate reflects these economies' greater vulnerability to exchange rate shocks and their less developed financial markets. However, India's sharp focus on the exchange rate may cause some confusion about the commitment towards central bank to achieve the inflation target and may also complicate policy implementation.

Following graph shows us the movement of Indian Rupee against US Dollar in the last six months:



It is likely that the Federal Reserve may reduce asset purchases in the coming months. The Reserve Bank of India expects the current-account shortfall to narrow 36 percent in the year through March 2014 from the existing record. The RBI is cutting back its emergency foreign-exchange swaps for oil companies, while those for non-resident Indians are nearing the scheduled expiry date. Oil refiners are buying most of their dollars in the local market as the central bank cuts direct supplies.

The shortfall in the current account will shrink to around \$56 billion this fiscal year from an unprecedented \$88 billion in the prior 12 months according to a recent press statement by RBI Governor Raghuram Rajan.

According to experts it is expected that the compression in the current-account deficit will likely keep the rupee supported in the 60 to 63 range even after the oil and NRI swaps come to an end. There remains an uneasy flux given the uncertainty on the policy anchor, liquidity framework, RBI swap facilities coming to an end and the taper overhang.

Exchange Rate and Interest Rate arbitrage – NDF markets

Non-Deliverable Forward is a ‘cash-settled’, short-term forward contract on a thinly traded or non-convertible foreign currency, where the profit or loss at the time at the settlement date is calculated by taking the difference between the agreed upon exchange rate and the spot rate at the time of settlement, for an agreed upon notional amount of funds.

NDFs have a fixing date and a settlement date. The fixing date is the date at which the difference between the prevailing market

exchange rate and the agreed upon exchange rate is calculated. The settlement date is the date by which the payment of the difference is due to the party receiving payment.

NDFs are commonly quoted for time periods of one month up to one year, and are normally quoted and settled in U.S. dollars. They have become a popular instrument for corporations seeking to hedge exposure to foreign currencies that are not internationally traded.

Non-Deliverable forwards (NDF) are similar to outright forward contracts but allow hedging of currencies where government regulations restrict foreign access to local currency or the parties want to compensate for risk without a physical exchange of funds. NDFs settle against a fixing rate at maturity, with the net amount in USD, or another fully convertible currency, either paid or received.

Since each forward contract carries a specific delivery or fixing date, forwards are more suited to hedging the foreign exchange risk on a bullet principal repayment as opposed to a stream of interest and principal payments. The latter is more often covered with a cross currency swap. In practice, however, forwards are sometimes favored as a more affordable, albeit less effective, hedging mechanism than swaps when used to hedge the foreign exchange risk of the principal of a loan, while leaving interest payments uncovered.

In an NDF a *principal amount, forward exchange rate, fixing date and forward date*, are all agreed on the trade date and form the basis for the net settlement that is made at maturity in a fully convertible currency.

At maturity of the NDF, in order to calculate the net settlement, the forward exchange rate agreed at execution is set against the prevailing market 'spot exchange rate' on the fixing date which is

two days before the value (delivery) date of the NDF. The reference for the spot exchange rate i.e. the fixing basis varies from currency to currency and can be the Reuters or Bloomberg pages.

Non-Deliverable Forward Contract



On the fixing date, the difference between the forward rate and the prevailing spot rate are subtracted resulting in the net amount which has to be paid by one party to the other as settlement of the NDF on the value (delivery) date.

In an NDF, the forward rate used follows the same methodology as discussed in cross currency forwards, but the actual funds exchanged on the value date at maturity will depend on the prevailing spot exchange rate.

If the prevailing spot rate is worse than the forward rate, the NDF is an asset and the holder of the NDF will be receiving funds from the counterparty as settlement. The opposite holds true if the NDF contract is a liability because prevailing spot rates are better than the original forward rate agreed at inception.

FEDAI guidelines for merchant quotes

Foreign Exchange business in India was confined to few foreign banks only till the period 1959. The said group banks were known as Exchange Banks. They had formed an Association, which was

known as the "Exchange Banks' Association". It was mainly covering the areas of activities within Bombay (now Mumbai), Calcutta (now Kolkata), Madras (now Chennai), Delhi and Amritsar. On introduction of the exchange control in India during 1939, the said Association was functioning within rules framed by RBI. The rules and regulations - introduced and practiced were also covered by RBI approval. On account of expansion in the foreign trade, and business, RBI allowed schedule commercial banks also to undertake foreign exchange transactions. The banks are known as AD - Authorized Dealers. The FEDAI - Foreign Exchange Dealers' Association of India was formed with approval of RBI during August 1958. It was under ECM-RBI directives under reference ECS / 298 / 86 / 58-Gen.20 dated 16th August, 1958, whereupon, Ads, i.e. authorized banks were granted with open permission to handle foreign exchange business. The body, known as EXCHANGE BANKS ASSOCIATION, was changed to be known as FOREIGN EXCHANGE DEALERS' ASSOCIATION OF INDIA'.

All Public sector banks, foreign banks, private sector and co-operative banks and certain financial institutions are the members of FEDAI. FEDAI is a non-profit making Association and relative expenses are shared by all its member banks.

FEDAI acts as a facilitating body and in consultation with Reserve Bank of India, frames rules / regulations for ADs in India for conduct of the foreign exchange business related transactions.

FEDAI is the Association of the member Banks. Naturally, the guidelines and rules prepared are in the interest of the member Banks. However, on account of liberalization and reforms introduced during 1991 to boost the foreign trade to and fro India, it becomes imperative by FEDAI to review Rules and Guidelines.

FEDAI has also taken due care of the interest of both Importers and Exporters while revising rules and guidelines.

Merchant Quote Guidelines issued by FEDAI can be compiled as follows:

- The exchange rate to be quoted in direct terms i.e. so many Rupees and Paise for 1 unit of foreign currency or 100 units of foreign currencies.
- Rounding off Rupee equivalent of the foreign currency at the greed merchant rate. Settlement of all merchant transactions shall be effected on the principle of rounding off the Rupee amounts to the nearest whole Rupee i.e., without paise.
- Common Currencies: A list of common currencies and the unit of rate quotations are as detailed below :

Currencies to be quoted against one unit of foreign currency:

1. Australian Dollar
2. Bahraini Dinar
3. Canadian Dollar
4. Danish Kroner
5. Egyptian Pound
6. Hongkong Dollar
7. Kuwaiti Dinar
8. Malaysian Ringgit
9. New Zealand Dollar
10. Norwegian Kroner
11. Oman Rial
12. Qatar Riyal
13. Saudi Riyal
14. Singapore Dollar
15. Sterling Pound
16. Swedish Kroner

17. Swiss Franc
18. Thai Baht
19. UAE Dirham
20. US Dollar
21. Euro

Currencies to be quoted against 100 units of foreign currencies :

1. Indonesian Rupiahs
2. Japanese Yen
3. Kenyan Schilling

Use of Excel as a tool, Developing formulae, Constructing Tables

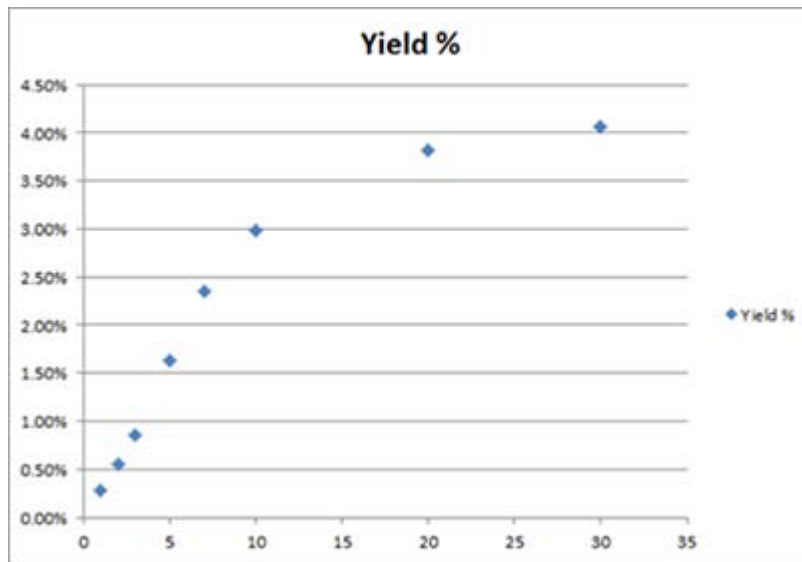
Excel offers many powerful mathematical and statistical functions that allow us to solve numerous business problems. One of the typical challenges is that we don't have all the information we need! Using Treasury bonds as an example; it only has yield rate for certain maturities, e.g., one year, two years, three years, five years. If we want yield rate for a four-year maturity bond, then we may have to find a mathematician/statistician to interpolate the value for us. Fortunately, we can be the mathematician/statistician if we have Microsoft Excel. Excel has a few tools that we can use to interpolate values; and we are going to demonstrate a few of them here.

Let us assume the yield rates mentioned in the following table for our working:

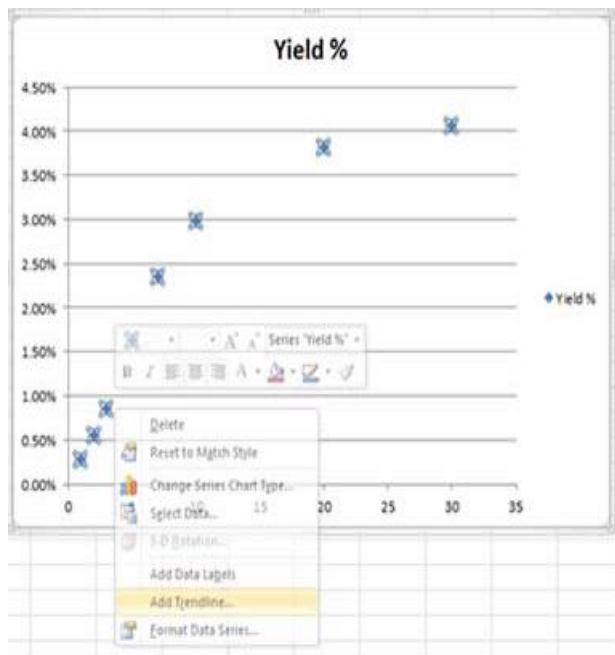
Year	Yield %
1	0.28%
2	0.56%
3	0.85%
5	1.64%
7	2.35%

10	2.99%
20	3.82%
30	4.06%

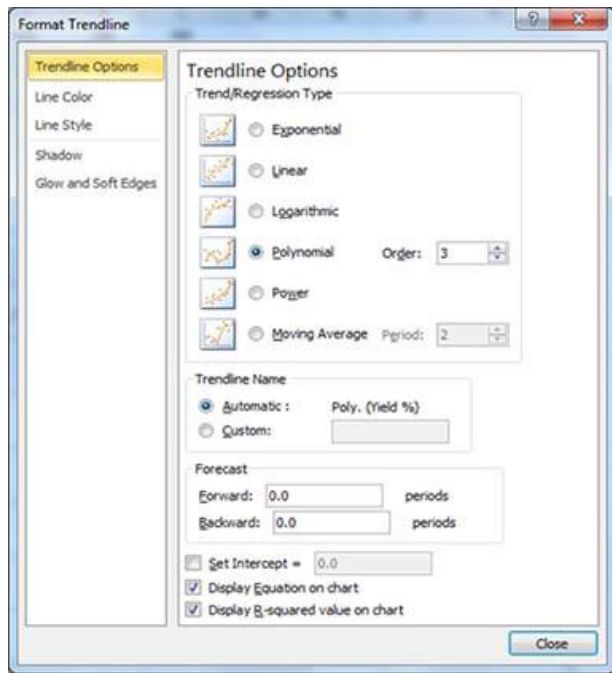
Once we have the data, we can create a trendline. The first step is to create a chart (graph) based on the yield rate.



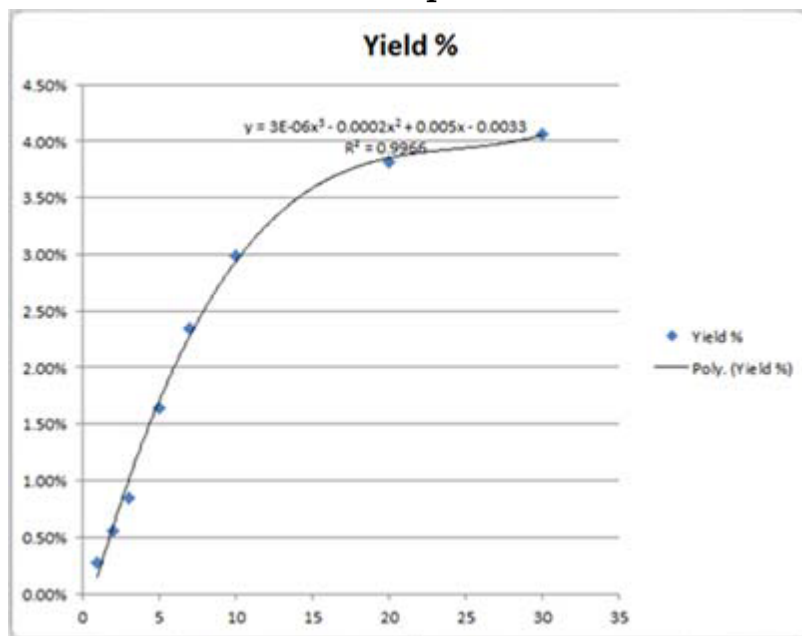
It is very simple to add a Trendline: just right-click the data series in the chart. From the pop-up menu, select Add Trendline.



The Format Trendline dialogue will be displayed (see below). For this example, we will choose Polynomial with Order 3 as the trend type and we also select to Display Equation on chart and Display R-squared value on chart.



After we click the Close button, we would see a trendline is added to the chart with the equation and R2.



Worksheet Functions:

Excel provides many functions to project values:

- Forecast
- Trend
- Growth
- Linest
- Logest

We are going to use LINEST in this demonstration, which generates statistics for a "least squares" linear regression.

Since the yield curve is a third order polynomial function, we have four variables.

$$Yield = a1 * Years^3 + a2 * Years^2 + a3 * Years + a4$$

Enter the following formula in our Excel worksheet to identify the Coefficients a1 through a4 in the formula above:

=INDEX(LINEST(Yield, Years^{1,2,3}),1,1)

=INDEX(LINEST(Yield, Years^{1,2,3}),1,2)

=INDEX(LINEST(Yield, Years^{1,2,3}),1,3)

=INDEX(LINEST(Yield, Years^{1,2,3}),1,4)

Yield and Years are the defined range names containing the Y and X points. We can see the coefficients a1, a2, a3 a4 and even R2 are very close to the results from Trendline.

a1	2.70683E-06
a2	-0.000198231
a3	0.004970323
a4	-0.003253473
R2	0.996593232

The formula for R2 is: =INDEX(LINEST(Yield, Years^{1,2,3},TRUE,TRUE),3,1) Note the additional parameters in the LINEST function—the last one (TRUE) tells the function to return additional regression statistics.

Now we have all coefficients, we can interpolate the yield rates that we need.

Years	Bond Yield Rate	Projected Yield Rate
1	0.28%	0.15%
2	0.56%	0.59%
3	0.85%	0.99%
4		1.36%
5	1.64%	1.70%
6		2.00%
7	2.35%	2.28%
8		2.52%
9		2.74%
10	2.99%	2.93%
11		3.10%
12		3.25%
13		3.38%
14		3.49%
15		3.58%
16		3.66%
17		3.73%
18		3.78%
19		3.82%
20	3.82%	3.85%
21		3.88%
21		3.88%
23		3.91%
24		3.93%
25		3.94%
26		3.95%
27		3.97%
28		3.99%
29		4.02%
30	4.06%	4.05%

Solver

If we want to use some custom functions, e.g., the Nelson-Siegel function to interpolate the yield value, "Solver" is a good tool for the job. The Nelson—Siegel function is a modified Exponential function:

$$Yield = A1 + (A2+A3) * (Beta / Years) * (1-e^{-Years/Beta}) - A3 * e^{-Years/Beta}$$

	A	B	C	D	E
1		Years	Yield %	Nelson-Siegel Projected Values	Squared Residual
2		1	0.28%	9.48%	0.008467328
3		2	0.56%	8.65%	0.006539386
4		3	0.85%	7.92%	0.004996286
5		5	1.64%	6.95%	0.002822621
6		7	2.35%	6.42%	0.001658696
7		10	2.99%	6.00%	0.000905846
8		20	3.82%	5.50%	0.00028224
9		30	4.06%	5.33%	0.000162138
10					0.025834541
11					
12				Alpha1	0.05
13				Alpha2	0.05
14				Alpha3	0.05
15				Beta	1

Column D shows the projected values that are based on Nelson-Siegel function (using arbitrary initial parameters) and Column E is the Squared Residual value between the projected and actual values. We can use "Solver" to minimize the sum of all Squared Residual values (cell E10) by adjusting the function parameters (cells E12 through E15).

"Solver" is accessed from the "Data" ribbon bar in the "analysis" section at the far right. Solver setup is quite straight forward: we specify the Objective (and whether to solve for Minimum, Maximum, or a specific value), and Variable Cells (the parameters that will be changed).

Present and future value of money

Future value of money is different from its present value, also known as time value of money. The time value of money is the principle that a certain currency amount of money today has a

different buying power (value) than the same currency amount of money in the future. The value of money at a future point of time would take account of interest earned or inflation accrued over a given period of time. This notion exists both because there is an opportunity to earn interest on the money and because inflation will drive prices up, thus changing the "value" of the money. The time value of money is the central concept in finance theory. However, the explanation of the concept typically looks at the impact of interest and assumes, for simplicity, that inflation is neutral.

For example, Rs100 of today's money invested for one year and earning 5% interest will be worth Rs105 after one year. Therefore, Rs 100 paid now or Rs 105 paid exactly one year from now both have the same value to the recipient who assumes 5% interest; using time value of money terminology, Rs100 invested for one year at 5% interest has a *future value* of Rs105.

The method also allows the valuation of a likely stream of income in the future, in such a way that the annual incomes are discounted and then added together, thus providing a lump-sum "present value" of the entire income stream.

All of the standard calculations for time value of money derive from the most basic algebraic expression for the present value of a future sum, "discounted" to the present by an amount equal to the time value of money. For example, a sum of *FV* to be received in one year is discounted (at the rate of interest *r*) to give a sum of *PV* at present: $PV = FV - r \cdot PV = FV / (1 + r)$.

Some standard calculations based on the time value of money are:

Present value: The current worth of a future sum of money or stream of cash flows given a specified rate of return. Future cash flows are discounted at the discount rate, and the higher the

discount rate, the lower the present value of the future cash flows. Determining the appropriate discount rate is the key to properly valuing future cash flows, whether they be earnings or obligations.

Benchmark rates for discounting cash flows

A discount rate is the percentage by which the value of a cash flow in a discounted cash flow (DCF) valuation is reduced for each time period by which it is removed from the present.

The estimation of a suitable discount rate is often the most difficult and uncertain part of a DCF. This is only worsened by the fact that the final result is very sensitive to the choice of discount rate — a small change in the discount rate causes a large change in the value.

For listed securities the discount rate is most often calculated using CAPM. The availability of both data to calculate betas and of services that provide beta estimates makes this convenient.

Cash flows other than listed securities:

For unlisted securities and for other types of streams of cash flows it becomes even more difficult. If listed securities exist that are similar in terms of undiversifiable risk, then these can be used as benchmarks to estimate what the appropriate discount rate should be.

A comparatively simple approach is to find a pure play company in as similar a business as possible and calculate its WACC (weighted average cost of capital). This may be the appropriate discount rate, or it may need further adjustment. If further adjustments are needed it is usually best to work from the WACC, using the CAPM, to calculate what the beta would be given only equity funding, and adjust the beta. This is correct because of capital structure irrelevance.

Sometimes it is possible to make simple adjustments. For example, if the cash flows face a similar (undiversifiable component of) revenue volatility to the benchmark, but a different level of operational gearing, simply multiply the beta by the ratio of $(1 + \text{fixed costs as a percentage of revenues})$ for the cash flows being evaluated to the same for the benchmark.

In many cases it will be necessary to use detailed modelling to estimate the difference in the sensitivity to undiversifiable elements. In practice this means modelling the relationship between economic growth (the economy is the main undiversifiable risk) and both sets of cash flows. It may be simpler to use the market as the benchmark, in which case the ratio is the beta.

A last resort approach is to simply use what appears to be a sensible risk premium over the market or the risk free rate.

In all cases, especially the last, it is useful to calculate a DCF with several different discount rates, so that the sensitivity of the final result to this assumption can be clearly seen.

YTM –Modified YTM, Current Yield

The term *Yield to Maturity* is also called as Redemption Yield often abbreviated as YTM and used when it comes to bond funds, is defined as the rate of return obtained by buying a bond at the current market price and holding it to maturity. Yield to Maturity is the index for measuring the attractiveness of bonds. When the price of the bond is low the yield is high and vice versa. YTM is beneficial to the bond buyer because a rising yield would decrease the bond price hence the same amount of interest is paid but for less money. Where the coupon payment refers to the total interest per year on a bond. Yield to maturity can be mathematically derived and calculated from the formula:

$$\text{Yield to Maturity} = \frac{\text{Annual Interest} + \frac{\text{Par Value} - \text{Market Price}}{\text{Number of Years to Maturity}}}{\frac{\text{Par Value} + \text{Market Price}}{2}}$$

YTM is therefore a good measurement gauge for the expected investment return of a bond. When it comes to online calculation, this Yield to Maturity calculator can help you to determine the expected investment return of a bond according to the respective input values. YTM deals only with the time-value-of-money calculations between the price, coupons and face value of the bond at hand, not with other potential future investments. If the coupons and face value are paid as promised the bond earns its yield-to-maturity.

Current Yield: A simple yield calculation that is often used to calculate the yield on both bonds and the dividend yield for stocks is the current yield. The current yield calculates the percentage return that the annual coupon payment provides the investor. In other words, this yield calculates what percentage the actual dollar coupon payment is of the price the investor pays for the bond. The multiplication by 100 in the formulas below converts the decimal into a percentage, allowing us to see the percentage return:

$$\text{Current Yield} = \frac{\text{Annual Interest Paid}}{\text{Market Price}} * 100\%$$

So, if you purchased a bond with a par value of Rs100 for Rs95.92 and it paid a coupon rate of 5%, this is how you'd calculate its current yield:

$$= \frac{(0.05 * 100)}{95.92} * 100\% = 5.21\%$$

Notice how this calculation does not include any capital gains or losses the investor would make if the bond were bought at a discount or premium. Because the comparison of the bond price to its par value is a factor that affects the actual current yield, the above formula would give a slightly inaccurate answer - unless of course the investor pays par value for the bond. To correct this, investors can modify the current yield formula by adding the result of the current yield to the gain or loss the price gives the investor: [(Par Value – Bond Price)/Years to Maturity]. The **modified current yield** formula then takes into account the discount or premium at which the investor bought the bond. This is the full calculation:

$$\text{Adjusted Current Yield} = \left[\frac{\text{Annual Coupon}}{\text{Market Price}} \right] * 100 + \left[\frac{(100 - \text{Market Price})}{\text{Years to Maturity}} \right]$$

Let's re-calculate the yield of the bond in our example, which matures in 30 months and has a coupon payment of Rs5:

$$= \frac{5}{95.92} * 100 + \frac{(100 - 95.92)}{2.5} = 6.84\%$$

The adjusted current yield of 6.84% is higher than the current yield of 5.21% because the bond's discounted price (Rs95.92 instead of Rs100) gives the investor more of a gain on the investment.

Term structure of interest rates

Term structures of interest rates represent the relationship between interest rates or bond yields and different terms or maturities. The term structure of interest rates is also known as a yield curve and it plays a central role in an economy. The term structure reflects expectations of market participants about future changes in interest rates and their assessment of monetary policy conditions.

In general terms, yields increase in line with maturity, giving rise to an upward sloping yield curve or a "normal yield curve." One basic explanation for this phenomenon is that lenders demand higher interest rates for longer-term loans as compensation for the greater risk associated with them, in comparison to short-term loans. Occasionally, long-term yields may fall below short-term yields, creating an "inverted yield curve" that is generally regarded as a harbinger of recession.

Risk Measures – VaR – Duration and Mecauly Duration

VaR measures the possible adverse change in market value of a financial instrument, based on what is regarded as the largest likely adverse move in rates or prices over a given timeframe. It also includes the correlation between different financial instruments to measure the volatility of a financial portfolio of instruments.

Mecauly Duration is the weighted average term to maturity of the cash flows from a bond. The weight of each cash flow is determined by dividing the present value of the cash flow by the price, and is a measure of bond price volatility with respect to interest rates.

Macaulay duration can be calculated by:

$$\text{MacaulayDuration} = \frac{\sum_{t=1}^n \frac{t * C}{(1+y)^t} + \frac{n * M}{(1+y)^n}}{\text{Current Bond Price}}$$

Where :

t=respective timeperiod

C=periodic coupon payment

y=periodic yeild

n=total number of periods

M=maturity value

The metric is named after its creator, Frederick Macaulay. Macaulay duration is frequently used by portfolio managers who use an immunization strategy. Macaulay duration is also used to measure how sensitive a bond or a bond portfolio's price is to changes in interest rates.

Interest rate sensitivity

Interest rate sensitivity is a measure of price change of a fixed-income asset as a result of changes in the interest rate environment. Securities that are more sensitive will have greater price fluctuations than those with less sensitivity. This type of sensitivity must be taken into account when selecting a bond or other fixed-income instrument that the investor may sell in the secondary market.

Generally, the longer the maturity of the asset, the more sensitive the asset will be to changes in interest rates. A fund with duration of 10 years is twice as volatile as a fund with five-year duration. Duration also gives an indication of how a fund's NAV will change

as interest rates change. A fund with five-year duration would be expected to lose 5% from its NAV if interest rates rose by one percentage point or gain 5% if interest rates fell by one percentage point. Changes in interest rates are watched closely by bond and fixed income traders, as the resulting price fluctuations will affect the overall yield of the securities. Investors who understand the concept of duration can immunize their fixed-income portfolios to changes in short-term interest rates.

Liquidity & interest rate sensitivity gap measures under ALM – RBI guidelines

To strengthen the Management Information System within the FIs and to sensitize them to the market risk, RBI has issued certain guidelines under ALM. Under the ALM Guidelines, the FIs are required to prepare periodical statements on liquidity gap and interest rate sensitivity and put up to their top management.

In the ALM systems prescribed for FIs, not only the items of assets and liabilities appearing on the balance sheets of FIs are captured but also the cash flows emanating from these items over the entire life of the asset, liability or contingent commitments. While the Reserve Bank has prescribed prudential limits on negative liquidity gaps at 10 per cent and 15 per cent of the cash outflows in the first two time buckets (viz., 1 to 14 days and 15 to 28 days), the FIs themselves have to evolve internal prudential limits for cumulative negative liquidity gaps across all time buckets as also for the interest rate gaps in various time buckets with the approval of their Board/ALCO. The ALM system also aims at capturing the foreign currency portfolio of the FIs and therefore, the FIs are also required to compile currency-wise liquidity and interest rate sensitivity (IRS) reports in respect of their foreign currency exposures - for which separate formats have been prescribed.

The envisaged ALM system seeks to introduce a formalized framework for management of market risks through measuring, monitoring and managing liquidity, exchange rate and interest rate risks of a FI that need to be closely integrated with the FIs' business strategy. The initial focus of the ALM function should be to enforce the discipline of market risk management viz. managing business after assessing the market risks involved. The objective of good risk management systems should be to evolve into a strategic tool for effective management of FIs.

The ALM process rests on three pillars:

- ALM Information System
 - Management Information System
 - Information availability, accuracy, adequacy and expediency
- ALM Organisation
 - Structure and responsibilities
 - Level of top management involvement
- ALM Process
 - Risk parameters
 - Risk identification
 - Risk measurement
 - Risk management
 - Risk policies and tolerance levels.

ALM has to be supported by a management philosophy which clearly specifies the risk policies and tolerance limits. This framework needs to be built on sound methodology with necessary supporting information system as the central element of the entire ALM exercise is the availability of adequate and accurate information with expedience. Thus, information is the key to the ALM process. There are various methods prevalent world-wide for measuring risks. These range from the simple Gap Statement to extremely sophisticated and data intensive Risk Adjusted

Profitability Measurement methods. The present guidelines would require comparatively simpler information system for generating liquidity gap and interest rate gap reports.

Liquidity Risk Management:

As suggested by AML guidelines, liquidity position should be tracked through maturity or cash flow mismatches by FIs on ongoing basis. For measuring and managing net funding requirements, the use of a maturity ladder and calculation of cumulative surplus or deficit of funds at selected maturity dates is adopted as a standard tool. The maturity profile could be used for measuring the future cash flows of FIs in different time buckets as follows:

- i) 1 to 14 days
- ii) 15 to 28 days
- iii) 29 days and upto 3 months
- iv) Over 3 months and upto 6 months
- v) Over 6 months and upto 1 year
- vi) Over 1 year and upto 3 years
- vii) Over 3 years and upto 5 years
- viii) Over 5 years and upto 7 years
- ix) Over 7 years and upto 10 years
- x) Over 10 years.

The investments are assumed as illiquid due to lack of depth in the secondary market and are, therefore, generally shown, as per their residual maturity, under respective time buckets. However, some of the FIs may be maintaining securities in the 'Trading Book', which are kept distinct from other investments made for retaining relationship with customers. Securities held in the 'Trading Book' should be subject to the following preconditions:

- i) The composition and volume of the Trading Book should be clearly defined;
- ii) Maximum maturity/duration of the trading portfolio should be restricted;
- iii) The holding period of the trading securities should not exceed 90 days;
- iv) Cut-loss limit(s) should be prescribed;
- v) Product-wise defeasance periods (i.e. the time taken to liquidate the 'position' on the basis of liquidity in the secondary market) should be prescribed;
- vi) Such securities should be marked-to-market on a daily/weekly basis and the revaluation gain/loss should be charged to the profit and loss account.

Interest Rate Risk (IRR)

Interest rate risk is the risk where changes in market interest rates might adversely affect a FI's financial condition. The immediate impact of changes in interest rates is on FI's earnings (i.e. reported profits) by changing its Net Interest Income (NII). A long-term impact of changing interest rates is on FI's Market Value of Equity (MVE) or Net Worth as the economic value of bank's assets, liabilities and off-balance sheet positions get affected due to variation in market interest rates. The interest rate risk when viewed from these two perspectives is known as 'earnings perspective' and 'economic value' perspective, respectively. The risk from the earnings perspective can be measured as changes in the Net Interest Income (NII) or Net Interest Margin (NIM). There are many analytical techniques for measurement and management of Interest Rate Risk. In the context of poor MIS, slow pace of computerization in FIs, the traditional Gap analysis is considered to be a suitable method to measure the Interest Rate Risk in the initial phase of the ALM system. However, the FIs, which are better equipped, would have the option of deploying advanced IRR

management techniques with the approval of their Board / ALCO, in addition to the Gap Analysis prescribed under the guidelines. It is the intention of RBI to move over to the modern techniques of Interest Rate Risk measurement like Duration Gap Analysis, Simulation and Value at Risk over time when FIs acquire sufficient expertise and sophistication in acquiring and handling MIS.

The Gap or Mismatch risk can be measured by calculating Gaps over different time intervals as at a given date. Gap analysis measures mismatches between rate sensitive liabilities and rate sensitive assets (including off-balance sheet positions). An asset or liability is normally classified as rate sensitive if:

- i) Within the time interval under consideration, there is a cash flow;
- ii) The interest rate resets/reprices contractually during the interval;
- iii) It is contractually pre-payable or withdrawable before the stated maturities;
- iv) It is dependent on the changes in the Bank Rate by RBI.

The Gap Report should be generated by grouping rate sensitive liabilities, assets and off-balance sheet positions into time buckets according to residual maturity or next re-pricing period, whichever is earlier. All investments, advances, deposits, borrowings, purchased funds, etc. that mature/re-price within a specified timeframe are interest rate sensitive. Similarly, any principal repayment of loan is also rate sensitive if the FI expects to receive it within the time horizon. This includes final principal repayment and interim installments. Certain assets and liabilities carry floating rates of interest that vary with a reference rate and hence, these items get re-priced at pre-determined intervals. Such assets and liabilities are rate sensitive at the time of re-pricing. While the interest rates on term deposits and bonds are generally fixed

during their currency, the interest rates on advances could be re-priced any number of occasions, on the pre-determined reset / re-pricing dates and the new rate would normally correspond to the changes in PLR.

The interest rate gaps may be identified in the following time buckets:

- i) 1-28 days
- ii) 29 days and upto 3 months
- iii) Over 3 months and upto 6 months
- iv) Over 6 months and upto 1 year
- v) Over 1 year and upto 3 years
- vi) Over 3 years and upto 5 years
- vii) Over 5 years and upto 7 years
- viii) Over 7 years and upto 10 years
- ix) Over 10 years
- x) Non-sensitive

The various items of rate sensitive assets and liabilities and off-balance sheet items may be classified into various time-buckets. The Gap is the difference between Rate Sensitive Assets (RSA) and Rate Sensitive Liabilities (RSL) for each time bucket. The positive Gap indicates that it has more RSAs than RSLs whereas the negative Gap indicates that it has more RSLs. The Gap reports indicate whether the institution is in a position to benefit from rising interest rates by having a positive Gap ($RSA > RSL$) or whether it is in a position to benefit from declining interest rates by a negative Gap ($RSL > RSA$). The Gap can, therefore, be used as a measure of interest rate sensitivity.

Each FI should set prudential limits on interest rate gaps in various time buckets with the approval of the Board/ALCO. Such prudential limits should have a relationship with the **Total**

Assets, Earning Assets or Equity. In addition to the interest rate gap limits, the FIs which are better equipped would have the option of setting the prudential limits in terms of Earnings at Risk (EaR) or Net Interest Margin (NIM) based on their views on interest rate movements with the approval of the Board/ALCO.

Financial Statement Analysis- Profitability Ratios and growth

Financial analysis of a company is necessary to help the treasury manager to decide whether to invest in the company. Such analysis also helps the company in internal controls. The soundness and intrinsic worth of a company is known only by such analysis. The market price of a share depends, among other things on the sound fundamentals of the company, the financial and operational efficiency and the profitability of that company. These factors can be known by a study of financial statements of the company.

These qualitative considerations will often find expression in internal financial ratios. These ratios represent the level of financial strength a company considers it should maintain in order to achieve qualitative factors such as financial flexibility and credit worthiness.

There are two classes of ratios; balance-sheet-based, earnings and cashflow-based.

Balance sheet ratios

Net borrowings: tangible net worth

Tangible net worth is calculated as shareholders' funds less intangible items such as goodwill. It is a crude measure of what might be realized in a winding-up situation.

Net borrowings: net assets

Net assets are calculated from total assets less total liabilities. Another term for this is debt gearing or leverage.

Both the above are crude measures of the amount of cover for debt providers in the event of liquidation or winding up. Arguably this is hardly something to concern the treasurer or finance director. Also, many providers of debt have found that in wind-up situations the realizable value of assets bears no relationship to their book value. Increasingly therefore, more emphasis is being placed by both borrowers and providers of finance on ratios that measure a company's ability to meet its financial obligations on an ongoing basis.

Earnings and cashflow-based ratios

Interest cover

This is a simple measure of a company's ability to pay the ongoing interest cost of its debts. The philosophy behind this measure seems to be that provided interest costs can be met, existing debt can always be re-financed with fresh debt.

Profit on ordinary activities before interest

Net Interest before subtracting capitalizes interest

In calculating the above ratio a company needs to consider whether adjustments need to be made for such items as:

- One-off exceptional items such as gains and losses on disposal of businesses.
- These can introduce large fluctuations in profit and hence on interest cover from year to year.
- Interest income. Does interest income arise from temporary cash balances that will be used to pay down borrowings and hence reduce interest expense, or does it arise from long-

term lending such as customer finance leases? Should interest income be netted against interest expense in calculating net interest?

- Operating leases. Some companies decide to lease equipment as opposed to purchasing it. Should adjustments be made to operating profits and interest expense to reflect this?
- Profit from discontinued operations: Interest cover is a ratio that is easily understood and calculated. As such it is a popular measure in some companies. However it takes no account of the various provisions, charges and other non-cash items charged or credited in calculating operating profits.

EBITDA interest coverage

This ratio attempts to overcome the disadvantages of interest cover by adjusting that ratio for the two largest regular non-cash items usually charged in calculating operation profit before tax, namely depreciation and amortization (generally of balance sheet goodwill). It attempts to measure the one true factor of a company's ability to pay interest expense: its cashflow.

Profit on ordinary activities before interest, taxes, depreciation and amortization (EBITDA)

Net interest expense before subtracting capitalized interest

Net interest expense before subtracting capitalized interest
EBITDA interest coverage is a simple calculation that gets closer to a company's ongoing cash resources to service its debt. Again, it is a simple ratio to calculate and is easily understood. However, it still takes no account of a number of other provisions and non-cash items that may be charged or credited in the profit and loss

account. Nor does it take account of a company's ability to repay its debts as they mature.

Funds from operations/net debt

It is not only a company's ability to pay interest expense on its debts that is important in assessing financial strength and borrowing capacity, but also its ability to repay its loans as they fall due. Debt providers are equally concerned with the question of 'How are we going to get repaid?' The calculation below attempts to measure the company's ability to repay loans from its cashflow.

Profit on ordinary activities after tax plus depreciation, amortization & other non-cash items

Long term debt (including current maturities) plus short term borrowings (total debt)

While it is a simple ratio to calculate and understand, the calculation takes no account of the maturity profile of a company's debts. Take two companies, both with the same cashflow and level of debt:

	<i>Company A</i>	<i>Company B</i>
	<i>Rs Cr</i>	<i>Rs Cr</i>
Funds from operations	250	250
Total debt	1,000	1,000

Funds from operations/total debt are the same for both companies, namely 0.25 times. However, if the average weighted life of debt for Company A was five years and that for Company B was ten years, Company B would have less re-financing and repayment pressure than Company A.

Again the calculation takes no account of the other non-cash items involved in calculating operating profits before interest.

Free operating cashflow/total debt

This is calculated as:

Funds from operations minus maintenance capital expenditure
minus (plus) the increase (decrease) in working capital

Total Debt

This is a more complex calculation than the earlier ones, since a company needs to know what its maintenance capital expenditure is. (Maintenance capital is that capital expenditure that must be incurred in order to maintain the fabric and earning capacity of the business.) In addition, working capital can show some major fluctuations from year to year in some organizations. This can introduce an element of instability into the calculation.

Technically this is a more precise calculation. It relates the real cashflow of the business to its financial obligations. However, it suffers from the same disadvantages as EBITDA/net debt; that is, it takes no account of the maturity of a company's debts.

What ratios should we operate with?

As explained earlier, the appropriate ratios to be used by a company and the precise level they should be set at are specific to that company. A whole range of factors to do with the company's business and financial structure are relevant.

Use of financial ratios within a business

Usually a company will have two 'layers' of financial ratios:

- Financial ratios in its key financing documents. These ratios are usually set at a very low level. If they are breached, it sends a signal to the lenders that there has been a significant change in the underlying financial health of the company.

Lenders are therefore put on notice that the credit quality of the company they originally lent to has now substantially deteriorated, and that unless action is taken their capital is at risk. Breaches of these covenants are normally expressed as events of default, allowing the providers of finance to request immediate repayment of their loans. In practice borrowers and lenders have to agree on effective plans of action to redress the deterioration in the company's financial position.

- Internal ratios that the company establishes to manage its financial stability. A company may have a guideline that interest cover should not fall below four times. Should it breach these internal guidelines, it needs an action programme to rectify the position. This programme may consist of asset disposals, reduction in capital expenditure or a postponement of planned acquisitions. Internal ratios will normally be set at levels well in excess of the ratios in the financing documents.

Most companies will try to ensure that they operate comfortably within their internal guidelines. This is generally because the remedy for breaching such guidelines can have negative impacts on their business. Thus a company may have an interest cover guideline of four times, but for prudential reasons may not want to see it fall below five times.

Profitability Ratios:

Profitability ratios show a company's overall efficiency and performance. We can divide profitability ratios into two types: margins and returns. Ratios that show margins represent the firm's ability to translate sales into profits at various stages of measurement. Ratios that show returns represent the firm's ability to measure the overall efficiency of the firm in generating returns for its shareholders.

Gross Profit Margin:

The gross profit margin looks at cost of goods sold as a percentage of sales. This ratio looks at how well a company controls the cost of its inventory and the manufacturing of its products and subsequently pass on the costs to its customers. The larger the gross profit margin, the better for the company. The calculation is: $\text{Gross Profit} / \text{Net Sales} = \text{___}\%$. Both terms of the equation come from the company's income statement.

Operating Profit Margin:

Operating profit is also known as EBIT and is found on the company's income statement. EBIT is earnings before interest and taxes. The operating profit margin looks at EBIT as a percentage of sales. The operating profit margin ratio is a measure of overall operating efficiency, incorporating all of the expenses of ordinary, daily business activity. The calculation is: $\text{EBIT} / \text{Net Sales} = \text{ _____\%}$. Both terms of the equation come from the company's income statement.

Net Profit Margin:

When doing a simple profitability ratio analysis, net profit margin is the most often margin ratio used. The net profit margin shows how much of each rupee sale shows up as net income after all expenses are paid. For example, if the net profit margin is 5%, which means that 5 paise of every rupee is profit.

The net profit margin measures profitability after consideration of all expenses including taxes, interest, and depreciation. The calculation is: $\text{Net Income} / \text{Net Sales} = \text{____\%}$. Both terms of the equation come from the income statement.

Cash Flow Margin:

The Cash Flow Margin ratio is an important ratio as it expresses the relationship between cash generated from operations and sales. The company needs cash to pay dividends, suppliers, service debt, and invest in new capital assets, so cash is just as important as profit to a business firm.

The Cash Flow Margin ratio measures the ability of a firm to translate sales into cash. The calculation is: $\text{Cash flow from operating cash flows} / \text{Net sales} = \text{____\%}$. The numerator of the equation comes from the firm's Statement of Cash Flows. The denominator comes from the Income Statement. The larger the percentage, the better it is.

Returns Ratios:

Return on Assets (also called Return on Investment)

The Return on Assets ratio is an important profitability ratio because it measures the efficiency with which the company is managing its investment in assets and using them to generate profit. It measures the amount of profit earned relative to the firm's level of investment in total assets. The return on assets ratio is related to the asset management category of financial ratios.

The calculation for the return on assets ratio is: $\text{Net Income} / \text{Total Assets} = \text{____\%}$. Net Income is taken from the income statement and total assets are taken from the balance sheet. The higher the percentage, the better it is, as it depicts the company is doing a good job using its assets to generate sales.

Return on Equity:

The Return on Equity ratio is perhaps the most important of all the financial ratios to investors in the company. It measures the

return on the money the investors have put into the company. This is the ratio potential investors look at when deciding whether or not to invest in the company. The calculation is: $\text{Net Income} / \text{Stockholder's Equity} = \text{_____}\%$. Net income comes from the income statement and stockholder's equity comes from the balance sheet. In general, the higher the percentage, the better it is, with some exceptions, as it shows that the company is doing a good job using the investors' money.

Cash Return on Assets:

The cash return on assets ratio is generally used only in more advanced profitability ratio analysis. It is used as a comparison to return on assets since it is a cash comparison to this ratio as return on assets is stated on an accrual basis. Cash is required for future investments. The calculation is: $\text{Cash flow from operating activities} / \text{Total Assets} = \text{_____}\%$. The numerator is taken from the Statement of Cash Flows and the denominator from the balance sheet. The higher the percentage, the better it is.

Comparative Data

Financial ratio analysis is only a good method of financial analysis if there is comparative data available. The ratios should be compared to both historical data for the company and industry data.

The DuPont Model- A helping tool

There are so many financial ratios - liquidity ratios, debt or financial leverage ratios, efficiency or asset management ratios, and profitability ratios - that it is often hard to see the big picture. You can get bogged down in the detail. One method that business owners can use to summarize all of the ratios is to use the Dupont Model.

The Dupont Model is able to show a business owner where the component parts of the Return of Assets (or Return on Investment ratio) comes from as well as the Return on Equity ratio. For example, did ROA come from net profit or asset turnover? Did return on equity come from net profit, asset turnover, or the business' debt position? The DuPont model is very helpful to business owners in determining in financial adjustments need to be made.

Efficiency Ratios:

Efficiency ratios are typically used to analyze how well a company uses its assets and liabilities internally. Efficiency Ratios can calculate the turnover of receivables, the repayment of liabilities, the quantity and usage of equity and the general use of inventory and machinery.

Some common ratios are accounts receivable turnover, fixed asset turnover, sales to inventory, sales to net working capital, accounts payable to sales and stock turnover ratio. These ratios are meaningful when compared to peers in the same industry and can identify businesses that are better managed relative to the others. Also, efficiency ratios are important because an improvement in the ratios usually translate to improved profitability.

Liquidity Ratios:

Liquidity ratios are a class of financial metrics that are used to determine a company's ability to pay off its short-term debts obligations. Generally, the higher the value of the ratio, the larger the margin of safety that the company possesses to cover short-term debts.

Common liquidity ratios include the current ratio, the quick ratio and the operating cash flow ratio. Different analysts consider different assets to be relevant in calculating liquidity. Some analysts will calculate only the sum of cash and equivalents divided by current liabilities because they feel that they are the most liquid assets, and would be the most likely to be used to cover short-term debts in an emergency.

A company's ability to turn short-term assets into cash to cover debts is of the utmost importance when creditors are seeking payment. Bankruptcy analysts and mortgage originators frequently use the liquidity ratios to determine whether a company will be able to continue as a going concern. Testing a company's liquidity is a necessary step in analyzing a company.

Valuation Ratios:

The theory of buying low and selling high makes investing seem all too easy. For many, it is difficult to truly know when prices are cheap or expensive. In theory, the value of an investment is equal to the sum of its earnings or cash flows, which are discounted by some expected rate of return. From this general theory, many different short-hand methods have evolved to assist investors in making a quick determination as to a company's investment value using valuation ratios.

In many instances, a low ratio is considered a sign of an undervalued security, while a high ratio is considered an overvalued security. However, one major problem is that ratios typically do not take into account the future expected growth of the company itself. It is the prospects for the company's future growth combined with these estimated valuations that help you reach reasonable conclusions.

Price/Earnings Ratio:

The price/earnings ratio, commonly referred to as the P/E ratio, is a standard method for comparing stocks based on their relative expense. A company's P/E is calculated by dividing its current price per share by its earnings per share.

With the P/E ratio, treasurers can evaluate the difference between what they are paying for the stock and its earning power. A company with a P/E of 40 is trading at a level 40 times higher than its earnings, while a company with a P/E of 20 is trading at a level 20 times its earnings.

A high P/E ratio may signify that the company is overvalued, which means that eventually market forces will drive the price down. On the other hand, a high P/E could indicate great earning power and the possibility that profitability will increase over time, justifying the higher price.

A low P/E may indicate the potential for strong future performance. Companies with low P/Es may be undervalued, or trading at a price lower than the company's fundamentals merit. In that case, earnings may increase dramatically in future weeks and years. Or, a low P/E could just as easily denote a faltering company that would be an inadvisable investment.

P/E is a valuable tool but it does not provide all the information we need to make an informed decision.

Price/Earnings Growth (PEG) Ratio:

One ratio that was developed to help counter the shortfalls of the traditional P/E ratio is the PEG Ratio. Growth in earnings is what

helps determine whether a high or low P/E is justified. So, the formula for determining a PEG ratio is:

$$\text{PEG Ratio} = (\text{price/earnings}) / \text{earnings growth rate}$$

By taking into consideration growth of the company's earnings, we can see that a low PEG ratio means that the company is trading at a low price relative to its earnings growth potential. A high PEG ratio means that the company's stock is trading at a high price relative to its earnings growth potential.

As with any ratio, there are potential pitfalls. As an example, when you calculate a PEG ratio, should you use historical growth rates of earnings or estimated earnings? Historical growth rates do not always indicate a reasonable future growth rate for earnings and projected future earnings growth rates can be over or understated.

Even with the mentioned pitfalls, the PEG ratio has become a common tool used for a quick measure of valuation. While no exact value for the ratio is considered good or bad, many have determined general rules. In some theories, a ratio of 2 or higher is considered overvalued, with PEG ratios of around 1 or lower considered to signal an undervalued investment.

Price to Sales (P/S) Ratio

In some cases, a company that you are seeking to value does not have any current earnings. In other cases the company is very young or might be experiencing a cyclical low in their earnings cycle. Additionally, a variety of accounting rules can make a profitable company appear to have no earnings due to special write-offs specific to that industry. For all of the above-mentioned reasons, some prefer to use a ratio of current price to sales of the company. As with most ratios, the lower the ratio the better the expected value of those companies' shares. However, much like

the P/E ratio, it fails to account for future growth and therefore can give you misleading results if used alone.

Price to Cash Flow Ratio

A middle ground between the Price to Sales and P/E Ratio is the Price to Cash Flow Ratio. Price to cash flow takes into consideration the many accounting rules that can hide a company's earnings while also focusing on the company's ability to be profitable. The purpose of the Statement of Cash Flows produced by companies is to show the actual cash generated by the company by removing non-cash related expenses and determining the actual uses and sources of cash of the company being evaluated. One of the end results of those calculations is the company's reported cash flow from operations. The calculation for price to cash flow is:

Price to Cash Flow Ratio = current price / cash flow from operations per share

or

Price to Cash Flow Ratio = market capitalization / cash flow from operations

As mentioned before, a lower ratio is generally considered desirable if other factors lead you to believe the company has bright future prospects.

Additionally, some analysts will remove from cash flows from operations the capital expenditures of the company in order to calculate Free Cash Flow. Capital expenditures are the expenses considered to be the minimum amount of reinvestment needed to keep the company operational. Therefore, Free Cash Flow would be the funds that the company has in excess of what is necessary to run the firm. At this point, the firm could choose to reinvest

those funds or pay them as a dividend to shareholders. It is calculated using the same methods as price to cash flows and is interpreted in the same fashion.

Price to Book Value (P/B Ratio)

One final ratio comes to us from the balance sheet. The balance sheet is designed to tell us the book value or equity of a company as of a specific reporting period. The equity value of the company represents the firm's worth in the case of liquidation. It is calculated by dividing the current price of the company by the reported book value per share. As with other ratios, a high ratio could indicate the firm is overvalued relative to the equity of the company. A low ratio could indicate the firm is undervalued relative to the equity of the company.

Unfortunately, because of the way accounting rules work, the assets reported on the balance sheet might be held at cost or some other value that would not accurately reflect what the firm could get for them today. Additionally, the balance sheet is not always able to accurately represent the true earning power of those assets. Therefore, the ratio itself might be misleading without some form of additional analysis and modifications to balance sheet accounts.

Applying Ratios

In discussing the actual ratios themselves we have reviewed the primary use, which is to measure the value based on a general perception. However, we can apply these ratios in a few other ways.

First, we can look back historically to see the general range that the market has applied to that particular company in the past. As an example, suppose a stock historically trades at a P/E ratio of

between 10 - 15. By that standard, a P/E ratio below 10 would be considered low while a P/E above 15 might be considered high.

A second method is to compare ratios of peer companies or to the market in general. In this fashion, you can determine how expensive the stock is relative to the market or one of its competitors. However, the discussion would not be complete without one additional warning about ratio analysis. If the market or an industry sector itself is over or undervalued, then peer comparison by itself might lead you to incorrect conclusions.

PART-III

Domestic or National Treasury Market

National Treasury Market primarily consists of capital market, money market, commodity market and government securities market. We will be discussing these constituents in detail below:

Capital Market

Capital markets are financial markets for the buying and selling of long-term debt- or equity-backed securities. These markets channel the wealth of savers to those who can put it to long-term productive use, such as companies or governments making long-term investments.

The Capital Market comprises the complex of institutions and mechanisms through which intermediate term funds and long term funds are pooled and made available to business, government and individuals. The Capital Market also encompasses the process by which securities already outstanding are transferred.

The capital market and in particular the stock exchange is referred to as the barometer of the economy. Government's policy is so molded that creation of wealth through products and services is facilitated and surpluses and profits are channelized into productive uses through capital market operations. Reasonable opportunities and protection are afforded by the Government through special measures in the capital market to get new investments from the public and the Institutions and to ensure their liquidity.

A key division within the capital markets is between the primary markets and secondary markets. In primary markets, new stock or bond issues are sold to investors, often via a mechanism known as

underwriting. The main entities seeking to raise long-term funds on the primary capital markets are governments (which may be municipal, local or national) and business enterprises (companies). Governments tend to issue only bonds, whereas companies often issue either equity or bonds. The main entities purchasing the bonds or stock include pension funds, less commonly wealthy individuals and investment banks trading on their own behalf. In the secondary markets, existing securities are sold and bought among investors or traders, usually on an exchange, over-the-counter, or elsewhere. The existence of secondary markets increases the willingness of investors in primary markets, as they know they are likely to be able to swiftly cash out their investments if the need arises.

A second important division falls between the stock markets (for equity securities, also known as shares, where investors acquire ownership of companies) and the bond markets (where investors become creditors).

Need for Capital Market:

Capital market plays an extremely important role in promoting and sustaining the growth of an economy.

- It is an important and efficient conduit to channel and mobilize funds to enterprises, both private and government.
- It provides an effective source of investment in the economy.
- It plays a critical role in mobilizing savings for investment in productive assets, with a view to enhancing a country's long-term growth prospects, and thus acts as a major catalyst in transforming the economy into a more efficient, innovative and competitive marketplace within the global arena.
- In addition to resource allocation, capital markets also provide a medium for risk management by allowing the diversification of risk in the economy.

- A well-functioning capital market tends to improve information quality as it plays a major role in encouraging the adoption of stronger corporate governance principles, thus supporting a trading environment, which is founded on integrity.
- Capital market has played a crucial role in supporting periods of technological progress and economic development throughout history.
- Among other things, liquid markets make it possible to obtain financing for capital-intensive projects with long gestation periods. This certainly held true during the industrial revolution in the 18th century and continues to apply even as we move towards the so-called “New Economy”.
- Capital markets make it possible for companies to give shares to their employees via ESOPs
- Capital markets provide a currency for acquisitions via share swaps.
- Capital markets provide an excellent route for disinvestments to take place.
- Venture Capital and Private Equity funds investing in unlisted companies get an exit option when the company gets listed on the capital markets
- The existence of deep and broad capital market is absolutely crucial in spurring the growth of our country. An essential imperative for India has been to develop its capital market to provide alternative sources of funding for companies and in doing so, achieve more effective mobilisation of investors’ savings. Capital market also provides a valuable source of external finance.

For a long time, the Indian market was considered too small to warrant much attention. However, this view has changed rapidly as vast amounts of both international and domestic investment have poured into our markets over the last decade. The Indian

market is no longer viewed as a static universe but as a constantly evolving one providing attractive opportunities to the investing community.

Functions of the Capital Market:

- To mobilize resources for investments.
- To facilitate buying and selling of securities.
- To facilitate the process of efficient price discovery.
- To facilitate settlement of transactions in accordance with the predetermined time schedules.

Global Depositary Receipts (GDR):

A Depositary Receipt (DR) is a negotiable instrument in the form of securities that is issued by a foreign public listed company and is generally traded on a domestic stock exchange. For this, the issuing company has to fulfil the listing criteria for DRs in the other country. Before creating DRs, the shares of the foreign company—which the DRs represent—are delivered and deposited with the custodian bank of the depository creating the DRs. Once the custodian bank receives the shares, the depository creates and issues the DRs to the investors in the country where the DRs are listed. These DRs are then listed and traded in the local stock exchanges of the other country. DRs have often been used by domestic companies as investment vehicles in the form of American Depositary Receipts (ADRs) and Global Depositary Receipts (GDRs) for accessing foreign markets and investors. American Depositary Receipts are typically traded on US stock exchanges while the DRs that are traded on exchanges in other parts of the world are known as Global Depositary Receipts.

Money market

Money market is a market for short-term financial assets that are close substitutes of money. The most important feature of a money market instrument is that it is liquid and can be turned into money quickly at low cost and provides an avenue for equilibrating the short-term surplus funds of lenders and the requirements of borrowers.

As money became a commodity, the money market became a component of the financial markets for assets involved in short-term borrowing, lending, buying and selling with original maturities of one year or less. Trading in the money markets is done over the counter and is wholesale. Various instruments exist, such as Treasury bills, commercial paper, deposits, certificates of deposit, bills of exchange, and asset-backed securities. It provides liquidity funding for the global financial system. Money markets and capital markets are parts of financial markets. The instruments bear differing maturities, currencies, credit risks, and structure. Therefore they may be used to distribute the exposure.

Functions of Money Market

Money markets provide an equilibrating mechanism for demand and supply of short-term funds and in the process provides an avenue for central bank intervention in influencing both the quantum and cost of liquidity in the financial system. In the process, money market plays a central role in the monetary policy transmission mechanism by providing a key link in the operations of monetary policy to financial markets and ultimately, to the real economy. Money markets are the first and the most important stage in the chain of monetary policy transmission. Following are the major functions played by a developed money market:

(i)Financing Trade:

Money Market plays crucial role in financing both internal as well as international trade. Commercial finance is made available to the traders through bills of exchange, which are discounted by the bill market. The acceptance houses and discount markets help in financing foreign trade.

(ii)Financing Industry:

Money market contributes to the growth of industries in two ways:

(a) Money market helps the industries in securing short-term loans to meet their working capital requirements through the system of finance bills, commercial papers, etc.

(b) Industries generally need long-term loans, which are provided in the capital market. However, capital market depends upon the nature of and the conditions in the money market. The short-term interest rates of the money market influence the long-term interest rates of the capital market. Thus, money market indirectly helps the industries through its link with and influence on long-term capital market.

(iii)Profitable Investment:

Money market enables the commercial banks to use their excess reserves in profitable investment. The main objective of the commercial banks is to earn income from its reserves as well as maintain liquidity to meet the uncertain cash demand of the depositors. In the money market, the excess reserves of the commercial banks are invested in near-money assets (*e.g.* short-term bills of exchange) which are highly liquid and can be easily converted into cash. Thus, the commercial banks earn profits without losing liquidity.

(iv)Self-Sufficiency of Commercial Bank:

Developed money market helps the commercial banks to become self-sufficient. In the situation of emergency, when the commercial banks have scarcity of funds, they need not approach the central bank and borrow at a higher interest rate. On the other hand, they can meet their requirements by recalling their old short-run loans from the money market.

(v)Help to Central Bank:

Though the central bank can function and influence the banking system in the absence of a money market, the existence of a developed money market smoothens the functioning and increases the efficiency of the central bank.

Money market helps the central bank in two ways:

- (a) The short-run interest rates of the money market serves as an indicator of the monetary and banking conditions in the country and, in this way, guide the central bank to adopt an appropriate banking policy,
- (b) The sensitive and integrated money market helps the central bank to secure quick and widespread influence on the sub-markets, and thus achieve effective implementation of its policy.

Commodity Market

Commodity market refers to markets that trade in primary rather than manufactured products. Soft commodities are agricultural products such as wheat, coffee, cocoa and sugar. Hard commodities are mined, such as (gold, rubber and oil). Commodity markets can include physical trading and derivatives trading using

spot prices, forwards, futures, and options on futures. Futures contracts are the oldest way of investing in commodities. Futures are secured by physical asset.

Recent Developments in India:

The advent of economic liberalization helped the cause of laying emphasis on the importance of commodity trading. By the beginning of 2002, there were about 20 commodity exchanges in India, trading in 42 commodities, with a few commodities being traded internationally.

Commodities futures contracts and the exchanges they trade in are governed by the Forward Contracts (Regulation) Act, 1952. The regulator is the Forward Markets Commission (FMC), a division of the Ministry of Consumer Affairs, Food and Public Distribution. In 2002, the Government of India allowed the re-introduction of commodity futures in India. Together with this, three screen based, nation-wide multi-commodity exchanges were also permitted to be set up with the approval of the Forward Markets Commission. These are:

National Commodity & Derivative Exchange

This exchange was originally promoted by ICICI Bank, National Stock Exchange (NSE), National Bank for Agriculture and Rural Development (NABARD) and Life Insurance Corporation of India (LIC). Subsequently other institutional shareholders have been added on. NCDEX is popular for trading in agricultural commodities.

Multi Commodity Exchange

This exchange was originally promoted by Financial Technologies Limited, a software company in the capital markets space. Subsequently other institutional shareholders have been added on. MCX is popular for trading in metals and energy contracts.

National Multi Commodity Exchange of India

This exchange was originally promoted by Kailash Gupta, an Ahmedabad based trader, and Central Warehousing Corporation (CWC). Subsequently other institutional shareholders have been added on. NMCE is popular for trading in spices and plantation crops, especially from Kerala, a southern state of India.

In terms of market share, MCX is today the largest commodity futures exchange in India, with a market share of close to 70%. NCDEX follows with a market share of around 25%, leaving the balance 5% for NMCE.

Government Securities Market

The market for Government Securities comprises the Centre, State and State-sponsored securities. In the recent past, local bodies such as municipal corporations have also begun to tap the debt markets for funds. The market for government securities is the oldest and most dominant in terms of market capitalization, outstanding securities, trading volume and number of participants. It not only provides resources to the government for meeting its short term and long term needs, but also sets benchmark for pricing corporate paper of varying maturities and is used by RBI as an instrument of monetary policy. The instruments in this segment are fixed coupon bonds, commonly referred to as dated securities, treasury bills, floating rate bonds, zero coupon bonds. Both Central and State government securities comprise this segment of the debt market.

Developing a government securities market is a complex undertaking that depends on the financial and market system

development of each country. For many governments, this involves immense challenges, as the problems that inhibit securities market development run deep in the economy. For example, some governments rely on a few domestic banks for funding, which makes competition scarce and transaction costs high. In addition, a proliferation of government agencies issuing securities can fragment national government securities markets. Absence of a sound market infrastructure may make specific actions to develop a government securities market premature. A paucity of institutional investors, low domestic savings rates, and lack of interest from international investors can result in a small, highly homogeneous investor group, contrary to the heterogeneity needed for an efficient market. Furthermore, economic instability, often fed by high fiscal deficits, rapid growth of the money supply, and a deteriorating exchange rate, can weaken investor confidence and increase the risks associated with development of a market for government securities.

While the RBI regulates the issuance of government securities, corporate debt securities fall under the regulatory purview of SEBI. NSE and BSE provides a trading platform for most debt instruments issued in India.

Following table provides us a snapshot of Govt Securities Market capitalization as on 31st Oct 2013:

Market Capitalization; Security Type	No. of Securities	Mkt Capitalization(INR Million)	% of Total
Govt Securities	126	27256031.17	54.11
PSU Bonds	1068	3445355	6.84
State Loans	1510	9703782.55	19.27

Treasury Bills	52	3291412.47	6.53
Local Bodies	19	30193.46	0.06
Fin Inst.	509	1647220.13	3.27
Bank Bonds	466	2092198.57	4.15
Supranational Bonds	1	3912.22	0.01
Corporate Bonds	2015	2898727.03	5.76
Total	5766	50368832.6	100

International Treasury Market

Market participants

The main market participants can be grouped broadly into four main groups. First, there are the domestic and international banks that are acting on their own behalf or for their customers. The major banks are market makers, always quoting a two-way price for a number of currency pairs to their customers. Second, there are the central banks. They generally let the market determine the value of their currencies, but there are exceptions to this policy when they may intervene to buy or sell their domestic currency if they believe it is substantially under or over-valued. Third, there are the customers of the banks. These are varied and include corporates settling receipts or payments arising from overseas trade, fund managers buying or selling foreign currency as a result of shifts in their portfolio allocations, government agencies, hedge funds taking positions in currencies or other assets and, finally, high net-worth individuals either entering the market on their own behalf or through the private banking arm of a bank. Last, there are the brokers. Brokers do not trade on their own account, but act as intermediaries.

Currency Trading

The foreign exchange market or forex market is the market in which currencies are traded. Currency Trading is the world's largest market consisting of almost \$2 trillion in daily volume and as investors learn more and become more interested, the market continues to rapidly grow. Not only is the forex market the largest market in the world, but it is also the most liquid, differentiating it from the other markets.

Foreign exchange market is the term given to the worldwide financial market which is both decentralized and over-the-counter, which specializes in trading back and forth between different types of currencies. This market is also known as the forex market. In recent times, both investors and traders located all around the world have begun to notice and recognize the foreign exchange market as an area of interest, which is speculated to contain opportunity.

In the whole of the market, the following are the currency pairs which are traded most often:

- EUR / USD – Euro
- GBP / USD – Pound
- USD / CAD – Canadian Dollar
- USD / JPY – Yen
- USD / CHF – Swiss Franc and
- AUD / USD – Australian Dollar

In the whole of the foreign exchange market, the previously listed currency pairs generate up to 85% of the volume.

In each currency pair, the former currency is the base currency, where the latter currency is typically in reference to the quote or the counter currency. Each pair is generally expressed in units of the quote or the counter currency that of which are needed in order to receive a single unit of the base currency.

To illustrate, if the quote or the price of a EUR / USD currency pair is 1.2545, this would mean that one would require 1.2545 United States Dollars in order to receive a single Euro.

Bid / Ask Spread

It is common for any currency pair to be quoted with both a bid and an ask price. The former, which is always a lower price than

the ask, is the price at which a broker is ready and willing to buy, which is the price at which the trader should sell. The ask price, on the other hand, is the price at which the broker is ready and willing to sell, meaning the trader should jump at that price and buy.

To illustrate, if the following pair were provided as such:

EUR / USD 1.2545/48 OR 1.2545/8

Then the bidding price is set for 1.2545 with the ask price set to 1.2548

Pip

The minimum incremental move that of which is made possible by a currency pair is otherwise known as a pip, which simply stands for price interest point. For example, a move in the EUR / USD currency pair from 1.2545 to 1.2560 would be equivalent to 15 pips, whereas a move in the USD / JPY currency pair from 112.05 to 113.05 would be equivalent to 105 pips.

Investment in global securities-Portfolio Management

The process of portfolio management basically is closely/directly linked with process of decision making, the correctness of which cannot be ensured in all cases. It has become a specialized field which requires proper planning and continuous review as it is never static in character and goes on fluctuating depending on change in credit policy and investment conditions in the country. Some of the broad objectives of portfolio management are listed as under:

Safety of fund

Safety of fund is the primary objective of portfolio management. While making investment decisions pertaining to securities, it is a must for investors/portfolio managers to ensure that their investment is safe and it will return with appreciation in value.

Liquidity

Investors are very much interested in the liquidity aspect of securities in the portfolio. An investor shall make investment in those securities which can be encashed without any difficulty or involvement of time to meet urgent need for funds.

Reasonable Return

Reasonable return on securities is another important aspect of portfolio management. A sound investor or portfolio manager before making investment would like to judge the interest/dividend paying capacity/rate of the companies in which investment opportunities exist. The investor is very much concerned with the appreciation in value of securities because it will ultimately determine the profitability of his investment. (Capital gains plus dividends/interest together determine the return on investment).

Minimum Risk

The portfolio investments are subject to certain unforeseen risks and it is the judgment and intelligence of the portfolio manager to reduce this element of risk to minimum. Practically, portfolio managers achieve this objective of minimizing risk by effective

investment planning and periodical review of the market situation and economic environment affecting the financial markets.

Global debt market

Like in domestic market, in the international debt market similar instruments are available for investments. These instruments can be classified in to Bonds (Straight Bonds, Floating Rate Notes, Zero Coupon and Deep Discount Bonds, Yankee bonds- are dollar denominated bonds issued by foreign borrowers, Samurai bonds- are publicly issued Yen denominated bonds, Shogun bonds, 'Geisha bonds' etc. Syndicated Credits, Medium Term Notes (MTNs), Committed Underwritten Facilities, Money Market Instruments, Export related credits such as buyers' credit, suppliers' credit, Line of credit, forfeiting etc. also form a part of global debt market.

Bonds with maturities less than 10 years are generally called 'notes'. A 'callable bond', a 'puttable bond', 'sinking fund' bonds are similar to domestic instruments.

'Warrants' are options sold with a bond giving the bondholder right to purchase a financial asset such as further bond, equity, foreign currency warrants at a stated price at a particular period.

Syndicated credits are where one, two or three banks may act as lead managers and distribute the loan among themselves and other participating banks and one of the lead banks acts as the agent bank and administers the loan after execution, disbursing funds to the borrower, collecting and distributing interest payments and principal repayments among lending banks.

Though there are varieties of debt instruments available in the market, the selection of the instrument is based on maturity

period, coupon rate and the terms of the instrument. After globalization, India has been broadly falling in line with global expectations by suitably amending the laws to provide instruments similar to global players to attract funds cheaper and faster to meet the corporate and government needs-both short term and long term.

The size of the global bond market (\$100 trillion as of Jan 2013) is much larger than the global equity market (market capitalization of \$55 trillion as of Jan 2013). Demand for government bonds increased in many countries during the economic slowdown as institutional investors looked for less risky assets in volatile market conditions. Risk aversion and flight to quality fuelled demand for government bonds, mainly in countries traditionally seen as financially more stable. One of the striking features of the bond market is the rise in share of international bonds from 13 percent to 30 percent of the total bonds outstanding between 2000 and 2010.

Floating Rate Notes (FRN)

Floating Rate Notes is a debt instrument with a variable interest rate. Also known as a “floater”- note’s interest rate is tied to a benchmark such as the U.S. Treasury bill rate, LIBOR, the fed funds or the prime rate. Floaters are mainly issued by financial institutions and governments, and they typically have a two- to five-year term to maturity.

Floating rate notes (FRNs) make up a significant component of the U.S. investment-grade bond market, and they tend to become more popular when interest rates are expected to increase. Compared to fixed-rate debt instruments, floaters protect investors against a rise in interest rates. Because interest rates have an inverse relationship with bond prices, a fixed-rate note’s market price will drop if interest rates increase. FRNs, however, carry

lower yields than fixed notes of the same maturity. They also have unpredictable coupon payments, though if the note has a cap and/or a floor, the investor will know the maximum and/or minimum interest rate the note might pay.

An FRN's interest rate can change as often or as frequently as the issuer chooses, from once a day to once a year. The “reset period” tells the investor how often the rate adjusts. The issuer may pay interest monthly, quarterly, semiannually or annually. FRNs may be issued with or without a call option.

One major FRN issuer is Fannie Mae. Its FRNs have different reference rates, including three-month T-bills, the prime rate, the fed funds rate, one-month LIBOR and three-month LIBOR. Commercial banks, state and local governments, corporations and money market funds purchase these notes, which offer a variety of terms to maturity and may be callable or non-callable.

Political/Country Risks, Mergers & Acquisitions

Uncertainty can't be eliminated from the business environment; it can be managed by transforming it into planned uncertainty. There are two types of political risk, macro risk and micro risk. Macro risk refers to adverse actions that will affect all foreign firms, such as expropriation or insurrection, whereas micro risk refers to adverse actions that will only affect a certain industrial sector or business, such as corruption and prejudicial actions against companies from foreign countries. All in all, regardless of the type of political risk that a multinational corporation faces, companies usually will end up losing a lot of money if they are unprepared for these adverse situations. For example, after Fidel Castro's government took control of Cuba in 1959, hundreds of

millions of dollars' worth of American-owned assets and companies were expropriated. Unfortunately, most, if not all, of these American companies had no recourse for getting any of that money back.

Evaluating country risks is a crucial exercise when choosing sites for international business, particularly if investment is to be undertaken. Certain risks can be managed through insurance, hedging and other types of financial planning, but other risks cannot be controlled through such financial mechanisms. Some of these latter risks may be measured in a risk-return analysis, with some countries' risks requiring higher returns to justify the higher risks. The study of country risks is also necessary in order to develop alternative scenarios: Uncertainty may remain, but it can be transformed into planned uncertainty, with no surprises and with contingency plans in place.

Prior to the 1990s, the political risks associated with interventionist governments were considerable. They included government expropriation, regulations that imposed inefficiencies, and foreign-investment restrictions. Many countries pursued the goal of economic self-sufficiency through extensive tariff and non-tariff barriers to both trade and investment. Bribery often influenced government decisions. In many countries today, such political risk has been reduced and replaced by a new acceptance of free markets and a belief that international trade and investment are the bases for economic growth. Nevertheless, political risks still remain. The Index of Economic Freedom ranks countries according to the impact that political intervention has on business decisions, while the Corruption Perception Index indicates the extent of corruption in each of 91 countries. To the degree that a government has the power to regulate and intervene in matters that affect businesses, bureaucrats may be tempted to

provide the desired approvals in return for bribes. As a result, these indexes can be closely related.

The Index of Economic Freedom, which must be considered in a risk-return analysis, points to the various ways in which a government may take away potential profits. New control and audit practices may have to be implemented to operate in a culture where corruption is common, and where employees may therefore not automatically adhere to the standards of honesty expected by the corporation.

For natural resource sectors, in particular, political risk may still be a showstopper, since the risk of nationalization, special taxes or new regulations is particularly severe. Managers in these sectors must consider whether the risks may be too high to justify investment. It remains helpful to seek the views of local political experts.

Economic risks

Economic risks may be particularly important in regard to exchange rates, economic volatility, industry structure and international competitiveness.

Exchange rate risks

In recent years, the risk of foreign exchange rate movements has become a paramount consideration, as has the risk that a government may simply lack the economic capacity to repay its loans. Many countries have been experiencing ongoing fiscal deficits and rapid money-supply growth. Consequently, inflation rates remain high and devaluation crises appear from time to time. A devaluation of one country's exchange rate automatically creates pressure for devaluation in other countries' exchange rates. Competitive domino devaluation pressures are intensified because

of the reliance of many countries on primary product exports and their price volatility.

Recent crises—especially the Asian crisis of 1997, the Mexican devaluation of 1994, and the Russian crisis of 1998—have created a new risk of heightened foreign exchange volatility for some countries. Today exchange rates may be maintained at unrealistically high levels as a result of considerable inflows of foreign capital. Yet, these capital inflows may slow or even reverse abruptly. Foreign investors now recognize these risks of foreign exchange volatility. In the future, capital flows will be more sensitive to changes in each country's financial system and general economic conditions than they have been in the past. Future surges in capital flows may translate into increased volatility of foreign exchange rates for some countries.

But how can foreign investors protect themselves from these exchange rate risks? Hedging mechanisms offer some hope for reducing foreign exchange risks, though generally not without some cost. Here are some other ways managers can cope with these country risks:

1. Considering the timing of investments- restricting the capital transfers to a country to those times when the foreign exchange rate is in equilibrium. The theory of "Purchasing Power Parity" provides a guide to likely exchange rate changes. Compare a country's cumulative inflation over a number of years with the cumulative inflation rate of its major trade partners. If the difference in cumulative inflation rates exceeds the percentage change in the foreign exchange rate, then devaluation is a real possibility.

2. Borrowing domestically to do business domestically and avoiding foreign exchange rate exposure. Keep in mind that this approach does expose the business to the possibility of interest

rate increases as a result of a central bank's response to foreign exchange rate devaluation. For a foreign-owned financial institution, this approach also involves the possibility of a "run" on deposits, as the depositors seek to withdraw funds in order to transfer them abroad.

3. Focusing on the devaluation risk when choosing among countries as investment avenues. From this perspective, Chile is currently a less risky region for investment than Argentina or Mexico.

4. Consider the amount of capital required by those activities that are being developed in a country subject to devaluation risk. The significance of a foreign exchange risk may be relatively low for a business that requires little capital investment, like one in the service sector or fast-food industry; it may be high for a firm in the manufacturing and natural resource sectors, where considerable capital is required.

5. Spread the purchase price over as long a time period as possible. This allows domestic currency to be purchased at a lower cost if devaluation occurs. Alternatively, gear the purchase price to a weighted average of the exchange rate over future years, with projected future payments adjusted in accordance with the exchange rate.

Risks of economic volatility

Economic stability depends upon a strong banking sector; without it, a foreign exchange crisis may have a particularly severe impact. An ongoing challenge for financial institutions everywhere is that the time profile for liabilities is not the same as the one for assets. Banks borrow short-term from depositors and lend long-term. This exposes the banks to the risks that fixed assets may fall quickly in price and that depositors may make sudden withdrawals. With

dramatic reductions in real estate property prices (provided to secure loans), bank loans suddenly may be at a major risk of default, further exacerbating the effects of a foreign exchange crisis, and transforming it into a general crisis in the economy.

For multinational companies, political risk refers to the risk that a host country will make political decisions that will prove to have adverse effects on the multinational's profits and/or goals. Adverse political actions can range from very detrimental, such as widespread destruction due to revolution, to those of a more financial nature, such as the creation of laws that prevent the movement of capital.

Country Risk Management

Country Risk refers to the possibility that economic and political conditions, or an event in a foreign country, could adversely impact an institution's exposure in that country. The institutions engaged in international lending or having other cross border exposure are exposed to country risk, in addition to the customary credit risk.

Country risk is not limited solely to an institution's international lending operations, rather their other on balance sheet activities such as overseas investments, placements etc as well as off balance sheet exposures such as letters of credit, guarantees/bonds, foreign exchange contracts etc., contain country risk. Besides, an institution's outsourcing arrangements such as electronic data processing, electronic banking or any consultancy/management services, with overseas counter parties, also carry inherent country risk.

While institutions are indirectly exposed to country risk as a result of their exposure to domestic entities that have significant cross border exposures, these institutions are not required to take into

account such exposures in their formal country risk management process. However, such indirect country risk assessment pertains to credit risk management and banks are expected to give due consideration to this aspect while taking an exposure on such domestic entities.

Institutions can exercise little direct influence on the country risk they are exposed to. This distinctive nature of country risk necessitates that banks having significant cross border risk exposure should have adequate country risk management framework.

Types of Country Risk

Country risk can be broadly classified into sovereign, transfer/convertibility and contagion risk.

Sovereign risk denotes a foreign government's capacity and willingness to repay its direct and indirect (i.e. guaranteed) foreign currency obligations.

Transfer/Convertibility risk arises if changes in government policies, or any event, result in a barrier to free conversion or movement of foreign exchange across countries. Under such conditions, a borrower may not be able to secure foreign exchange to service its external obligations. Where a country suffers economic or political problems, leading to depletion of its foreign currency reserves, the borrowers in that country may not be able to convert their funds from local currency into foreign currency to repay their external obligations.

Contagion risk refers to the possibility that any adverse economic or political factor in one country has an impact on other countries in that region.

Elements of Country Risk Management

Board and Senior Management oversight

It is the responsibility of the board to define the level of country risk the institution can undertake and to ensure that the institution has country risk management framework consistent with the level of institution's cross border exposure. Towards this end, the board should ensure that there are well-defined policies and procedures for country risk management. Similarly, the senior management should ensure that the staff entrusted with the responsibility is capable of dealing with it and the managerial structure and resources devoted for country risk management are commensurate with the level of the institution's overseas exposure.

Policies and procedures

Institutions (having significant cross border exposure) should have written policies and procedures for their country risk management. Generally, such policies/ procedures encompass following aspects.

- Delineate clear lines of responsibility and accountability for country risk management decisions.
- Set up an internal rating system or use external ratings (if the bank has little cross border exposure and it is not feasible to institute an internal country risk rating mechanism).
- Establish risk tolerance limits.
- Specify authorized activities and instruments.
- Set up a mechanism to monitor and report the institutions' country exposure for senior management and BOD's review.

To be effective, these policies should be communicated down the line to the concerned offices and staff. The policies should be

approved by the board and subject to review semi-annually or more frequently, if the need arises.

PART-IV

Money Market Operations

Changing Facets of global monetary system – Regional blocks and unified currencies

A *trade bloc* can be defined as a 'preferential trade agreement' (PTA) between a subset of countries, designed to significantly reduce or remove trade barriers within member countries. When a trade bloc comprises neighboring or geographically close countries, it is referred to as a 'regional trade (or integration) agreement'. It is sometimes also referred to as a 'natural' trade bloc to underline that the preferential trade is between countries that have presumably low transport costs or trade intensively with one another. The two principal characteristics of a trade bloc are that: (1) it implies a reduction or elimination of barriers to trade, and (2) this trade liberalization is discriminatory, in the sense that it applies only to the member countries of the trade bloc, outside countries being discriminated against in their trade relations with trade bloc members. Though few, there exist as well regional integration agreements in which co-operation rather than preferential market access is emphasized. Trade blocs can also entail deeper forms of integration, for instance of international competition, investment, labour and capital markets (including movements of factors of production), monetary policy, etc.

The integration of countries into trade blocs is commonly referred to as 'regionalism', irrespective of whether the trade bloc has a geographical basis or not. The first waves of PTAs appeared in the 1930s leading to a fragmentation of the world into trade blocs. This 'old (first) regionalism' is also associated with regional initiatives involving developing countries in the 1950s and 1960s. Based on the objective of import-substitution industrialisation, the rationale was that developing countries could reap the benefit from economies of scale by opening up their trade preferentially

among themselves, hence reducing the cost of their individual import-substitution strategy while the trade bloc became more self-sufficient. More successful experiences followed with the recent proliferation of trade blocs, the so-called 'new (second) regionalism', which involve mostly countries from the North with the South (the North-South trade blocs).

The main trade blocs in the world are: (1) in Europe, the European Union (EU), the European Free Trade Agreement (EFTA), the European Agreements, and the European Economic Area (EEA); (2) with the United States, the North American Free Trade Agreement (NAFTA), the Canada-US Free Trade Agreement (CUSTA), and the US-Israel Free Trade Agreement; (3) in Latin America, the Common Market of the South (MERCOSUR), the Central American Common Market (CACM), the Andean Pact, the Latin American Integration Association (LAIA), and the Caribbean Community and Common Market (CARICOM); in Sub-Saharan Africa, Communauté Economique de l'Afrique Occidentale (CEAO)/Union Economique et Monétaire de l'Afrique Occidentale (UEMOA), Union Douanière et Economique d'Afrique Centrale (UDEAC), the Common Market of Eastern and Southern Africa (COMESA)/Preferential Trade Area for Eastern and Southern African States (PTA), the Southern African Customs Union (SACU); and (4) in Asia, the Association of Southeast Nations (ASEAN) and the ASEAN Free Trade Area (AFTA), and the Australia-New Zealand Closer Economic Relations Trade Agreement (ANZCERTA). While there is a proliferation of PTAs in the world, and almost every country in Europe, in Latin America and in Sub-Saharan Africa belongs to at least one PTA, not all PTAs are effective at liberalising intra-bloc trade. For instance, focusing on the trend in intrabloc trade intensities and shares, it appears that NAFTA, the US-Israel FTA, CACM, the Andean Group, MERCOSUR, CEAO/UEMOA and SACU can be considered as effective trade blocs (which does not mean that they are efficient), whereas ASEAN seems to be so far a rather ineffective grouping.

The causes of trade bloc formation:

Several reasons explain the recent emergence of trade blocs. The so-called 'old regionalism' was motivated by the desire to pursue in developing countries import substitution development at a regional level, to insulate a region from the world economy and to stabilise and foster the economy at a regional level. Political and economic considerations also played a major role, as in the case of the European Coal and Steel Community (ECSC, 1951) and the European Economic Community (EEC, 1957).

The recent emergence of trade blocs (the so-called 'new regionalism') has been explained by various factors. Recognising the gains from liberalisation, it is often argued that concluding a PTA is politically easier than pursuing multilateral trade liberalization agreements. It is easier to negotiate with few partners than with a large number of participants in the multilateral process as envisaged under the General Agreement of Tariffs and Trade (GATT)/World Trade Organization (WTO). Not only concessions can be more easily exchanged among a small number of countries, but effective enforcement mechanisms can also be agreed upon at a lower cost. The length and difficulties encountered during the Uruguay Round of GATT negotiations (1986-1994) is usually considered to have contributed to increase the attractiveness of the regional (i.e. preferential) path to trade liberalisation.

PTAs also allow trading partners to go deeper and faster in their liberalisation process, addressing modern trade barriers which are more varied, more complex and less transparent than standard tariffs and quotas traditionally considered under GATT Rounds.

Preferential integration agreements can also entail elements beyond standard trade policy concerns, such as competition, investments, labour and capital market considerations. In other words, the fewer the number of participants to trade negotiations,

the larger the number of issues on which it is possible to reach an agreement.

Another claimed advantage of PTAs is that they may help ensuring the credibility of the reform process undertaken by one or several members of the trade bloc. Indeed, trade blocs often involve (small) reform-minded countries willing to bind their commitments to (often unilateral) liberalisation process by entering a PTA with larger entities. More generally, PTAs can serve as commitment, signalling and insurance mechanisms in the policy determination of its members, hence contributing to reducing uncertainty and increasing credibility about political and economic developments.

Trade blocs may exert other types of 'pressures for inclusion'. The gravity model suggests that countries geographically close trade more than distant countries. Namely, the gravity equation predicts, among other things, that the volume of trade between two countries is negatively related to the economic distance (i.e. geographic distance, taking into account transport costs and trade barriers) between them. As neighbouring countries tend to be 'natural trading partners', they are more likely to form a trade bloc. Moreover, as trade bloc formation diverts trade at the expense of non-member countries, the deepening of an existing bloc or the creation of a new one may cause excluded trading partners to join the PTA in order to reduce the costs of being "left out": the so-called 'domino effect' of regionalism.

Finally, trade blocs may serve to pursue non-economic objectives, or objectives beyond the immediate economic concerns of a PTA, such as political stability, democratic development or security issues (either domestic security, or as a response to third-country security threats, or security threats between partner countries).

The effects of trade blocs:

Discriminatory trade policy is the defining characteristic of a trade bloc. The different types of trade blocs (or PTAs) can be broadly distinguished in three categories: (1) a free trade agreement (FTA) where trade barriers among member countries are removed, but where each member remains responsible for the determination of its trade policy vis-à-vis non-member countries; (2) a customs union (CU), with liberalised intra-bloc trade, as well as the adoption of a external tariff structure and trade barriers towards outsiders common to all members of the CU; and (3) a common market, which entails a CU with deeper integration between its members (such as free movements of goods, services and factors of production, common economic policies, etc.). Most of the analyses on the effects of trade blocs focus on FTAs and/or CUs. The effects of a PTA are of two types: the trade effects and the welfare effects. The trade effects comprise the impact of a PTA on the volume and quantity of trade, on the terms of trade (i.e. prices) and on the level of protection (generally tariffs) for PTA members and excluded countries. In analysing the welfare effects of a PTA, it is important to distinguish between the impact of trade bloc (formation and expansion) on the welfare of (1) each of its member, (2) the trade bloc as a whole and (3) the countries excluded from the trade bloc. A standard result of international trade theory is that, in a competitive environment and in the absence of market distortions and externalities, free trade will maximise global welfare. Removing trade barriers between a subset of countries could therefore appear to be, *a priori*, a move in the right direction. Yet, the 'theory of second best' points out that removing a distortion while others remain in place may not increase welfare. Trade blocs are examples of second best since a distortion is removed, i.e. trade barriers between member countries, while another distortion is created in the form of a discrimination between members and non-members (the latter facing trade barriers from the PTA), as

well as other market imperfections. Hence, the welfare implications of a trade bloc are ambiguous as they depend on many factors. Another important element in assessing the trade impact of a PTA are the price, or 'terms of trade', effects of a trade bloc. Again, as intra-bloc trade is liberalised while extra-bloc trade is not, PTA members buy more from each other (trade creation) and less from third countries. If the PTA is not economically small, world prices will be affected as the demand for (and thus the price of) non-member exports decreases, creating a positive terms of trade effect for PTA members and a likely deterioration of the terms of trade for third countries. Hence, trade blocs allow member countries to exploit their joint market power over their terms of trade.

This capacity to influence its terms of trade is an important element in the analysis of the trade policy determination and welfare effects of a PTA. Due to their increased market power, the members of a trade bloc can extract rents from the excluded trading partners by setting 'optimal tariffs' and behaving in a co-ordinated strategic way.

Such considerations also led to some predictions with regards the dynamics of trade blocs. In particular, it is expected that, if countries are symmetric, trade diversion and optimal tariffs increase as the world integrates in a smaller number of expanding trading blocs. Although the level of optimal tariffs with expanding trade blocs depends on the factor endowments (i.e. comparative advantages) of the member countries, the welfare losses associated to trade bloc formation and expansions seem to be due more to trade diversion than to potential increases in optimal tariffs. Ultimately, the optimal number of trade blocs in the world depends on the one hand on the potential positive welfare effects resulting from trade creation, and on the other hand on the potential negative welfare impacts resulting from trade diversion and adverse changes in the terms of trade.

Besides, a larger market resulting from the creation and extension of trade blocs does not only increase the market power of its members, but it also provides opportunities for greater productivity efficiency for industries facing economies of scale and increased competition within the PTA market. This in turn may contribute to reduce distortions within the trade bloc. In this respect, it is worth noting that small countries could benefit more from joining a PTA than larger countries, in particular if the trade bloc is initially formed by large members, as small countries will derive relatively larger economic advantages from gaining access to the potentially large market of the bloc.

Since trade blocs are more likely to have a positive impact on welfare if they are more trade-creating and less trade-diverting, it is sometimes argued that welfare improving PTAs are likely to be those which (1) are large (stimulating intra-bloc trade), (2) involve countries at similar stages of development (generating intra-industry trade), and (3) have a regional basis (since geographic proximity favours trade). Yet, the main lesson from the new theory of regionalism is that there are no strict rules and generalisations are dangerous, as the impacts on trade and welfare of PTAs crucially depends on the model adopted. For instance, although the notion of 'natural trade blocs' (based on lower transport costs associated to regional trade) is common, it is doubtful that transport costs considerations provide a justification (over other types of costs) for the desirability or superiority of *regional* trade blocs over *non-regional* blocs. The fact that countries geographically close trade more together, as suggested by the gravity model, does not imply that their welfare will improve by forming a trade bloc, nor that trade barriers with distant trading partners is desirable.

Finally, while most analyses on trade blocs either consider PTAs in general, or associate trade blocs with CUs, the distinction between the forms taken by the PTA, namely a FTA or a CU, is crucial to determine the trade and welfare impacts of a grouping of

countries. Focusing on the rules of origin requirements in a FTA, it is tempting to conclude that CUs are superior to FTAs as the former generate less trade diversion. However, when considering the strategic interaction between members and non-members and their potential market power, FTAs could be considered as more desirable on welfare grounds than CUs.

Regional trading blocs' effect on globalization

Regionalization is changing the pattern of world economy

In recent years, regionalization has been more and more popular and common in the world. For America, the NAFTA has achieved a positive result. For Europe, "one in eight numbers of the United Nations (UN) is the member of the EU. Europe is an equal partner to the United States in trade negotiations." And the launching of euro has an epoch-making significance to the world economy. For Asia-Pacific region, the Asia-Pacific Economic cooperation has become one of the most influential forums. In Southeast Asia, the ASEAN member countries have obviously strengthened their cooperation in economic fields.

The formation of the NAFTA, the EU, the Asia-Pacific Economic Cooperation (the APEC), the ASEAN and other regional trading blocs have to some extent changed the pattern of world economy and trade. There is no doubt that the increase of the dependence of the member countries on the regional trade blocs and their negotiating abilities towards the outside world will bring keener competition to the world, which proves to be harmful to globalization.

Regionalization has created new trade barriers

One of the purposes of the establishment of trading blocs is to arrange easier trade within the regions, and to increase the

economic efficiency and the competitiveness of their productions. The free trade or relative free trade among the member states will surely increase their dependence on each other, which will promote regionalization. For example, since the establishment of the NAFTA, the trade among the U.S., Canada and Mexico has been more than doubled, and the economic cooperation in this region will be increased in the future. While the World Trade Organization (the WTO) is trying to eliminate trade barriers throughout the world, trading blocs are maintaining and even increasing them under the name of regional cooperation. While trading blocs are giving their member states more interest, they are building trade barriers to the outside world and preventing other countries' and regions' productions from importing. When they have satisfied their member states, they have also damaged the foundation of global cooperation and increased the difficulties of negotiations between countries, thus blocking the real "globalization". Certainly, there are other effects of trading blocs on globalization except the above two, such as causing international political confrontation, speeding the readjustment of each country's industrial setup, promoting direct investment and arranging keener competitiveness in international trade. Regional trading blocs do have a wide and far-reaching influence.

By looking at the direct motivation to form a regional trading bloc, namely, competing with other regions and countries, one conclusion that can be framed is that trading blocs do hamper globalization to some extent. Also the fact that they have divided the world into trading areas and changed the pattern of the world economy proves this conclusion.

However, we cannot say that trading blocs and globalization are completely contradictory as there is no contradiction or difference in their natures. Both of them pursue "free trade". For a single nation, its purpose to join a regional trading bloc and the WTO is to get more interest from them. Both trading blocs and

globalization require their member countries to overstep their boundaries and transfer some of their economic sovereignties. The difference is that the former one is within a region while the latter one is on global level. Therefore, their contradiction lies in their scopes but not their natures. It is natural and reasonable that trading blocs and globalization coexist in the same period. In the future, regional trade will expand the global level, which means, trading blocs are a necessary stage of globalization.

Recent global crises – Role of IMF

The current global financial crisis, which began with the downturn of the U.S. subprime housing market in 2007, tested the ability of the International Monetary Fund (IMF), in its role as the central international institution for oversight of the global monetary system. Though the IMF is unlikely to lend to the developed countries most affected by the crisis and must compete with other international financial institutions as a source of ideas and global macroeconomic policy coordination, the spillover effects of the crisis on emerging and less-developed economies gives the IMF an opportunity to reassert its role in the international economy on two key dimensions of the global financial crisis: (1) immediate crisis management and (2) long-term systemic reform of the international financial system.

The role of the IMF has changed significantly since its founding in July 1944. Late in World War II, delegates from 44 nations gathered in Bretton Woods, New Hampshire to discuss the postwar recovery of Europe and create a set of international institutions to resolve many of the economic issues — such as protectionist trade policies and unstable exchange rates — that had ravaged the international economy between the two world wars. As the global financial system has evolved over the decades, so has the IMF. From 1946 to 1973, the main purpose of the IMF was to manage the fixed system of international exchange rates

agreed on at Bretton Woods. The U.S. dollar was fixed to gold at \$35 per ounce and all other member countries' currencies were fixed to the dollar at different rates. The IMF monitored the macroeconomic and exchange rate policies of member countries and helped countries overcome balance of payments crises with short term loans that helped bring currencies back in line with their determined value. This system came to an abrupt end in 1973 when the United States floated its currency and subsequently introduced the modern system of floating exchange rates. Over the past three decades, floating exchange rates and financial globalization have contributed to, in addition to substantial wealth and high levels of growth for many countries, an international economy marred by exchange rate volatility and semi-frequent financial crises. The IMF adapted to the end of the fixed-exchange rate system by becoming the lender of last resort for countries afflicted by such crises.

Since the onset of the global economic crisis in 2007 the IMF has mobilized on many fronts to support its 188 member countries. It increased and deployed its lending firepower, used its cross-country experience to offer policy solutions, and introduced reforms that made it better equipped to respond to countries' needs. To better support countries during the global economic crisis, the IMF beefed up its lending capacity and approved a major overhaul of how it lends money by offering higher amounts and tailoring loan terms to countries' varying strengths and circumstances.

Measures taken by IMF to counter global economic crisis can be summarized as follows:

- Introduction of Flexible Credit Line (FCL): FCLs were introduced in April 2009 and further enhanced in August 2010, is a lending tool for countries with very strong

fundamentals that provides large and upfront access to IMF resources, as a form of insurance for crisis prevention. There are no policy conditions to be met once a country has been approved for the credit line. Colombia, Mexico, and Poland have been provided combined access of over \$100 billion under the FCL (no drawings have been made under these arrangements). FCL use has been found to lead to lower borrowing costs and increased room for policy maneuver.

- Flexibility in liquidity: Heightened regional or global stress can affect countries that would not likely be at risk of crisis. Providing rapid and adequate short-term liquidity to such crisis bystanders during periods of stress could bolster market confidence, limit contagion, and reduce the overall cost of crises. The Precautionary and Liquidity Line (PLL) is designed to meet the liquidity needs of member countries with sound economic fundamentals but with some remaining vulnerabilities—Macedonia and Morocco have used the PLL.
- Reformed terms of lending: Structural performance criteria have been discontinued for all IMF loans, including for programs with low-income countries. Structural reforms will continue to be part of IMF-supported programs, but have become more focused on areas critical to a country's recovery.
- Emphasis on social protection: The IMF is helping governments to protect and even increase social spending, including social assistance. In particular, the IMF is promoting measures to increase spending on, and improve the targeting of, social safety net programs that can mitigate the impact of the crisis on the most vulnerable in society.

- Creating a crisis firewall: As a key part of efforts to overcome the global financial crisis, the Group of Twenty industrialized and emerging market economies (G-20) agreed in April 2009 to increase borrowed resources available to the IMF (complementing its quota resources) by up to \$500 billion (which tripled the total pre-crisis lending resources of about \$250 billion) to support growth in emerging market and developing countries.
- Sharpening IMF analysis and policy advice: In the wake of the 2011 Triennial Surveillance Review (TSR), the IMF has undertaken major initiatives to strengthen surveillance to respond to a more globalized and interconnected world. These initiatives include revamping the legal framework for surveillance to cover spillovers (how economic policies in one country can affect others), deepening analysis of risks and financial systems, stepping up assessments of members' external positions, and responding more promptly to concerns of the membership.

Debt Capital Markets – Types of Bonds

Debt market (also referred to as Bond Market or Credit Market) is a financial market where participants can issue new debt, known as the Primary Market or buy and sell debt securities, known as the secondary market. Debt Markets are therefore markets for fixed income securities issued by Central and State Governments, Govt. bodies and commercial entities, Public Sector Units.

Before we proceed further it will be helpful to understand fundamental features of debt instruments which are traded in the debt markets.

Debt instruments are contracts in which one party lends money to another on pre-determined terms with regard to rate of interest to be paid by the borrower to the lender, the periodicity of such interest payment, and the repayment of the principal amount borrowed. In the Indian securities markets, we generally use the term 'bond' for debt instruments issued by the Central and State governments and public sector organizations, and the term 'debentures' for instruments issued by private corporate sector. In this manual we will use bonds, debentures and debt instruments inter-changeably going forward.

Main Features of Debt Instruments

1. Maturity
2. Coupon Rate
3. Principal

In the bond markets, the terms **maturity** and **term-to-maturity**, are used quite frequently. Maturity of a bond refers to the date on which the bond Matures, or the date on which the borrower has agreed to repay the principal amount to the lender. The borrowing is extinguished with redemption, and the bond ceases to exist after that date. Term to maturity, on the other hand, refers to the number of years remaining for the bond to mature. Term to maturity of a bond changes everyday, from the date of issue of the bond until its maturity.

Coupon Rate refers to the periodic interest payments that are made by the borrower to the lender and the coupons are stated upfront either directly specifying the rate (e.g.8.50%) or indirectly tying with a benchmark rate (e.g. MIBOR+0.5%). Coupon rate is the rate at which interest is paid, and is usually represented as a percentage of the par value of a bond.

Principal is the amount that has been borrowed, and is also called the **par value** or **face value** of the bond. Typical face values in the bond market are Rs. 100 though there are bonds with face values of Rs. 1000 and above. In many cases, the name of the bond itself conveys the key features of a bond. For example a GS CG2018 11% bond refers to a Central Government bond maturing in the year 2018, and paying a coupon of 11%. Since Central Government bonds have a face value of Rs.100, and normally pay coupon semi-annually, this bond will pay Rs. 5.50 as six- monthly coupon, until maturity, when the bond will be redeemed. The term to maturity of a bond can be calculated on any date, as the distance between such a date and the date of maturity. It is also called the term or the tenor of the bond. There is no rigid classification of bonds on the basis of their term to maturity. Generally bonds with tenors of 1-5 years are called short-term bonds; bonds with tenors ranging from 4 to 10 years are medium term bonds and above 10 years are long term bonds. In India, the Central Government has issued up to 30 year bonds.

Types of commonly issued Bonds

Zero Coupon Bond

In such a bond, no coupons are paid. The bond is instead issued at a discount to its face value, at which it will be redeemed. There are no intermittent payments of interest. When such a bond is issued for a very long tenor, the issue price is at a steep discount to the redemption value. Such a zero coupon bond is also called a *deep discount bond*. The effective interest earned by the buyer is the difference between the face value and the discounted price at which the bond is bought.

Floating Rate Bonds

Instead of a pre-determined rate at which coupons are paid, it is possible to structure bonds, where the rate of interest is re-set periodically, based on a benchmark rate. Such bonds whose coupon rate is not fixed, but reset with reference to a benchmark rate, are called floating rate bonds. Some floating rate bonds also have caps and floors, which represent the upper and lower limits within which the floating rates can vary. A ceiling or a cap represents the maximum interest that the borrower will pay, should the benchmark rate move above such a level. Most corporate bonds linked to the call rates, have such a ceiling to cap the interest obligation of the borrower, in the event of the benchmark call rates rising very steeply. Floating rate bonds, whose coupon rates are bound by both a cap and floor, are called as *range notes*, because the coupon rates vary within a certain range. The other names, by which floating rate bonds are known, are variable rate bonds and adjustable rate bonds. These terms are generally used in the case of bonds whose coupon rates are reset at longer time intervals of a year and above. These bonds are common in the housing loan markets. In the developed markets, there are floating rate bonds, whose coupon rates move in the direction opposite to the direction of the benchmark rates. Such bonds are called inverse floaters.

Callable Bonds

Bonds that allow the issuer to alter the tenor of a bond, by redeeming it prior to the original maturity date, are called callable bonds. The inclusion of this feature in the bond's structure provides the issuer the right to fully or partially retire the bond, and is therefore in the nature of call option on the bond. Since these options are not separated from the original bond issue, they are also called embedded options. A call option can be an

European option, where the issuer specifies the date on which the option could be exercised. Alternatively, the issuer can embed an American option in the bond, providing him the right to call the bond on or anytime before a pre-specified date. The call option provides the issuer the option to redeem a bond, if interest rates decline, and re-issue the bonds at a lower rate. The investor, however, loses the opportunity to stay invested in a high coupon bond, when interest rates have dropped. The call option, therefore, can effectively alter the term of a bond, and carries an added set of risks to the investor, in the form of call risk, and re-investment risk. As we shall see later, the prices at which these bonds would trade in the market are also different, and depend on the probability of the call option being exercised by the issuer. In the home loan markets, pre-payment of housing loans represent a special case of call options exercised by borrowers. Housing finance companies are exposed to the risk of borrowers exercising the option to pre-pay, thus retiring a housing loan, when interest rates fall.

Puttable Bonds

Bonds that provide the investor with the right to seek redemption from the issuer, prior to the maturity date, are called puttable bonds. The put options embedded in the bond provides the investor the rights to partially or fully sell the bonds back to the issuer, either on or before pre-specified dates. The actual terms of the put option are stipulated in the original bond indenture. A put option provides the investor the right to sell a low coupon-paying bond to the issuer, and invest in higher coupon paying bonds, if interest rates move upwards. The issuer will have to re-issue the put bonds at higher coupons. Puttable bonds represent a re-pricing risk to the issuer. When interest rates increase, the value of bonds would decline. Therefore put options, which seek redemptions at par, represent an additional loss to the issuer.

Convertible Bonds

A convertible bond provides the investor the option to convert the value of the outstanding bond into equity of the borrowing firm, on pre-specified terms. Exercising this option leads to redemption of the bond prior to maturity, and its replacement with equity. At the time of the bond's issue, the indenture clearly specifies the conversion ratio and the conversion price. The conversion ratio refers to the number of equity shares, which will be issued in exchange for the bond that is being converted. Bonds can be fully converted, such that they are fully redeemed on the date of conversion. Bonds can also be issued as partially convertible, when a part of the bond is redeemed and equity shares are issued in the pre-specified conversion ratio, and the nonconvertible portion continues to remain as a bond.

Perpetual bonds: A perpetual bond is a bond with no maturity date. Perpetual bonds are not redeemable but pay a steady stream of interest forever. These types of bonds may help the issuer of bonds to avoid the refinancing costs associated with bond issues that have maturity dates.

A Brief Introduction to Indian Debt Markets

Indian debt markets, in the early nineties, were characterized by controls on pricing of assets, segmentation of markets and barriers to entry, low levels of liquidity, limited number of players, near lack of transparency, and high transaction costs. Financial reforms have significantly changed the Indian debt markets for the better. Most debt instruments are now priced freely on the markets; trading mechanisms have been altered to provide for higher levels of transparency, higher liquidity, and lower transactions costs; new participants have entered the markets,

broad basing the types of players in the markets; methods of security issuance, and innovation in the structure of instruments have taken place; and there has been a significant improvement in the dissemination of market information.

Indian debt market has been segmented into three segments viz., Government Securities, Public Sector Units (PSU) bonds, and corporate securities. The market for Government Securities comprises the Centre, State and State-sponsored securities. In the recent past, local bodies such as municipal corporations have also begun to tap the debt markets for funds. The PSU bonds are generally treated as surrogates of sovereign paper, sometimes due to explicit guarantee and often due to the comfort of public ownership. Some of the PSU bonds are tax free, while most bonds including government securities are not tax-free. The RBI also issues tax-free bonds, called the 6.5% RBI relief bonds, which is a popular category of tax-free bonds in the market. Corporate bond markets comprise of commercial paper and bonds. These bonds typically are structured to suit the requirements of investors and the issuing corporate, and include a variety of tailor-made features with respect to interest payments and redemption. The less dominant fourth segment comprises of short term paper issued by banks, mostly in the form of certificates of deposit.

The market for government securities is the oldest and most dominant in terms of market capitalization, outstanding securities, trading volume and number of participants. It not only provides resources to the government for meeting its short term and long term needs, but also sets benchmark for pricing corporate paper of varying maturities and is used by RBI as an instrument of monetary policy. The instruments in this segment are fixed coupon bonds, commonly referred to as dated securities, treasury bills, floating rate bonds, zero coupon bonds. Both Central and State government securities comprise this segment of the debt market.

The issues by government sponsored institutions like, Development Financial Institutions, as well as the infrastructure-related bodies and the PSUs, who make regular forays into the market to raise medium-term funds, constitute the second segment of debt markets. The gradual withdrawal of budgetary support to PSUs by the government since 1991 has compelled them to look at the bond market for mobilizing resources. The preferred mode of issue has been **private placement** (The sale of securities to a relatively small number of select investors as a way of raising capital) , barring an occasional public issue. Banks, financial institutions and other corporates have been the major subscribers to these issues. The tax-free bonds, which constitute over 50% of the outstanding PSU bonds, are quite popular with institutional players.

The market for corporate debt securities has been in vogue since early 1980s. Until 1992, interest rate on corporate bond issuance was regulated and was uniform across credit categories. In the initial years, corporate bonds were issued with “sweeteners” in the form of convertibility clause or equity warrants. Most corporate bonds were plain coupon paying bonds, though a few variations in the form of zero coupon securities, deep discount bonds and secured promissory notes were issued.

After the de-regulation of interest rates on corporate bonds in 1992, we have seen a variety of structures and instruments in the corporate bond markets, including securitized products, corporate bond strips, and a variety of floating rate instruments with floors and caps. In the recent years, there has been an increase in issuance of corporate bonds with embedded put and call options. The major part of the corporate debt is privately placed with tenors of 1-12 years.

Information on the size of the various segments of the debt market in India is not readily available. This is due to the fact that many debt instruments are privately placed and therefore not listed on markets. While the RBI regulates the issuance of government securities, corporate debt securities fall under the regulatory purview of SEBI. The periodic reports of issuers and investors are therefore sent to two different regulators. Therefore, aggregated data for the market as a whole is difficult to obtain. NSE and BSE provides a trading platform for most debt instruments issued in India.

Following table provides us a snapshot of Indian bond market capitalization as on 31st Oct 2013:

Market Capitalization; Security Type	No. of Securities	Mkt Capitalization(INR Million)	% of Total
Govt Securities	126	27256031.17	54.11
PSU Bonds	1068	3445355	6.84
State Loans	1510	9703782.55	19.27
Treasury Bills	52	3291412.47	6.53
Local Bodies	19	30193.46	0.06
Fin Inst.	509	1647220.13	3.27
Bank Bonds	466	2092198.57	4.15
Supranational Bonds	1	3912.22	0.01
Corporate Bonds	2015	2898727.03	5.76
Total	5766	50368832.6	100

Government Securities Market

Central Government Securities: Bonds

The government bond market, made up of the long-term market borrowings of the government, is the largest segment of the debt market. The government securities market has witnessed significant transformation in the 1990s in terms of market design. The most significant developments include introduction of auction-based price determination for government securities, development of new instruments and mechanisms for government borrowing as well as participation by new market participants, increase in information dissemination on market borrowings and secondary market transactions, screen based negotiations for trading, and the development of the yield curve for government securities for marking-to-market portfolios of banks. During the last one decade, RBI introduced the system of primary dealers (PDs) and satellite dealers (since discontinued from December 2002), introduced delivery *versus* payment (DvP) in securities settlement, expanded the number of players in the market with facility for non-competitive bidding in auctions, and allowed wider participation in constituent Subsidiary General Ledger (SGL) accounts. The government securities market also benefited from emergence of liquidity arrangement through the Liquidity Adjustment Facility (LAF), expansion of the repo markets, complete stoppage of automatic monetization of deficits, and emergence of self-regulatory bodies, such as, the Primary Dealers Association of India (PDAI) and the Fixed

Income Money Markets and Derivatives Association (FIMMDA). Continuous reforms in the G- Sec market are being undertaken for improving market design and liquidity.

To enhance liquidity and efficiency, some important initiatives have been taken such as: (i) introduction of repo/reverse repo operations in government securities to facilitate participants of manage short term liquidity mismatches (ii) Operationalization of

Negotiated Dealing system (NDS), an automated electronic trading platform (iii) establishment of Clearing Corporation of India Ltd. (CCIL) for providing an efficient and guaranteed settlement platform (iv) introduction of G-secs in stock exchanges (v) introduction of Real time Gross Settlement System (RTGS) which addresses settlement risk and facilitates liquidity management, (vi) adoption of a modified Delivery-versus-Payment mode of settlement which provides for net settlement of both funds and securities legs and (vii) announcement of an indicative auction calendar for Treasury Bills and Dated Securities.

Several initiatives have been taken to widen the investor base for government securities. To enable small and medium sized investors to participate in the primary auction of government securities, a 'Scheme of Non Competitive Bidding' was introduced in January 2002, this scheme is open to any person including firms, companies, corporate bodies, institutions, provident funds and any other entity prescribed by RBI.

In order to provide banks and other institutions with a more efficient trading platform, an anonymous order matching trading platform (NDS-OM) was made operational from August 1, 2005. Access to NDS OM was initially allowed to commercial banks and PDs but later extended to other NDS members such as insurance companies, mutual funds and bigger provident funds. In addition to the direct access, indirect access through the Constituent Subsidiary General Ledger (CSGL) route was permitted from May 2007 to select category of participants, viz, deposit taking NBFCs, provident funds, pension funds, mutual funds, insurance companies, cooperative banks, regional rural banks and trusts. With effect from November 2007, the CSGL facility was extended to the Systemically Important Non- Deposit taking NBFCs (NBFC-ND-SI). From May 2008, access to the CSGL facility on NDS-OM was further extended to other non-deposit taking NBFCs, corporates and FIIs.

These entities are allowed to place orders on NDS-OM through direct NDS-OM members viz, banks and PDs, using the CSGL route. Such trades would settle through the CSGL account and current account of the NDS-OM member.

To provide an opportunity to market participants to manage their interest rate risk more effectively and to improve liquidity in the secondary market, short sales were permitted in dated government securities during February 2006. 'When Issued' (WI) trading in Central government securities was also introduced in May 2006. WI trades are essentially forward transactions in a security which is still to be issued. The short sale and 'when issued' transactions introduced in February 2006 and May 2006 respectively were initially permitted to be undertaken only to NDS-OM. With a view to encouraging wider market participation, the cover transactions of short sales and 'when issued' were permitted to be undertaken outside NDS-OM i.e. through the telephone market or through purchases in primary issuance with effect from January 1, 2008.

The settlement system for transactions in government securities was standardized to T+1 cycle with a view to provide the participants with more processing time at their disposal and therefore, to enable better management of both funds as well as risk.

Holding a current account and SGL account with the Reserve Bank of India was mandatory for settlement of Government security transactions by the NDS members. However, the medium term objective of the Reserve Bank is to allow current account facility only to banks and PDs, which necessitates phasing out of current accounts held by the non-bank and non PD entities. In this regard, to facilitate the settlement of Government security transactions undertaken by the non-bank and non-PD NDS members, a system of 'Multi Modal Settlements' (MMS) in Government Securities market was put in place. Under this arrangement, the funds leg of the transaction is settled through the fund accounts maintained by these entities and select

commercial banks chosen as 'designated settlement banks' (DSB). All Government securities related transactions, viz secondary market, primary market and servicing of Government securities (interest payments and repayments) for these entities will be carried out through the current account of the 'DSB' with whom the non-bank and non-PD entities open the settlement account. The system became effective from June 16, 2008.

As a result of the gradual reform process undertaken over the years, the Indian G-Sec market has now become increasingly broad-based, characterized by an efficient auction process, an active secondary market and a fairly liquid yield curve up to 30 years. An active Primary Dealer (PD) system and electronic trading and settlement technology that ensure safe settlement with Straight Through Processing (STP) and central counterparty guarantee support the market now.

The Reserve Bank initiated significant measures during 2007-08 to further broaden and deepen the Government Securities market in consultation with market participants. The salient features of the developmental measures undertaken during the year included:

- i. Permitting short sales and 'when issued' transactions to be covered outside NDS-OM platform.
 - ii. Extension of NDS-OM platform to certain qualified gilt account holders and
 - iii. Putting in place a settlement mechanism to permit settlement of Government securities transactions through fund accounts maintained with commercial banks.
- These reforms have resulted in a marked change in the nature of instruments offered, a wider investor base and a progressive movement towards market determined interest rates. The market for government securities has, however, remained largely captive and wholesale in nature, with banks and institutions being the major investors in this segment. While the primary market for government securities witnessed huge activity due to increased borrowing needs of the government, only a small part of the outstanding stock finds its

way into the secondary market. The number of transactions in the secondary market continues to be small relative to the size of outstanding debt and the size of the participants. The liquidity continues to be thin despite a shift to screen-based trading on NSE.

The holding of G-Secs among the financial institutions has been more diversified, particularly, with the emergence of insurance and pension funds as a durable investor class for the long-term securities. This became possible due to the sustained efforts devoted to elongation of the maturity profile of government securities.

G-Secs: Trends in Volumes

Markets for government securities are pre-dominantly wholesale markets, with trades done on telephonic negotiation. NSE WDM provides a trading platform for Government bonds, and reports over 65% of all secondary market trades in government securities. Since participants have to report their trades to the PDO, and effect settlement through the SGL, RBI's reports on SGL transactions provide summary data on secondary market transactions in government bonds. SGL holders are expected to report their trades within 24 hours, due to which the time sequence of trades is not observed in the debt markets. Since most trades done on the NSE are also in the form of negotiated trades that are subsequently reported, the "last traded price" is not observed in the secondary markets.

Currently, transactions in government securities are required to be settled on the trade date or next working day unless the transaction is through a broker of a permitted stock exchange in which case settlement can be on T+2 basis.

In NDS (Negotiated Dealing System), all trades between members of NDS have to be reported immediately. The settlement is routed through CCIL for all NDS members.

All the secondary market transactions in Government Securities are settled through Clearing Corporation of India Limited (CCIL). The entire settlement is achieved under DVP III mode (DVP-III is a settlement process in which settlements are done on Delivery versus Payment after achieving multilateral netting. For each Settlement date, the funds are netted for all secondary market transactions in Government securities market whereas in case of securities, the multilateral netting is achieved for each member separately for his SGL and CSGL account and within each such account for each ISIN). Multilateral netting is achieved for each settlement date. A single funds settlement obligation for each member for a particular settlement date is determined by netting all his secondary market Government securities transactions for that settlement date. The settlement is achieved in the RTGS Settlement / Current Account maintained by the member in RBI and for those members who are either not allowed maintaining or operating a Current Account with RBI for settlement of their secondary market transaction in Government securities, at the Designated Settlement Bank. Multilateral netting for securities are achieved by netting of securities for each member based on SGL / CSGL and then for each ISIN. Thus benefit of multilateral netting is made available to all members for whom CCIL is facilitating settlement of trades. CCIL acts as Central Counter Party to all Government securities trade and provides settlement guarantee based on adequacy of margins, thereby facilitating smooth settlement with multilateral netting benefits, reducing gridlocks and mitigates a cascading impact of default by one member on others.

The secondary market trades in Government securities received by CCIL for clearing and settlement are from Negotiated Dealing System – Order Matching (NDS-OM), Clearcorp Repo Order Matching System (CROMS) and Negotiated Dealing System (NDS). The trades from NDS-OM and CROMS flow online whereas the

trades from NDS are received in Batch mode. Batch I is received by CCIL from RBI after the closure of market hours for secondary market in Government securities transactions for T+0 settlements. Batch II is received by CCIL after the closure of market hours for T+1 settlement. The trades received by CCIL are processed immediately for adequacy of margins and trades for which adequate margins are available are accepted for guaranteed settlement. The trades received for settlement includes outright and repo transactions and instruments for which clearing and settlement are facilitated includes Treasury Bills, Central Government Securities, State Government Securities, STRIPS, and when issued instruments – both new issues and re-issues.

Following table gives us a snapshot of secondary market trade volumes of G-Sec received by CCIL for the financial year 2013-14:

Rs

in Crores

OUTRIGHT			REPO			TOTAL
Month	No of Trades	Amount (FV)	No of Trades	Amount (FV)	No of Trades	Amount (FV)
APR-13	92,020	1,078,039.57	3,931	603,520.42	95,951	1,681,559.99
MAY-13	144,583	1,883,277.13	4,949	763,712.83	149,532	2,646,989.96
JUN-13	77,160	901,928.52	4,223	613,400.44	81,383	1,515,328.96
JUL-13	66,672	685,334.38	4,159	670,302.83	70,831	1,355,637.21
AUG-13	42,223	437,716.17	3,596	564,856.35	45,819	1,002,572.52
SEP-13	55,255	574,040.60	3,710	617,125.19	58,965	1,191,165.79
OCT-13	63,660	628,397.99	4,209	651,575.42	67,869	1,279,973.41
NOV-13	51,014	507,242.25	3,692	539,934.59	54,706	1,047,176.84
Total	592,587	6,695,976.61	32,469	5,024,428.07	625,056	11,720,404.68

Primary Issuance Process

The issuance process for G-secs has undergone significant changes in the 1990s, with the introduction of the auction mechanism, and the broad basing of participation in the auctions through creation of the system of primary dealers, and the introduction of non-competitive bids. RBI announces the auction of government securities through a press notification, and invites bids. The sealed bids are opened at an appointed time, and the allotment is based on the cut-off price decided by the RBI. Successful bidders are those that bid at a higher price, exhausting the accepted amount at the cut-off price.

The design of treasury auctions is an important issue in government borrowing. The objectives of auction design are:

1. Enabling higher auction volumes that satisfy the target borrowing requirement, without recourse to underwriting and/or devolvement;
2. broadening participation to ensure that bids are not concentrated or skewed; and
3. Ensuring efficiency through achieving the optimal (lowest possible) cost of borrowing for the government.

The two choices in treasury auctions, which are widely known and used, are:

- Discriminatory Price Auctions (French Auction)
- Uniform Price Auctions (Dutch Auction)

In both these kinds of auctions, the winning bids are those that exhaust the amount on offer, beginning at the highest quoted price (or lowest quoted yield). However, in a uniform price auction, all successful bidders pay a uniform price, which is usually the cut-off price (yield). In the case of the discriminatory price auction, all successful bidders pay the actual price (yield) they bid for. If successful bids are decided by filling up the notified amount from the lowest bid upwards, such an auction is called a yield-based auction. In such an auction, the name of the security is the cut-off

yield. Such auction creates a new security, every time an auction is completed. For example, the G-sec 11.40% 2018 derives its name from the cut-off yield at the auction, which in this case was 11.40%, which also becomes the coupon payable on the bond.

A yield-based auction thus creates a new security, with a distinct coupon rate, at the end of every auction. The coupon payment and redemption dates are also unique for each security depending on the deemed date of allotment for securities auctioned.

If successful bids are filled up in terms of prices that are bid by participants from the highest price downward, such an auction is called a price-based auction. A price-based auction facilitates the re-issue of an existing security. For example, in March 2001, RBI auctioned the 11.43% 2015 security. This was a G-sec, which had been earlier issued and trading in the market. The auction was for an additional issue of this existing security. The coupon rate and the dates of payment of coupons and redemption are already known. The additional issue increases the gross cash flows only on these dates. The RBI moved from yield-based auction to price-based auction in 1998, in order to enable consolidation of G-secs through re-issue of existing securities. Large issues would also facilitate the creation of treasury strips, when coupon amounts are large enough for ensuring liquidity in the secondary markets. The RBI however, has the flexibility to resort to yield-based auctions, and notify the same in the auction notification.

The RBI has the discretion to reject bids when the rates at which bids are received are higher than the rates at which RBI wants to place the debt. Depending on the pricing objective RBI wants to achieve and the bidding pattern of participants, bidding success and devolvement take place.

Non-competitive bids can also be submitted in treasury auctions. Allotments to these bids will be first made from the notified amount, at the weighted average price of all successful bids. The current regulations of RBI provide for reservation of 5% of the

notified amount in all the auctions for noncompetitive bids from retail investors, who can apply through PDs and other market participants.

Valuation of Central Government Securities:

Fixed Income Money Market and Derivatives Association of India (FIMMDA) have issued guidelines / clarifications in respect of the methodology to be followed for valuation of Government Securities, bonds and debentures etc. at periodical intervals based on guidelines issued by Reserve Bank of India. Central Government Securities, which qualify for SLR the prices as well as the yield curve for the Central Government Securities is published by FIMMDA. The curve is termed as the Base Yield Curve for the purpose of valuation. The Base Yield Curve starts from six month tenor. The yield for six- month tenor would also be applicable for maturities less than six months.

Central Government Securities, which do not qualify for SLR shall be valued after adding 25 basis points (bps) above the corresponding yield on Government of India Securities.

STRIPS - Primary and secondary market volumes

STRIPS is the acronym for Separate Trading of Registered Interest and Principal Securities. Stripping is the process of separating a standard coupon-bearing bond into its individual coupon and principal components. For example, a 5 year coupon bearing bond can be stripped into 10 coupon and one principal instruments, all of which thenceforth would become zero coupon bonds.

In an *official STRIPS market* for the Government securities, these stripped securities i.e., the newly created zero coupon bonds remain the *direct obligations of the Government* and are *registered* in the books of the agent meant for this purpose. Thus the

mechanics of stripping neither impacts the direct cost of borrowing nor change the timing or quantum of the underlying cash flows; stripping only facilitates transferring the right to ownership of individual cash flows.

When STRIPS made a beginning in the early seventies in the US, the initial motivation came in the form of tax benefits. The process of stripping facilitated the holders of a US Treasury Bond to separate the component pieces, then to sell the principal component which by then became a zero coupon bond and then claim capital loss on the transaction. Furthermore, while the holders of the coupon STRIPS continued to enjoy the income stream, tax was paid not on the accrued income but only when these coupon STRIPS matured or were sold. Such market behaviour, apart from resulting in significant revenue losses, also led to deferment of tax. The anomaly was ultimately rectified through the Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982, which required the holders of zero coupon bonds to accrue a portion of the discount towards par each year.

Advantages

STRIPS would facilitate the availability of zero coupon bonds (ZCBs) to the investors and traders. They provide the most basic cash flow structure thus offering the advantage of more accurate matching of liabilities without reinvestment risk and a precise management of cash flows. Thus to some investors who set the incoming inflows against an actuarial book (eg. Insurance companies), STRIPS offer excellent investment choices. Apart from the advantages they offer to low risk investors like pension funds and insurance companies, STRIPS offer much greater leverage to hedge funds, since the zero coupon bonds are more volatile than the underlying coupon bearing bonds. Due to the divergent interests of different segments of investors in the market, demand for each component of the STRIPS could be so great that the sum

of the values of the constituent parts exceeded the value of the whole bond. Last but not the least, STRIPS offer an excellent scope to construct a zero yield curve for the sovereign bond market.

Need and Scope

The government securities market in India is dominated by captive investors like banks, insurance companies and provident funds, of which the banking system continues to be the predominant holder of and investor in Government securities. While, earlier it used to be mainly the statutory requirements which compelled the banking system to invest a major portion of their liabilities in Government securities, in the recent past, their investment decisions have been guided by the capital adequacy, income recognition and provisioning norms. With a significant portion of banks' assets in dated government securities and most of the liabilities upto 3 years there is a growing concern about the asset liability mismatches and their impact on the banks' balance sheets. On the other hand, an efficient and long-term debt management strategy need to ensure that the debt profile does not have an over-concentration at the short-end and would try to even out the redemption pattern, thereby minimizing the refinancing risk. STRIPS, through the creation of securities of varied maturities from a single coupon bearing instrument offers investment opportunities for diverse investor groups having different investment horizons.

In the past, RBI has introduced several non-conventional government securities, such as zero coupon bonds, floating rate bonds, index linked bonds etc., of which the zero coupon bonds were quite popular with the markets. However, being discounted bonds, the cash inflows happen to be smaller for a specific issue size that goes by the face or nominal value, the lesser the amount the greater the term to maturity of the bond. The existing budget accounting does not have a system of providing for amortised

payments. STRIPS, essentially zero coupon securities, being thus created by the markets and not by the issuer circumvents these problems while offering all the benefits of investing in a zero coupon security.

Apart from providing an instrument to handle the ALM/interest rate mismatches of banks on account of their large portfolios of Government securities other reasons that favour a STRIPS market for Government securities in India are the scope offered by the insurance sector on the one hand and the private pension funds and individual pension provisions. Their investment strategies would be guided by their primary objective of matching their assets to an actuarial book. Besides, STRIPS add to the menu of investment avenues presently available to the market.

Highly Traded Markets

Cash Market: Cash market is a market for sale of security against immediate delivery, as opposed to the futures market. Following table provides us a gist of trading volumes on national stock exchanges BSE & NSE for past one year:

INR Cr		
Month	BSE	NSE
Dec-13	43,372.16	230,817.32
Nov-13	40,767.61	217,778.95
Oct-13	41,244.00	237,907.98
Sep-13	40,651.17	243,576.46
Aug-13	40,875.72	250,758.32
Jul-13	41,666.99	243,387.63
Jun-13	36,377.41	207,942.94
May-13	49,996.07	244,363.52
Apr-13	40,980.02	210,797.03
Mar-13	39,744.92	212,598.02
Feb-13	42,137.95	226,641.72
Jan-13	56,661.68	295,415.17

Forward Markets: Forward markets are over-the-counter marketplace that sets the price of a financial instrument or asset for future delivery. Contracts entered into in the forward market are binding on the parties involved. Forward markets are used for trading a range of instruments including currencies and interest rates, as well as assets such as commodities and securities. While forward contracts, like futures contracts, may be used for both hedging and speculation, there are some notable differences between the two. Forward contracts can be customized to fit a customer's requirements, while futures contracts have standardized features in terms of their contract size and maturity. The lack of standard features means that forward contracts seldom trade on exchanges, whereas futures contracts are generally exchange-listed. Since forward contracts generally tend

to be large in size, the forward market is dominated by financial institutions, government bodies and large corporations.

Futures and Options Market: Futures is a financial contract obligating the buyer to purchase an asset (or the seller to sell an asset), such as a physical commodity or a financial instrument, at a predetermined future date and price. Futures contracts detail the quality and quantity of the underlying asset; they are standardized to facilitate trading on a futures exchange. Some futures contracts may call for physical delivery of the asset, while others are settled in cash. The futures markets are characterized by the ability to use very high leverage relative to stock markets. Futures can be used either to hedge or to speculate on the price movement of the underlying asset.

An Option is a financial derivative that represents a contract sold by one party (option writer) to another party (option holder). The contract offers the buyer the right, but not the obligation, to buy (call) or sell (put) a security or other financial asset at an agreed-upon price (the strike price) during a certain period of time or on a specific date (exercise date).

Options are extremely versatile securities that can be used in many different ways. Traders use options to speculate, which is a relatively risky practice, while hedgers use options to reduce the risk of holding an asset.

In terms of speculation, option buyers and writers have conflicting views regarding the outlook on the performance of an underlying security.

For example, because the option writer will need to provide the underlying shares in the event that the stock's market price will

exceed the strike, an option writer that sells a call option believes that the underlying stock's price will drop relative to the option's strike price during the life of the option, as that is how he or she will reap maximum profit.

This is exactly the opposite outlook of the option buyer. The buyer believes that the underlying stock will rise, because if this happens, the buyer will be able to acquire the stock for a lower price and then sell it for a profit. Call options give the option to buy at certain price, so the buyer would want the stock to go up. Put options give the option to sell at a certain price, so the buyer would want the stock to go down. The main fundamental difference between options and futures lies in the obligations they put on their buyers and sellers. An option gives the buyer the right, *but not the obligation* to buy (or sell) a certain asset at a specific price at any time during the life of the contract. A futures contract gives the buyer the *obligation* to purchase a specific asset, and the seller to sell and deliver that asset at a specific future date, unless the holder's position is closed prior to expiration.

Aside from commissions, an investor can enter into a futures contract with no upfront cost whereas buying an options position does require the payment of a premium. Compared to the absence of upfront costs of futures, the option premium can be seen as the fee paid for the privilege of not being obligated to buy the underlying in the event of an adverse shift in prices. The premium is the maximum that a purchaser of an option can lose.

Another key difference between options and futures is the size of the underlying position. Generally, the underlying position is much larger for futures contracts, and the obligation to buy or sell this certain amount at a given price makes futures more risky for the inexperienced investor. The final major difference between these two financial instruments is the way the gains are received

by the parties. The gain on an option can be realized in the following three ways: exercising the option when it is deep in the money, going to the market and taking the opposite position, or waiting until expiry and collecting the difference between the asset price and the strike price. In contrast, gains on futures positions are automatically 'marked to market' daily, meaning the change in the value of the positions is attributed to the futures accounts of the parties at the end of every trading day - but a futures contract holder can realize gains also by going to the market and taking the opposite position.

Future and options are registering remarkable volumes on national stock exchanges which are depicted in following table:

INR Cr

Month	BSE	NSE
Dec-13	569,438.50	2,787,960.81
Nov-13	638,686.61	2,898,504.30
Oct-13	684,660.08	3,206,065.82
Sep-13	390,617.33	3,381,557.66
Aug-13	835,188.77	3,813,920.69
Jul-13	1,439,535.10	3,180,392.71
Jun-13	673,224.99	3,190,886.52
May-13	612,932.09	3,503,801.19
Apr-13	293,512.54	3,010,162.93
Mar-13	269,014.31	3,127,445.81
Feb-13	229,469.82	2,575,097.44
Jan-13	923,441.46	2,950,975.14
Dec-12	899,852.57	2,640,392.76

Exchange Traded and Over-the-counter Market: An exchange-traded fund is an investment fund that is traded on a stock exchange, just like stocks. An ETF holds assets such as stocks, commodities or bonds and trades in value, around its (NAV) over the course of the trading day. Most ETFs track an index such as a stock index or a bond index. ETFs are attractive investments

because of their low costs, diversified holdings, tax efficiency and stock-like features. ETFs are the most popular type of exchange-traded products in the USA and Europe.

Exchange Traded Funds are simple and easy to understand. Most ETFs also have an intrinsically lower risk due to their diversified portfolio. This diversification coupled with low expenses allows the smallest of the investors to reap the benefits of market based returns. Retail investors can use ETF's as an easy entry vehicle into the capital markets. Equity investments are most likely to give you attractive long term growth. And, this growth is reflected in market indices, like the NSE Nifty. Seven asset management companies have launched ETFs on CNX Nifty Index which are listed on NSE. Indian stock exchanges are witnessing high trading volumes in Gold ETFs in the recent past.

Over the counter market: The OTC markets are informal markets where trades are negotiated. Most of the trades in government securities take place in the OTC market. All the spot trades where securities are traded for immediate delivery and payment occur in the OTC market. The other option is to trade using the infrastructure provided by the stock exchanges. The exchanges in India follow a systematic settlement period. Since OTC markets are informal markets and most of the trades take place over the phone, it is difficult to track volumes.

RBI Policy rates – liquidity support for banks and PDs

PDs are permitted to borrow funds from call/notice/term money market and repo (including CBLO) market. They are also eligible for liquidity support from RBI. PDs are allowed to borrow from call/notice market, on an average in a 'reporting fortnight', up to

225 percent of their NOF as at the end March of the preceding financial year. They may lend up to 25 percent of their NOF in call/notice money market, on an average in a 'reporting fortnight'. These limits on borrowing and lending are subject to periodic review by RBI.

Liquidity Support from RBI

In addition to access to the RBI's LAF, standalone PDs are also provided with liquidity support by the RBI against eligible G-Sec including SDLs. The parameters based on which liquidity support will be allocated are given below:

- i. Of the total liquidity support, half of the amount will be divided equally among all the standalone PDs. The remaining half (i.e. 50%) will be divided in the ratio of 1:1 based on market performance in primary market and secondary market. Performance in primary market will be computed on the basis of bids accepted in the T-Bill/CMB auctions and G-Sec auctions in the proportionate weights of 1 and 3. Similarly, the secondary market performance will be judged on the basis of outright turnover in T-Bills/CMBs and G-Sec in the proportionate weights of 1 and 3.
- ii. The PD-wise limit of liquidity support will be revised every half-year (April-September and October-March) based on the market performance of the PDs in the preceding six months.
- iii. The liquidity support will be made available at the 'Repo Rate' announced by the RBI.
- iv. The liquidity support availed by a PD will be repayable within a period of 90 days. If it is repaid after 90 days, the penal rate of interest payable by PDs is Bank rate plus 5 percentage points for the period beyond 90 days.

Market practices & FIMMDA guidelines:

The Fixed Income Money Market and Derivatives Association of India (FIMMDA) was established in May 1998 and formally inaugurated by Dr. Y.V. Reddy, Deputy Governor, Reserve Bank of India (RBI). One of the main objectives of establishing FIMMDA was to recommend and implement healthy business practices, ethical code of conduct, standard principles and practices to be followed by the members in their dealing of securities. To provide a clear understanding of market conventions, practices and high levels of integrity by the individuals concerned in the market, FIMMDA has formulated and prescribed certain set of regulations which are discussed below.

General Principals:

- It is expected that all the Principals and Brokers should maintain the highest standards of conduct so as to enhance the reputation of these markets.
- All participants must ensure that any individual who commits on behalf of the institution is acting within approved authorities.
- All institutions must stand by the commitment made by an individual acting on their behalf, the principle being 'My Word is my Bond'.
- Institutions must ensure that the individuals acting on their behalf are fully trained and completely aware of the rules and regulations, conventions, practices and the markets in which they deal.
- All individuals must comply with the rules and regulations governing the market and keep up-to-date with changes that may happen from time to time.
- Trades done outside the NDS, between institutions who are members of the NDS should be entered in the NDS within a period of 15 minutes from the time of conclusion of the trade.

- The role of a broker is to bring together the counterparties for a fee. When brokers act as intermediaries, they are not expected to act as principals or in a discretionary capacity, even momentarily. Where the broking company is acting on its own account, it is expected to declare that it is dealing as a principal before negotiating the trade.
- Brokers and principals are expected to maintain confidentiality of the parties involved in the transactions.
- Settlement of the deals in Fixed Income, Money Market and Rupee Derivatives will be subject to market conventions laid down by FIMMDA, irrespective of the counterparty being a member of FIMMDA.

Internal Controls:

The fundamental principle of maintenance of internal controls is the functional segregation of the front office and back office and settlement functions. Since there may be an overlap of the mid-office and back office functions, the managements of individual institutions may lay down any other level of segregation that it thinks fit. Personnel in back office functions and mid-office functions should be functionally segregated from those in the front office. Persons who conclude trades must not be involved in the confirmation or settlement of trades.

It is desirable to put in place the appropriated checks and controls from management perspective. Following procedures and controls may be put in place by the management in respect of their dealing in the markets:

- *Knowing the counterparty:* It is good practice to carry out basic due diligence and 'Know your counterparty' checks before dealing with the party. This basic check is to find out who the dealing party is and why the counterparty is dealing with the involved products.

- *Recording of the conversations:* It is a general experience that recourse to recorded tapes provides speedy resolution of disputes and differences. System of recording should be implemented in all the member front offices as soon as possible. However, while installing a recording system or signing up a new client, counterparties should be duly informed regarding the recording of the conversations. Further the recordings should be preserved for at least three months or till the time of resolution of disputes in case of disputed/unconfirmed transactions. Management should place adequate controls/checks in place to ensure the recorded data is not tampered with.
- *Off-Premise Dealings:* As a practice, participants should deal only from their normal place of dealing i.e. from their respective dealing rooms/office as the case may be. However, there may be occasions when the dealer may have to deal from other than his normal place of dealing. Management may lay down the guidelines, including the staffs that are authorized to deal from outside the normal place of dealing. The dealer / official should, prior to dealing, inform the counterparty about dealing off-premises. The fact that the deal has been done off the premises should also be recorded in the deal confirmation and/or other relevant records.
- *Dealing Hours:* FIMMDA has prescribed dealing hours from 9:00 a.m. to 5:30 p.m. from Monday to Friday and from 9:00 a.m. to 1:00 p.m. on Saturday. However any provisions and regulations made by RBI would supersede and timings prescribed by RBI would prevail. Deals done outside these hours should be reported to the management and

management should satisfy themselves about the necessity of concluding such deals outside the prescribed hours.

- *Personal Investments*: Personal investments of dealers in the products, which the institution is dealing in should confirm to the “Personal Investment Policy” formulated by the management. While framing the Personal Investment Policy the management should take into consideration the rules and regulations laid down by any statutory authority in respect of insider trading.
- *Rotation of Dealers*: It has been suggested that dealers should not be kept too long on the same desk. Management should formulate suitable policy for rotation of dealers. Further a system of an annual compulsory leave of 15 days or longer may be introduced so that no dealer remains on the job continuously.
- *Confirmation of Deals*: Firms should ensure that they have a process in place to ensure that deals recorded by the trader are confirmed independently by the back-office. All confirmations should include the date of the deal, the name of the counterparty and all other details of the deal. It is a good practice to also confirm all settlement details, even when some of these details do not change with each and every deal. The back office must respond promptly to confirmations received for which they do not have a corresponding trade. It is proper to first check with the front office to ensure that no deal has been missed. They should then promptly advise the back office of the counterparty of the absence of the trade. A discrepancy between a confirmation and significant details of the trade, and even the existence of a trade, should be brought to the attention of the management. Management should satisfy themselves of the

genuineness and accuracy of the trade. It is important that discrepancies should be promptly sorted out within a few minutes of the deal.

Dealing Procedures and Principals:

It is the prime responsibility of the Dealers to clearly state at the outset, prior to a transaction being executed, and any qualifying conditions to which the deal will be subject to. Where a firm quote has been indicated on the NDS, qualifying conditions cannot be specified after the conclusion of the deal. Typical examples of qualifications include where a price is quoted subject to the necessary credit approval, limits available for the counterparty, inability to conclude a transaction because offices of the member in other centres are not open. This should be made known to the broker and the potential counterparty at an early stage and before names are exchanged by the broker.

Dealers, whether acting as principals, agent or broker, have a duty to make absolutely clear whether the prices they are quoting are firm or merely indicative. Prices quoted by brokers should be taken as indicative unless otherwise qualified. In respect of deals on the NDS, the dealer would put the quote as a 'firm' quote or 'indicative' quote on the NDS. In case the dealer is willing to do the deal only with a certain set of counterparties, he should put the quote as 'firm' only for preferred counterparties. In respect of other deals, a dealer quoting a firm price or rate either through a broker or directly to a potential counterparty is committed to deal at that price or rate in a marketable amount provided, the counterparty name is acceptable. Generally, prices are assumed to be firm as long as the counterparty or the broker is on line. Members should clearly and immediately indicate when the prices are withdrawn. In volatile markets, or when some news is expected, dealers quoting a firm price or rate should indicate the length of time for which their quote is firm. The price or the rate is usually for the

marketable amount. If the quote is not for a marketable quantity, the dealer / broker should qualify the same while submitting the quote.

A significant part of the volume transacted by brokers relies on mandates given by dealers acting on behalf of principals. The risk that the principal runs is that such an offer could get hit after an adverse market move has taken place. The broker is expected to use the mandate in order to “advertise” the principal’s interest to the entities that the broker expects will have an interest in the price. Generally, the broker is free to show the price to entities he deems fit, but members have the right to expect that if a smaller set is defined; the broker will adhere to such a smaller set.

Mandates shall not be for a period of more than 15 minutes unless otherwise specified. Brokers are expected to check with the principal from time to time to ensure that the mandate is still current. The broker shall reveal the name of the entity offering the mandate when the counterparty is firm to deal at the mandate price. The broker will then call the member who offered the mandate and confirm the deal. In the absence of any significant market movement, the member who has offered the mandate is expected to adhere to it. In case the price is not adhered to, it is the responsibility of the member who had offered the mandate to explain why the mandate is no longer valid. It is required of the member that the mandate price be withdrawn before the broker reveals the counter party name.

The only exception to this is when the counterparty name is not acceptable. The principal should call the broker if he wishes to withdraw the mandate before its expiry. The quote cannot be withdrawn after the broker has concluded the deal.

Delivery of the securities/funds: *The dealers should agree upon the delivery conditions before concluding the deal.* Delivery of the securities/funds is on a Delivery-versus-Payment (DVP) basis in respect of Government Securities and T-Bills. In respect of other

securities, which are in demat form, since there is no DVP mechanism, the dealers should agree upon the priority of settlement of the securities and funds. Where physical securities are to be delivered, the dealers should agree before conclusion of the deal as to whether the settlement will be DVP or otherwise (in which case the priority of settlement needs to be agreed upon).

Concluding a Deal: Dealers should regard themselves as bound to honor a deal once the price, name acceptability, credit approval and any other key commercial terms have been agreed. Oral agreements/contracts are considered binding on all the parties concerned. In respect of deals done on the NDS, the deal would be considered as final as soon as any counterparty responds to a 'firm' quote. Where quoted prices are qualified as being indicative or subject to negotiation of commercial terms, members should normally treat themselves as bound to honor the deal at the point when the terms have been agreed without qualification. Oral agreements are considered binding; the subsequent confirmation is evidence of the deal but should not override terms agreed orally. Making a transaction subject to documentation is not a good practice. In order to minimize the likelihood of disputes arising once documentation is prepared, dealers should make every effort to clarify all material points quickly during the oral negotiation of terms, and should include these in the confirmation.

Where brokers are involved, members have the right to expect that the broker will make them aware immediately on conclusion of the deal. As a general rule a deal should be regarded as having been 'done' where the dealer positively acknowledges the broker's confirmation. It is expected that a broker shall not assume that a deal is done without oral confirmation from the dealer.

Passing of names by brokers: It is a good practice for dealers not to seek the names of the counterparty before transacting and for brokers not to divulge the names before concluding the deal. Dealers and brokers should at all times treat the details of transactions as

absolutely confidential between the parties involved. To save time and avoid confusion, dealers should, wherever practical, give brokers prior indication of counterparties with whom, for whatsoever reason, they would be unwilling to do business. In all their transactions, brokers should aim to achieve a mutual and immediate exchange of names. Instruments like Certificate of Deposits and Commercial Papers, where the seller may not be the same entity as the issuer, the broker shall first disclose the issuer's name to the potential buyer. The name of the buyer shall be disclosed only after the buyer has accepted the seller's name. The seller has the right to refuse to transact with the buyer.

Reporting of deals on the NDS: The dealers should enter the deals, concluded on the NDS or to be reported on the NDS, within a period of 15 minutes of the conclusion of the deal. Deals in Government Securities and T-Bills may be conducted either on the NDS or otherwise. However, all the deals in Government Securities and Treasury Bills have to be reported on the NDS. Since the settlement of the deals amongst members will be through CCIL, it would have to be entered in the NDS. The dealer of the selling counterparty of the securities has to enter the deal into NDS and the dealer of the buying counterparty have to approve the deal. The back office of both the counterparties has to then approve the deal. It would be a good practice to conclude the approval of the deals within a period of 30 minutes from the time of conclusion of the deal. In any case the process should be completed before the time of closure of the NDS.

Oral Confirmations: No oral confirmation is essential in respect of deals, entered in the NDS. In respect of other deals an oral confirmation of the deals by the back office is a good practice. Lack of response should not be construed as confirmation.

Written Confirmations: A written confirmation of each deal must be sent out at the earliest and a confirmation should be received from the counterparty. The confirmation provides a necessary final safeguard against dealing errors.

Confirmations should be dispatched and checked promptly, even when oral deal confirmations have been undertaken. A confirmation of each deal must be sent out at the earliest. This is particularly essential if dealing for same day settlement. All participants of the wholesale markets should have in place the capability to dispatch confirmations so that they are received and can be checked within a few hours from the time of striking the deal. Where the products involved are more complex, and so require more details to be included on the confirmation, this may not be possible; nevertheless it is in the interest of all concerned that such deals are confirmed as quickly as possible and in no case later than the next working day of the date of the deal. It is recommended that principals should inquire about confirmations not received within the expected time. All confirmations should include the trade date, value date, the name of the counterparty and all other details of the deal, including, wherever appropriate, the commission charged by the broker. All confirmations should state "The settlement of the deals in Fixed Income, Money Market and Rupee Derivatives are subject to FIMMDA's market conventions irrespective of the counterparty being a member of FIMMDA". It is an accepted practice for principals to confirm directly all the details of transactions arranged through a broker; who independently sends a contract/transaction confirmation to both counterparties. It is vital that principals upon receipt of confirmations immediately check the confirmations carefully so that discrepancies are quickly revealed and corrected. As a general rule, confirmations should not be issued by or sent to and checked by dealers. Confirmation is a back-office function.

Regulations governing Unscheduled Holiday

An Unscheduled Holiday may be declared on account of:

- *Systemic Problems:* Events that could lead to total settlement transactions coming to a halt like general bandh / RBI strike / political disturbances / disruption of public utility services due to heavy rains, etc. These events would have an impact on the overall system and would be common to all players at a particular place.
- *Specific Problems:* Events that could have an impact on transactions entered into between few or a group of market participants like a strike in one bank / few banks / organizations participating in money market. This would pose settlement problem to the counter party to the transactions entered with such market participant(s).

Declaration of unscheduled holiday due to systemic problems:

FIMMDA, after taking into consideration the status of clearing transactions and in consultation with select market players and/or RBI, may decide to postpone settlement of transactions in money, securities, and derivatives markets. The decision of FIMMDA will be formally communicated through information service providers / wire agencies like Reuters, Bloomberg, Money Line Telerate, etc. It would be also published on FIMMDA's website.

Call Money: Settlement of second leg would be done at the contracted rate for the extended period of settlement. In other words, additional interest for one / more day/s would be payable at contracted rate on amount borrowed. Call Money transactions due for settlement on 1st leg would get automatically cancelled as, the transaction is by nature, overnight money.

Notice Money / Term Money (Inter-Bank): Where 1st leg of the transaction could not be performed because of the above event, the contract would be deemed to have been done for settlement on the following working day for the same original period (number of days) and at same rate. The other terms of the contract would remain unaltered. Banks and PDs do enter into long-term inter-bank transactions with payment terms like payment of interest on quarterly / half yearly basis. If such quarterly / half yearly interest is payable on such day it would be effected on the next working day without any other levy. Where the 2nd leg of the transaction cannot be performed, the repayment date will be extended by the number of days of the unscheduled holiday at the contracted rate.

Certificate of Deposit and Commercial Paper-Primary Market Issuance: Where the 1st leg of the transaction in the primary market could not be performed because of the above event, the contract would be deemed to have been done for settlement on the following working day for the same period / original duration and at the same rate. All the other terms of the contract would remain unaltered. Thus, the due date would get extended.

Secondary Market Trade: In case of secondary market deals contract would be performed on the following working day at 'contracted rate of yield'.

Redemption: CDs and CPs due for redemption would be redeemed by the respective issuers by paying day/s interest at contracted interest / discount rate, if the holder is the first investor. If CD/CP is held by transferee (for secondary market trades) the issuer would pay the investor/holder in due course interest on the face value of the CD /CP at previous day's FIMMDA-NSE rate. The basis in all the above cases would be Actual/365 day basis.

Redemption on Saturday: Where the CDs and CPs are due for payment on Saturdays and if the holder of the paper is a non – bank entity (who cannot participate in inter – bank clearing) the holder cannot claim additional interest due to holder's inability to present / obtain the payment from issuer / IPA. However, the issuer might consider issuing the cheque a day in advance so as to enable the holder to present it, through its banker, in MICR Clearing (MICR Clearing is accounted for in the books of RBI as well as participating banks on the following working day). However, it is for the issuer of the cheque to ensure that the cheque is issued after HV timing so that the debit to the account of issuer takes place through MICR clearing only. The holders can consider presenting the CD or CP, on collection basis, through its banker for interbank cheque.

Redemption of T-Bills / Dated Government Securities: The decision regarding the value date of the credit of the amount to the account of the investor will be taken by the RBI.

Repo Transactions / LAF Transactions-In respect of one day Repo / LAF: If the ready leg cannot be settled the transaction would be deemed to be automatically cancelled.

In respect of one day Repo: If the forward leg cannot be settled, the settlement of forward leg could be extended to the following working day and the borrower of funds would pay interest to the lender of funds at the contracted rate of Repo interest for the resultant period of contract of Repo (including the extended period). The SGL for second leg will not be modified. Interest would be paid to the lender of money separately by a separate cheque. In case of trades settled through CCIL, any changes in consideration interest will be outside the system of CCIL and the counterparties will settle the difference mutually. In respect of Repo beyond one day duration (1st Leg): Where the transaction due for settlement

on an unscheduled holiday could not be settled the settlement of first leg would be on the following working day for the original number of days at the contracted rate. That is the second leg would get extended by one day. The settlement value of the trade would not undergo a change. In respect of Repo beyond one day duration (2nd Leg): In case of postponement of 2nd leg of the transaction, the SGL with 2nd leg consideration worked out on the basis of 1st leg of Repo, could be lodged, as it is. The difference amount payable by the borrower (Repoing Party) to the lender (Reverse Repo party) would be paid separately by way of cheque or other appropriate mode at Repo borrowing rate (basis actual / 365 days). In case of trades settled through CCIL, any changes in consideration / interest will be outside the system of CCIL and the counterparties will settle the difference mutually.

Declaration of unscheduled holiday due to specific problems:

As stated in earlier, on a strike / non-participation by a Bank / PD / FI or a group of Banks / PDs/ FIs etc., the counter party to such bank(s) / PD(s) / FI(s) would find it difficult to settle the transactions. The treatment of settlement of transactions with such bank(s) / PD(s) / FI(s) is given below. No contract would get cancelled automatically due to failure of one of any contracting party unless both the parties to contract cancel / modify with mutual consent. *This section is only applicable to trades not settled through CCIL.*

Call Money: Settlement of second leg would be done at the contracted rate for the extended period of settlement. In other words, additional interest for one / more day/s would be payable at contracted rate on amount borrowed. Call Money transactions due for settlement on 1st leg would get automatically cancelled as, transaction is by nature, overnight money.

Notice Money / Term Money (Inter-Bank): Where 1st leg of the transaction could not be performed because of the above, the contract would be deemed to have been done for settlement on the following working day for the same original period (number of days) and at same rate. The other terms of the contract would remain unaltered. Banks, PDs do enter long term inter-bank transactions with payment terms like payment of interest quarterly / half yearly. If such quarterly / half yearly interest is payable on such day it would be effected on the next working day without any other levy. Where the 2nd leg of the transaction (Re-payment) could not be performed such extension in terms of re-payment would be at the applicable contracted rate as applicable on the date of such event.

Certificate of Deposit and Commercial Paper- Primary Market Issuance: Where 1st leg of the transaction primary market could not be performed because of the above event, the contract would be deemed to have been done for the following working day for settlement for the same period / original duration and at same rate. In a way the other terms of the contract would remain unaltered. Thus, the due date would get extended.

Secondary Market Trade: In case of secondary market deals contract would be performed on the following working day at 'contracted rate of yield' (actually price to be worked as per market convention for every Rs.100/- up to four decimals – rounded off). Hence, the consideration would undergo a change.

Redemption: CDs and CPs due for redemption would be redeemed by the respective issuers by paying day/s interest at contracted interest / discount rate, if the holder is the first investor. If CD/CP is held by transferee (for secondary market trades) the issuer would pay the investor/holder in due course interest on the face value of the CD /CP at the MIBOR (FIMMDA-NSE) rate prevailing

on the date/s of such extension/s for such extended period. The basis in all the above cases would be 365 days a year. In respect of CP Redemption where the payee / payee's banker is on strike and as a result, it could not collect / present the cheque or submit CP/CD for redemption, the issuer would not be liable to pay interest. However, in respect of the issuer's default (bank / corporate) if the redemption cannot be made on the due date the issuer would be liable for the compensation as stated above.

Redemption of T-Bills / Zero Coupon Bonds: Since, the credit of dated securities is to be effected at RBI, these transactions will go unaffected.

Repo Transactions / LAF Transactions- In respect of LAF: In respect of LAF transactions due for settlement in 2nd leg the treatment of transaction would be decided by RBI and the same would be followed by the Bank / PD. In respect of first leg of transaction where the Bank / PD would have submitted bid the transaction would be required to be compulsory settled.

In respect of Market Repo (one day) 1st leg: The deal would get cancelled unless otherwise agreed upon by the parties mutually. In the event the lender of funds has a SLR problem, the lender would cover the SLR by doing reverse repo with any other market participant. The cost differential if any would be borne by the counter party (party which is not working).

In respect of Market Repo (one day) 2nd leg: Where the transaction due for settlement could not be settled due to unscheduled holiday, the transaction would be settled on the following working day without changing the gross consideration in the SGL, the borrowing party would pay the lender of money, one day's interest, at the respective day(s) FIMMDA NSE MIBOR. In case of trades settled through CCIL, the exchange of interest would happen bilaterally between the counterparties. In respect of Market Repo

beyond one day duration (1st leg): Where the transaction due for settlement on an unscheduled holiday could not be settled the settlement of first leg would be on the following working day for the original number of days at the contracted rate. That is the second leg would get extended by one day.

In respect of Repo beyond one day duration (2nd Leg): In case of postponement of 2nd leg of the transaction, the SGL with 2nd leg consideration worked out on the basis of 1st leg of Repo, could be lodged, as it is. The difference amount payable by the borrower (Repoing Party) to the lender (Reverse Repo party) would be paid separately by way of cheque or other appropriate mode at the FIMMDA NSE rate. In case of trades settled through CCIL, the exchange of interest would happen bilaterally between the counterparties.

Foreign Exchange (Forex) Markets-History

Currency trading and exchange first occurred in ancient times. Money-changing people, people helping others to change money and also taking a commission or charging a fee were living in the times of the Talmudic writings (*Biblical times*). These people used city-stalls, at feast times the temples instead. Money-changers were also in more recent ancient times silver-smiths and, or, gold-smiths. During the fourth century the Byzantium government kept a monopoly on the exchange of currency. Currency and exchange was also a crucial element of trade in the ancient world so that people could buy and sell items like food, pottery and raw materials. If a Greek coin held more gold than an Egyptian coin due to its size or content, then a merchant could trade fewer Greek gold coins for more Egyptian ones, or for more material goods. This is why the vast majority of world currencies are derivatives of a universally recognized standard like silver and gold.

During the fifteenth century the Medici family were required to open banks at foreign locations in order to exchange currencies to act for textile merchants. To facilitate trade the bank created the *nostro* (from Italian translated – "ours") account book which contained two columned entries showing amounts of foreign and local currencies, information pertaining to the keeping of an account with a foreign bank. During the 17th (or 18th) century Amsterdam maintained an active forex market. During 1704 foreign exchange took place between agents acting in the interests of the nations of England and Holland.

The firm *Alexander Brown & Sons* traded foreign currencies exchange sometime about 1850 and were a leading participant in this within U.S.A. During 1880 J.M. do Espírito Santo de Silva (Banco Espírito e Comercial de Lisboa) applied for and was given permission to begin to engage in a foreign exchange trading

business. 1880 is considered by one source to be the beginning of modern foreign exchange, significant for the fact of the beginning of the gold standard during the year. Prior to the first world war there was a much more limited control of international trade. Motivated by the outset of war countries abandoned the gold standard monetary system.

From 1899 to 1913, holdings of countries' foreign exchange increased at an annual rate of 10.8%, while holdings of gold increased at an annual rate of 6.3% between 1903 and 1913. At the time of the closing of the year 1913, nearly half of the world's foreign exchange was conducted using the Pound sterling. The number of foreign banks operating within the boundaries of London increased in the years from 1860 to 1913 from 3 to 71. In 1902 there were altogether two London foreign exchange brokers. In the earliest years of the twentieth century trade was most active in Paris, New York and Berlin, while Britain remained largely uninvolved in trade until 1914. Between 1919 and 1922 the employment of a foreign exchange brokers within London increased to 17, in 1924 there were 40 firms operating for the purposes of exchange. During the 1920s the occurrence of trade in London resembled more the modern manifestation, by 1928 forex trade was integral to the financial functioning of the city. Continental exchange controls, plus other factors, in Europe and Latin America, hampered any attempt at wholesale prosperity from trade for those of 1930's London.

During the 1920s foreign exchange the Kleinwort family were known to be the leaders of the market, Japhets, S, Montagu & Co. and Seligmans as significant participants still warrant recognition. In the year 1945 the nation of Ethiopias' government possessed a foreign exchange surplus.

After WWII, the Bretton Woods Accord was signed allowing currencies to fluctuate within a range of 1% to the currencies par.

In Japan the law was changed during 1954 by the Foreign Exchange Bank Law, so, the Bank of Tokyo was to become because of this the centre of foreign exchange by September of that year. Between 1954 and 1959 Japanese law was made to allow the inclusion of many more Occidental currencies in Japanese forex.

President Nixon is credited with ending the Bretton Woods Accord, and fixed rates of exchange, bringing about eventually a free-floating currency system. After the ceasing of the enactment of the *Bretton Woods Accord* (during 1971) the Smithsonian agreement allowed trading to range to 2%. During 1961–62 the amount of foreign operations by the U.S. of America's Federal Reserve was relatively low. Those involved in controlling exchange rates found the boundaries of the Agreement were not realistic and so ceased this in March 1973, when sometime afterward none of the major currencies were maintained with a capacity for conversion to gold, organisations relied instead on reserves of currency. During 1970 to 1973 the amount of trades occurring in the market increased three-fold. At some time (according to *Gandolfo* during February–March 1973) some of the markets' were "split", so a two tier currency market was subsequently introduced, with dual currency rates. This was abolished during March 1974.

Reuters introduced during June 1973 computer monitors, replacing the telephones and telex used previously for trading quotes. In fact 1973 marks the point to which nation-state, banking trade and controlled foreign exchange ended and complete floating, relatively free conditions of a market characteristic of the situation in contemporary times began (according to one source), although another states the first time a currency pair were given as an option for U.S.A. traders to purchase was during 1982, with additional currencies available by the next year.

On 1 January 1981 (as part of changes beginning during 1978) the Bank of China allowed certain domestic "enterprises" to participate in foreign exchange trading. Sometime during the months of 1981 the South Korean government ended forex controls and allowed free trade to occur for the first time. During 1988 the countries government accepted the IMF quota for international trade.

Intervention by European banks especially the Bundesbank influenced the forex market, on February the 27th 1985 particularly. The greatest proportion of all trades world-wide during 1987 were within the United Kingdom, slightly over one quarter, with the U.S. of America the nation with the second most places involved in trading.

During 1991 the republic of Iran changed international agreements with some countries from oil-barter to foreign exchange.

The foreign exchange market is the most liquid financial market in the world. Traders include large banks, central banks, institutional investors, currency speculators, corporations, governments, other financial institutions, and retail investors. The average daily turnover in the global foreign exchange and related markets is continuously growing. According to the 2010 Triennial Central Bank Survey, coordinated by the Bank for International Settlements, average daily turnover was US\$3.98 trillion in April 2010 (vs \$1.7 trillion in 1998). Of this \$3.98 trillion, \$1.5 trillion was spot transactions and \$2.5 trillion was traded in outright forwards, swaps and other derivatives.

In April 2010, trading in the United Kingdom accounted for 36.7% of the total, making it by far the most important centre for foreign exchange trading. Trading in the United States accounted for 17.9% and Japan accounted for 6.2%.

In April 2013, for the first time, Singapore surpassed Japan in average daily foreign-exchange trading volume with \$383 billion per day. So the rank became: the United Kingdom (41%), the United States (19%), Singapore (5.7%), Japan (5.6%) and Hong Kong (4.1%).

Types of Forex Markets

The foreign exchange currency markets allow buying and selling of various currencies all over the world. Business houses and banks can purchase currency in another country in order to do business in that particular company. The forex market also known as FX market has a worldwide presence and a network of different currency traders who work around the clock to complete these forex transactions, and their work drives the exchange rate for currencies around the world. Since the foreign exchange currency market is one of the biggest markets of the world, the market is sub divided into different kinds of foreign exchange market. There are different features and characteristics associated with the different foreign exchange markets have different trading characteristics. The main three types of foreign exchange markets- the spot foreign exchange market, the forward foreign exchange market and the future foreign exchange market are discussed below:

Spot Market

The spot foreign exchange markets are those in which the commodity is bought or sold for an immediate delivery or delivery in the very near future. The trades in the spot markets are settled on the spot. The spot foreign currency market is among the most popular foreign currency instrument around the globe, contributing about 37 percent of the total activity happening in all other types of foreign exchange markets. Spot forex currency

market is opposite to other kinds of foreign exchange market such as the future market, in which a set date is mentioned.

A spot deal in foreign exchange market comprises of a bilateral contract between two parties in which a party transfers a set amount of a particular given currency against the receipt of a specified amount of another currency from the counterparty, based on an agreed exchange rate, within two business days of the date when the deal gets finalized. However, there is an exception in case of Canadian dollar. In Canadian dollar, the Spot delivery happens the very next business day. The name spot does not mean that the currency exchange happens the same business day on which the deal is executed.

The most traded currency in spot markets in terms of volume is US dollar. The reason being U.S. dollar is the currency of reference. The other major most common currencies traded in spot markets are the euro, followed by the Japanese yen, the British pound, and the Swiss franc.

Forward Market

Forward markets are over-the-counter marketplace that sets the price of a financial instrument or asset for future delivery. Contracts entered into in the forward market are binding on the parties involved. Forward markets are used for trading a range of instruments including currencies and interest rates, as well as assets such as commodities and securities. While forward contracts, like futures contracts, may be used for both hedging and speculation, there are some notable differences between the two. Forward contracts can be customized to fit a customer's requirements, while futures contracts have standardized features in terms of their contract size and maturity.

The lack of standard features means that forward contracts seldom trade on exchanges, whereas futures contracts are generally exchange-listed. Since forward contracts generally tend to be large in size, the forward market is dominated by financial institutions, government bodies and large corporations.

Futures Market

Future Forex currency markets are specific types constitute the forward outright deals which in general take up small part of the foreign exchange currency trading market. Since future contracts are derivatives of spot price, they are also known as derivative instruments. They are specific with regard to the expiration date and the size of the trade amount. In general, the forward outright deals which get mature past the spot delivery date will mature on any valid date in the two countries whose currencies are being traded, standardized amounts of foreign currency futures mature only on the third Wednesday of March, June, September, and December.

Although the futures and spot markets trade closely together, certain differences between the two occur, thus giving away the arbitraging opportunities. Gaps, volume, and open interest are important technical analysis tools solely available in the futures markets. Because of these benefits, currency futures trading regularly attract a large number of forex traders into this market. The most common pages regarding future markets are available with Reuters, Bridge, Telerate, and Bloomberg. The rates are presented on composite pages by the Telerate, while the currency futures are represented on individual pages showing the convergence between the futures and spot prices by Reuters and Bloomberg.

Liberalization of exchange control regime

India, after years of low economic growth and after facing a financial crisis in 1991, has had a dramatic change in economic growth: the real GDP growth was on average 6.5% in 1990-2006, while it was 3.1% in 1971-1980 and 4.7% in 1981-1990. Although India still has an enormous lack of infra-structure, investment rate has increased from around 22% in the first half of the 1990s to around 24% during the 2000s. This good economic performance has been the result, among other factors, of the enormous potential of its domestic consumer market, the existence of a segment of well-qualified workers, the strong productivity growth (more than 3.5% over the course of the 1990s), the management of a well-coordinated economic policy, and the implementation of economic reforms. Capital account liberalisation has been part of a broad-based programme of economic reform, which included the abolishment of industrial license, the sharp reduction in the import taxes, liberalisation of the transactions related to the current account and a more limited liberalisation of the capital flows related to the capital account.

Economic liberalisation accelerated after the external debt crisis of 1991, when *rupee*, the domestic currency, was depreciated in two steps by almost 20% vis-à-vis the US dollar; liberalisation began with a dramatic process of trade liberalisation; as a result, the imports tariffs reduced from 87.0% on average in 1991 to 25.0% on average in 1997. Under the context of economic reform, capital account has been gradually liberalised and the exchange rate regime changed from a pegged exchange rate to a managed floating exchange regime. This change began with the transition of a managed floating related to basket of currencies to a dual exchange rate regime in March 1992. Finally, India adopted a floating and unified exchange rate regime in March 1993. The change in the exchange rate regime was followed step-by-step by flexibility on current account transactions that resulted in the

acceptance of full convertibility of current account in August 1994, which is the formal acceptance of the obligations of the IMF's Article VII. Although India adopted formally a floating exchange regime, in practice it is a quasi-managed float where the Reserve Bank of India (RBI) plays a crucial role in the foreign exchange market. Indeed, RBI has been an important player in the foreign exchange market, acting to avoid that some big transactions in this market can increase the exchange rate volatility, and at the same time seeking to affect the real effective exchange rate trajectory in the long run. For this purpose, RBI makes use of a very large range of tools operating in the spot and derivative markets, and even making use of administered measures. Such management has been possible due to the existence of extensive capital controls that result in a limited integration into international financial markets.

Compared to other countries that adopted floating exchange regime, the volatility of nominal exchange rate has been lower in India. Exchange rate has been used in India, combined with other extra-exchange rate tools, to absorb external shocks. As a general trend, nominal exchange rate has been gradually devaluated since 1996. Real effective exchange rate has been most time stable, while recently there is a gradual appreciation trend. Indeed, during the 1990s RBI followed a PPP rule whereby the nominal exchange rate was indexed to the price level to target the real exchange rate. Since the end of the 1990s, exchange rate policy has begun to change a little the course, shifting from stabilizing the exchange rate towards a more flexible rate regime with no fixed target, but still concerned in curbing excessive volatility and calibrating temporary mismatches in the demand and supply of foreign exchange.

As we have already stressed, after 1991 external debt crisis, India began a gradual but rapid process of liberalisation of current account that included the end of the foreign exchange budget and

the elimination of controls on current transactions. Although some norms related to long term capital flows have been loosened, including the limits of ownership share related to foreign direct investment, short term capital controls are still significant. The approach to capital account liberalisation in India has been cautious: what was liberalised has been specified while everything else remained restricted or prohibited. The contours of liberalisation were in large part shaped by the lessons of the 1991 external debt crisis – mainly problems related to roll over short-term debt and capital flight due to deposits withdrawals by non-resident Indian.

The Indian approach of gradual and limited liberalisation of capital account has emphasized opening up of the economy to foreign direct investment and portfolio equity investment, instead of external debt, with the objective to reduce the country's vulnerability to external crises by reducing reliance on volatile short-term debt flows that characterized the 1980s. First, concerning capital inflows, financial liberalisation began with a more flexible policy related to foreign direct investment (FDI) in July 1991 when FDI with up to 51% equity was to receive automatic approval in 35 selected high priority industries subject only to a registration procedure with the RBI, while access through the automatic route has been progressively enlarged over time. Second, liberalisation was extended to portfolio investment in September 1992, when foreign institutional investors were allowed to invest in the domestic capital market, first in the secondary market for equity subject a ceiling of 5% and later in the primary market (maximum limit of 15% of the new issue). Third, liberalisation in the sphere of external commercial borrowings (ECBs) has been limited, selective and variable. Commercial borrowings require case by case approval from the government where the decision depends upon the amount borrowed, the maturity period and the proposed utilization. Deregulation of ECBs has been subject to annual ceilings decided on the basis of

the country's external debt and balance of payments position. Finally, concerning non-resident deposits, in order to avoid capital flight, Indian government reduced the interest rate differentials, so that interest rates offered to these deposits were gradually aligned with international rates, and RBI has no longer underwritten the exchange rate risk.

Capital controls in India have been well-designed and clearly effective in limiting measured capital flows. There has been a predominance of quantitative capital controls rather than market based, administratively enforced, and clearly demarcating the distinction between resident (with more strict controls) and non-resident transactions. On the other hand, there are more extensive controls on capital outflows and considerable liberalisation on capital inflows. In particular, capital outflows related to residents are more limited: while they are very restricted to individuals, for domestic firms capital outflows are possible within some limits stipulated by the government. More recently, restrictions on individuals and domestic corporates have been loosened to allow investments abroad.

Capital controls in India have also been dynamic, that is government tends to tight capital controls on outflows during speculative periods and to loose them after that. Due to the increase of foreign exchange reserves and the limits to accumulation of foreign debt (mostly short-term ones), most external vulnerability indicators show a remarkable and continuous improvement since 1991: the ratio current account over GDP has been below to -2.0%, and since 2001 the ratio has been positive, mainly due to the increase of services and income and current transfers.

Although the traditional external solvency indicator (external debt over exports) has gradually increased during the 1990s, the external indebtedness declined markedly, from a peak of 38% of GDP in 1992 to less than 25% in 1996, while the ratio income debt over exports declined sharply in the first-middle of the 1990s.

Furthermore, since 1993 the share of the long-term debt on the total external debt has been more than 90% - a clear evidence that the reorientation of capital account policy toward non-debt creating inflows and FDI since 1991 succeeded. Finally, the international reserves-to-imports ratio increased to more than 100% by 2002 compared to less than 40% in the beginning of the 1990s. Indeed international reserves rose from US\$ 30.2 billion in 1998 to US\$ 136.9 billion in 2005 – an increase of 453% in just seven years – due to a more aggressive RBI's exchange reserve accumulation policy. Summing up, the improvement of external vulnerability indexes in India resulted mainly from the low current account deficit, a declining external debt and the increasing level of foreign reserves.

The nature and the pace of capital account liberalisation exercised an influence on the dimensions and the composition of the private foreign capital inflows to, and outflows from, India – a shift from debt creating to non-debt creating capital flows. Capital flows has raised a great deal along the 1990s, followed by a sharp change in their composition: until 1993 there was a predominance of other investments (that include, among others item, non-resident Indian deposits – NRI and foreign loans) while other types of capital flows were almost non-existent; since 1994 capital flows have raised and diversified due the increase of portfolio investments, other investments and foreign direct investment. However, financial integration of the India economy into international capital markets has been still slow and limited: FDI has been increasing during 1990s, but it is low compared to other 'big' emerging countries; according to IMF, the ratio FDI over GDP in 2002 was 3.7% in China, 3.1% in Brazil, 2.1% in Mexico and only 0.6% in India.

Due to the adoption of a managed floating exchange regime, that has resulted in a stable nominal exchange rate, domestic interest rate has had a more unstable behaviour, probably because interest rate has been used as a tool to stabilize nominal exchange

rate and also due to non-sterilized operations related to foreign exchange accumulation policy.

It seems that in India capital controls have been used not only to reduce external vulnerability and to avoid currency crises, but also to drive a wedge between domestic and external interest rates in order to provide RBI discretion to achieve some monetary policy autonomy.

Regulatory environment – role of RBI, FEDAI and FIMMDA

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

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

Reserve Bank makes sales and purchases of foreign currency in the forex market, basically to even out lumpy demand or supply in the thin forex market; large lumpiness in demand is mainly on account of oil imports, leads and lags and external debt servicing on Government account.

Such sales and purchases are not governed by a predetermined target or band around the exchange rate. The essence of portfolio management of reserves by the Reserve Bank is to ensure safety, liquidity and optimisation of returns. The reserve management strategies are continuously reviewed by the Reserve Bank in consultation with Government.

Developmental role of FEDAI

When the Reserve Bank issues instructions, it is expected that the instructions are understood, interpreted and implemented in a uniform and customer-friendly manner by all ADs without building up system level stresses. In the absence of unambiguous clarity of instructions to the base-level official, the objectives of various measures initiated by the Reserve Bank may not yield the desired results. With the advent of FEMA, which aims at facilitating external trade and payments besides promoting orderly development and maintenance of forex market in India, the economy has been witnessing rapid liberalisations.

In such a scenario, FEDAI is playing a crucial role in monitoring the level of customer service and consumer protection provided by its members and ensuring to fill the gaps arising out of inadequate knowledge or operational bottlenecks.

FEDAI acts as a facilitating body and in consultation with Reserve Bank of India, frames rules / regulations for ADs in India for conduct of the foreign exchange business related transactions. Since FEDAI is the Association of the member Banks, it has been

issuing guidelines and rules to its member banks related to management of foreign exchange business from time to time.

Role of FIMMDA: The Fixed Income Money Market and Derivatives Association of India (FIMMDA) was established in May 1998. One of the main objectives of establishing FIMMDA was to recommend and implement healthy business practices, ethical code of conduct, standard principles and practices to be followed by the members in their dealing of securities. To provide a clear understanding of market conventions, practices and high levels of integrity by the individuals concerned in the market, FIMMDA has formulated and prescribed rules and regulations from time to time.

FIMMDA being a self-regulatory body has shown the expertise and direct market contacts to stay abreast of rapid changes in a complex industry. It has adopted and enforced its procedures and rules of conduct, using large network of market professionals, which contributes towards effective regulation. Indeed, FIMMDA has shown considerable depth and expertise regarding market operations and practices, and has been able to respond more quickly and flexibly to the changing market conditions.

The self-policing method of FIMMDA increases motivation of market participants, who contribute to the development of industry best practices and standards. FIMMDA has helped to develop a strong compliance culture in the institutions within their ambit. It has ensured better information sharing among participants, which is of immense value, as it contributes to coordination of market oversight and reduces systemic risks.

Derivatives

The term 'Derivative' stands for a contract whose price is derived from or is dependent upon an underlying asset. The underlying asset could be a financial asset such as currency, stock and

market index, an interest bearing security or a physical commodity. According to the Securities Contract Regulation Act, (1956) the term “derivative” includes:

- (i) a security derived from a debt instrument, share, loan, whether secured or unsecured, risk instrument or contract for differences or any other form of security;
- (ii) a contract which derives its value from the prices, or index of prices, of underlying securities.

Derivatives comprise four basic contracts namely Forwards, Futures, Options and Swaps. We have already discussed Forwards, Futures and Options earlier in the module. Now let us look at Swaps:

Swaps are private agreements between two parties to exchange cash flows in the future according to a prearranged formula. They can be regarded as portfolios of forward contracts.

The two commonly used swaps are:

- Interest rate swaps: These entail swapping only the interest related cash flows between the parties in the same currency.
- Currency swaps: These entail swapping both principal and interest between the parties, with the cash flows in one direction being in a different currency than those in the opposite direction.

A foreign exchange swap is usually a combination of a spot and a forward transaction, entered into simultaneously. Swaps are mostly inter-bank contracts and are neutral with respect to position as well as impact on the volatility of the exchange rate. Swaps do not have a separate regulatory framework and are covered by the foreign exchange regulations applicable to forward / spot contracts.

A Foreign currency swap is an agreement between two parties to exchange cash flows (viz., the principal and/or interest payments) of a loan in one currency for equivalent cash flows of an equal (in net present value) loan in another. Globally, foreign currency swaps constitute a large segment of foreign currency derivatives. Resident Indians may enter into foreign currency-rupee swap within regulatory limits.

Over the Counter (OTC) Derivative Contracts

Derivatives that trade on an exchange are called exchange traded derivatives, whereas privately negotiated derivative contracts are called OTC contracts. The OTC derivatives markets have the following features compared to exchange-traded derivatives: (i) The management of counter-party (credit) risk is decentralized and located within individual institutions, (ii) There are no formal centralized limits on individual positions, leverage, or margining, (iii) There are no formal rules for risk and burden-sharing, (iv) There are no formal rules or mechanisms for ensuring market stability and integrity, and for safeguarding the collective interests of market participants, and (iv) The OTC contracts are generally not regulated by a regulatory authority and the exchange's self-regulatory organization. They are however, affected indirectly by national legal systems, banking supervision and market surveillance.

Some uses of derivatives

There is always a misconception that derivatives are used for speculation. While speculators can use, and do use, derivatives, they can also be used – and are used – by businessmen and investors to *hedge* their risks.

There can be a variety of uses of derivatives. We will discuss a few of them. We will use simple examples for an easy understanding of the subject.

A manufacturer Mr. X has received order for supply of his products after six months. Price of the product has been fixed. Production of goods will start after four months. He fears that, in case the price of raw material goes up in the meanwhile, he will suffer a loss on the order. To protect himself against the possible risk, he buys the raw material in the '*futures*' market for delivery and payment after four months at an agreed price, say, Rs. 100 per unit. Let us take the case of another person Mr. Y who produces the raw material. He does not have advance orders. He knows that his produce will be ready after four months. He roughly knows the estimated cost of his produce. He does not know what will be the price of his produce after four months. If the price goes down, he will suffer a loss. To protect himself against the possible loss, he makes a 'future' sale of his produce, at an agreed price, say, Rs. 100 per unit. At the end of four months, Mr. Y delivers the produce and receives payment at the rate of Rs. 100 per unit of contracted quantity. The actual price may be more or less than the contracted price at the end of contracted period. A businessman may not be interested in such speculative gains or losses. His main concern is to make profits from his main business and not through rise and fall of prices. He wants to work with peace of mind and some assurance.

Let us take another example. Suppose a person is going to retire after one year. He wants to invest a part of his retirement dues to be received after one year, in shares. He feels that share prices ruling at present are quite reasonable, and after one year the prices might go up. He enters a '*futures*' contract for one year to buy the shares at an agreed price of, say, Rs. 100 per share. After one year, he will make payment at the contracted rate and will

receive the shares. There is another person who holds investments in shares. He desires to sell his investments after one year, for use for his daughter's marriage. He is afraid that if prices of his investments fall after one year, he will suffer a loss. He cannot sell them now as he has pledged them with a bank as security for a loan. He hedges the risk by selling his investments through a 'futures' contract for one year at a contracted price of, say, Rs. 100 per share.

In the above two examples, at the end of one year, ruling price may be more than Rs. 100 or less than Rs. 100. If the price is higher (say, Rs. 125), the buyer is gainer for he pays Rs. 100 and gets shares worth Rs. 125, and the seller is the loser for he gets Rs. 100 for shares worth Rs. 125 at the time of delivery. On the other hand, in case the price is lower (say, Rs. 75), the purchaser is loser; and the seller is the gainer. There is a method to cut a part of such loss by buying a 'futures' contract with an '*option*', on payment of a fee. The option gives a right to the buyer/seller to walk out the 'futures' contract. Naturally, a person will exercise option only if beneficial. In the above example, suppose the option fee is Rs. 10, and the price of shares at the time of exercise is Rs. 75, it will be advantageous for the buyer of shares to exercise the option. Thus, if he directly buys shares in the spot market, his cost will be only Rs. 85 (Rs. 75 + Rs. 10 fee) as against Rs. 100 which he had to pay under the 'futures' contract. In case the current price at the time of delivery is higher (say, Rs. 125) than the contracted price (Rs. 100) plus option fee, the seller of shares will be similarly benefited in opting out of the futures contract, for he can realize a higher price in the spot market.

We have noticed from the earlier discussion that one's gain is another's loss. That is why derivatives are a '*zero sum game*'. The mechanism helps in distribution of risks among the market players.

The above retiring gentleman also wants to invest a part of his retirement dues in bonds. He is quite comfortable with the present level of yield. He hedges the risk of fall in yield by entering into a '*forward rate agreement*' of one year at an agreed rate. At the time of actual investment after one year, he will get the contracted yield on his investment.

Let us see one of the uses of '*interest rate swap*'. Suppose a financial institution has some floating rate liabilities, but all its assets are on fixed rate basis. In case the floating rate goes up, it will be a loser. The institution can protect its position by *swapping* (exchanging) floating rate on its liabilities with fixed rate. There may be another person holding floating rate assets. He fears that the floating rate may go down in future. He may exchange his floating rate receipts with fixed rate receipts.

An example of '*currency swap*': Suppose a person is holding one million Dollars. He does not need them now. But, he will need them after six months for purchase of machinery. His calculation is that he can earn a better return on his funds by investing in Rupee bonds. What he does is that he sells the Dollars in spot market for Rupees. Simultaneously, he buys Dollars '*forward*' for delivery after six months. At the end of six months, he sells his Rupee bonds and takes delivery of Dollars against payment of Rupees. He makes payment for the machine in Dollars. (The difference between '*forwards*' and '*futures*' is that while the former take place between two counter parties in the OTC market, the latter are transacted on stock exchanges.)

It is also possible to hedge the risk of default on a bond/loan through a '*credit derivative*'.

So far, we have seen examples of derivatives for hedging business/investment risks. Derivatives can also be undertaken for *speculation*. Speculators, as you know, are of two types. One type

is of optimistic variety, and sees a rise in prices in future. He is known as 'bull'. The other type is a pessimist, and he sees a fall in prices, in future. He is known as 'bear'. They undertake 'futures' transactions with the intention of making gains through difference in contracted prices and future prices. If, in future, their expectations turn out to be true, they gain. If not, they lose. Of course, they may limit their losses through options.

PART-V

Treasury Products& Regulatory Provisions

In this module we will discuss the widely used treasury products and regulatory provision affecting the treasury environment.

Commercial Paper (CP):

Commercial paper is an unsecured promissory note with a fixed maturity ranging from 7 days to 1 year. Commercial Paper is a money market security issued (sold) by highly rated corporate borrowers, primary dealers and large financial institutions to raise funds to meet their short term debt obligations, and is only backed by the issuers' promise to pay the face amount on the maturity date specified on the note.

Since it is not backed by collateral, only firms with excellent credit ratings from a recognized rating agency are able to sell their commercial paper at a reasonable price. Commercial paper is usually sold at a discount to the face value and is redeemed at the face value at the maturity. The difference between the purchase price (i.e., discounted face value) and the face value is the return earned by the buyer of the commercial paper.

Treasury Bills:

Treasury Bills or T- bills are Money Market instruments issued only by Governments. T-Bills are issued to finance the short term requirements of the Government. T-Bills are discounted securities, implying that they are issued at a discount to face value. The return to the investor is the difference between the maturity value and the issue price.

There are different types of Treasury bills based on the maturity period such as 3 -month, 12-month Treasury bills etc. In India, at

present, the active Treasury Bills are the 91 -days and 364-days Treasury bills.

Investment in T-Bills has the following advantages over other forms of investments such as bank deposits:

- Zero default risk, since it is a sovereign paper
- High liquidity
- Transparency and simplified settlement
- High degree of tradability and active secondary market (which help the investors in meeting unplanned fund requirements)

Certificate of Deposit (CD):

With a view to further widening the range of money market instruments and giving investors greater flexibility in deployment of their short term surplus funds, Certificate of Deposits (CDs) were introduced in India in 1989. They are essentially securitized short term time deposits issued by banks and all-India Financial Institutions during the period of tight liquidity at relatively higher discount rates as compared to term deposits.

Certificates of Deposits (CDs) are short-term borrowings by banks. CDs differ from term deposit because they involve the creation of paper, and hence have the facility for transfer and multiple ownerships before maturity. CD rates are usually higher than the term deposit rates, due to the low transactions costs. Banks use the CDs for borrowing during a credit pick-up, to the extent of shortage in incremental deposits. Most CDs are held until maturity, and there is limited secondary market activity. Certificate of Deposit (CDs) is a negotiable money market instrument and issued in dematerialized form or as a Usance Promissory Note, for funds deposited at a bank or other eligible financial institution for a specified time period. Guidelines for

issue of CDs are presently governed by various directives issued by the Reserve Bank of India.

Factoring:

Management of receivables has been one of the major aspects of working capital management besides cash and inventory management. As the accounts receivable amount to the blocking of the firm's funds, the need for an outlet to impart these liquidity is obvious. Other than the lag between the date of sale and the date of receipt of dues, collection of receivables involves a cost of inconvenience associated with tapping every individual debtor. Thus, if the firm could contract out the collection of accounts receivable it would be saved from many things such as administration of sales ledger, collection of debt and the management of associated risk of bad-debts etc.

Factoring is a type of financial service which involves an outright sale of the receivables of a firm to a financial institution called the factor which specialises in the management of trade credit. Under a typical factoring arrangement, a factor collects the accounts on the due dates, effects payments to the firm on these dates (irrespective of whether the customers have paid or not) and also assumes the credit risks associated with the collection of the accounts. As such factoring is nothing but a substitute for in-house management of receivables. A factor not only enables a firm to get rid of the work involved in handling the credit and collection of receivables, but also in placing its sales *in effect* on cash basis.

Origin

Factoring has a long and fascinating history and the word factor has its etymological origin in the Latin word "Facere" which means to make or do, i.e. to get things done. During 15th and 16th centuries, factors were appointed by manufacturers in England, France and Spain in order to arrange for sales and distribution of

then goods in the colonies in the New World. The first credit factors in modern times were textile agents in the eighteenth century. Thus, the earlier factors used to provide services under marketing, distribution, administration and finance. From 1920s however the factors began to specialise in performing the credit and collection function for their clients.

Definition and functions

“Factoring may be defined as a relationship between the financial institution or banker (‘factor’) and a business concern (the ‘supplier’) selling goods or providing services to trade customers (the customer) whereby the factor purchases book debts with or without recourse (‘with a recourse’ means that in the event of bad debts factor can approach the ‘supplier’) to the supplier and in relationship thereto controls the credit extended to the customers and administers the sales ledger of the supplier.”

Though the purchase of book debts is fundamental to the functioning of factoring, there are a number of functions associated with this unique financial service. A proper appreciation of these functions would enable one to distinguish it from the other sources of finance against receivables. They are:

- Assumption of credit and collection function;
- Credit protection;
- Encashing of receivables;
- collateral functions such as:
 - (a) loans on inventory,
 - (b) loans on fixed assets, other security and on open credit,
 - (c) advisory services to clients.

Factoring vs. Accounts Receivable Loans

Accounts receivable loan is simply a loan secured by a firm’s accounts receivable by way of hypothecation or assignment of such receivables with the power to collect the debts under a power of attorney. In case of factoring however, there is an outright sale

of receivables. Thus in case of the former, the bank may debit client's account for 'handling charges' if the debt turns out to be bad as against non-recourse factoring.

Mechanics of factoring

Factoring offers a very flexible mode of cash generation against receivables. Once a line of credit is established, availability of cash is directly geared to sales so that as sales increase so does the availability of finance. The dynamics of factoring comprises of the sequence of events outlined in figure.

- (1) Seller (client) negotiates with the factor for establishing factoring relationship.
- (2) Seller requests credit check on buyer (client).
- (3) Factor checks credit credentials and approves buyer. For each approved buyer a credit limit and period of credit are fixed.
- (4) Seller sells goods to buyer.
- (5) Seller sends invoice to factor. The invoice is accounted in the buyers account in the factor's sales ledger.
- (6) Factor sends copy of the invoice to buyer.
- (7) Factor advises the amount to which seller is entitled after retaining a margin, say 20%, the residual amount paid later.
- (8) On expiry of the agreed credit period, buyer makes payment of invoice to the factor.
- (9) Factor pays the residual amount to seller.

Forfeiting:

Forfeiting is purchasing by discounting the receivables secured with payment bank Guarantees and Letters of Credit with differed payment, that are due for payment on a future date and that arise from delivery of goods and services. It is a method of export trade financing, especially when dealing in capital goods (which have long payment periods) or with high risk countries. In forfeiting, a

bank advances cash to an exporter against invoices or promissory notes guaranteed by the importer's bank. The amount advanced is always 'without recourse' to the exporter, and is less than the invoice or note amount as it is discounted by the bank. The discount rates depend on the terms of the invoice/note and the level of the associated risk. The Bank primarily forfeits receivables of export companies under export Letters of Credit issued in their favor with differed payment clause, where the Bank is an advising Bank.

Bill discounting:

While discounting a bill, the Bank buys the bill (i.e. Bill of Exchange or Promissory Note) before it is due and credits the value of the bill after a discount charge to the customer's account. The transaction is practically an advance against the security of the bill and the discount represents the interest on the advance from the date of purchase of the bill until it is due for payment.

Under certain circumstances, the Bank may discount a bill of exchange instead of negotiating them. The amount the Bank advances also depends on past record and reputation of the drawee.

Usually, the Bank may want some conditions to be fulfilled to be able to discount a bill:

- A bill must be a usance bill
- It must have been accepted and bear at least two good signatures (e.g. of reputable individuals, companies or banks etc.)
- The Bank will normally only discount trade bills
- Where a usance bill is drawn at a fixed period after sight, the bill must be accepted to establish the maturity

The advising or confirming bank will hide the reimbursement instruction from the beneficiary so that his bank must present the documents to the nominated bank for negotiation in order to obtain payment under the DC terms.

Bills which are financed by the receiving branch, whether drawn under a DC or not, are treated as Bills Receivable by both the remitting branch and the receiving branches.

Private equity:

Private equity or PE is the provision of medium to long-term financing to a company in exchange for an equity stake, usually in an unlisted and so hard-to-trade company. In the past typical PE, targets were young, high-growth companies, but this has changed recently as more innovative financing mechanisms are used together with PE.

The motivation for private equity is that the public equity market sometimes finds it difficult to assess new companies' growth prospects. This is a classic *agency problem*: most investors need to do significant due diligence on these situations, but it is too expensive for everyone to do this separately. As there is no trusted source investors can all go for this information, no investor ends up buying the stock, or those that do put a significant discount on it for the information they do not have. A single experienced owner of a large stake can afford to do the necessary due diligence and hence to pay more for the stock than a multitude of smaller players.

Venture capital developed originally to fund high growth, high risk opportunities in unlisted companies. Typical situations in the early days of private equity were:

- New technology companies;
- Firms with new marketing concepts;

- Spin off s or startups designed to exploit a new product; or potentially high growth spin off s of physical assets, brands or ideas from existing corporates.

Methodology

PE investors typically take a significant, although not necessarily controlling equity stake. They typically prefer situations with:

- Good existing staff. As the industry phrase goes, '*bet the jockey, not the horse*';
- Products or processes which have passed through at least the early prototype stage and are adequately protected by patents or copyrights;
- The potential of an exit within a few years via either an initial public offering or a trade sale;
- The opportunity for the venture capitalist to make a value added contribution to the management and/or funding of the company.

Private equity terminology

Some financial institutions use the term *principal investment* for their PE activities, as the bank's capital is committed (sometimes alongside the bank's clients). One motivation here is to lock in investment banking fees once the private company is taken public or sold. Principal investment activities were very profitable in the high-tech boom of the late 1990s, but this form of proprietary risk taking is going out of favour as the new Basel II regulatory capital rules considerably increase the capital required for them. The stages of PE are typically called *seed*, *early stage*, *development* and *buyout*. A seed stage business is oft en just an idea. Many PE players are reluctant to invest at this stage: funding instead typically comes from the management team, bank loan finance, and private individuals. An early-stage business is a company that

has been in business for a short period of time, but may not have a product ready for market and probably will not have a sales history. Some PE players will get involved at this stage, but most prefer to wait until the business has proved its concept and needs further funding for development or marketing, that is, the development phase. Finally, buyout-stage firms are situations where an existing firm, often a struggling one, is taken private. Sometimes this happens because the management team or others believe that a restructuring is best achieved away from the scrutiny of the public market, sometimes because this is the easiest way of obtaining funding for corporate development or restructuring and sometimes because a dominant owner believes that the public market does not properly value the firm.

In Europe, the term *venture capital* is used to cover all stages of PE investment. In the United States in contrast, 'venture capital' refers only to investments in seed, early and development stages.

Portfolio Management Services (PMS): guides the investor in a method of selecting the best available securities that will provide the expected rate of return for any given degree of risk and also to mitigate (reduce) the risks. It is a strategic decision which is addressed by the top-level managers.

Portfolio management includes a range of professional services to manage an individual's and company's securities, such as stocks and bonds, and other assets, such as real estate. The management is executed in accordance with a specific investment goal and investment profile and takes into consideration the level of risk, diversification, period of investment and maturity (i.e. when the returns are needed or desired) that the investor seeks. In cases of sophisticated portfolio management, services may include research, financial analysis, and asset valuation, monitoring and reporting.

The fee for portfolio management services can vary widely among management companies. In terms of structure, fees may include

an asset-based management fee, which is calculated on the basis of the asset valuation at the beginning of the service. Since this fee is guaranteed to the manager, it is typically a lower amount. Alternatively, the fee may be tied to profits earned by the portfolio manager for the owner. In such cases, the risk-based fee is usually much higher.

Objectives of Portfolio Management

The main objectives of portfolio management are as follows:-

1. **Security of Principal Investment:** Investment safety or minimization of risks is one of the most important objectives of portfolio management. Portfolio management not only involves keeping the investment intact but also contributes towards the growth of its purchasing power over the period. The motive of a financial portfolio management is to ensure that the investment is absolutely safe. Other factors such as income, growth, etc., are considered only after the safety of investment is ensured.
2. **Consistency of Returns:** Portfolio management also ensures to provide the stability of returns by reinvesting the same earned returns in profitable and good portfolios. The portfolio helps to yield steady returns. The earned returns should compensate the opportunity cost of the funds invested.
3. **Capital Growth:** Portfolio management guarantees the growth of capital by reinvesting in growth securities or by the purchase of the growth securities. A portfolio shall appreciate in value, in order to safeguard the investor from any erosion in purchasing power due to inflation and other economic factors. A portfolio must consist of those investments, which tend to appreciate in real value after adjusting for inflation.
4. **Marketability:** Portfolio management ensures the flexibility to the investment portfolio. A portfolio consists of such investment, which can be marketed and traded. Suppose, if your portfolio

contains too many unlisted or inactive shares, then there would be problems to do trading like switching from one investment to another. It is always recommended to invest only in those shares and securities which are listed on major stock exchanges, and also, which are actively traded.

5. **Liquidity:** Portfolio management is planned in such a way that it facilitates to take maximum advantage of various good opportunities upcoming in the market. The portfolio should always ensure that there are enough funds available at short notice to take care of the investor's liquidity requirements.
6. **Diversification of Portfolio:** Portfolio management is purposely designed to reduce the risk of loss of capital and/or income by investing in different types of securities available in a wide range of industries. The investors shall be aware of the fact that there is no such thing as a zero risk investment. More over relatively low risk investment give correspondingly a lower return to their financial portfolio.
7. **Favorable Tax Status:** Portfolio management is planned in such a way to increase the effective yield an investor gets from his surplus invested funds. By minimizing the tax burden, yield can be effectively improved. A good portfolio should give a favorable tax shelter to the investors. The portfolio should be evaluated after considering income tax, capital gains tax, and other taxes.

The objectives of portfolio management are applicable to all financial portfolios. These objectives, if considered, results in a proper analytical approach towards the growth of the portfolio. Furthermore, overall risk needs to be maintained at the acceptable level by developing a balanced and efficient portfolio.

Credit Rating Agencies

Credit rating is a well-established enterprise in most economies, including India, where specialized agencies have evolved to create extensive methods of analysis of information, and provide ratings to borrowers. The acceptance of these ratings by lenders crucially hinges on the independence of the rating agency, and the expertise it brings to bear on the process of credit rating. In the recent years, the emphasis on internal credit risk evaluation systems has grown. While European and Japanese lending institutions have always emphasized an internal rating system, over external ratings, in countries outside these regions too, there is a parallel internal rating system being created in the recent years. While credit evaluation and monitoring have been traditionally in the banking domain, the formal conversion of these into rating systems is new. The impetus has been the supervisory risk assessment and early warning systems, now required by the BIS, which emphasizes the need for structured risk assessment systems.

There are 6 SEBI registered credit rating agencies in India, namely, CRISIL, ICRA, CARE, Fitch, Brickwork and SMERA which provide a rating on various categories of debt instruments. Credit rating agencies assess the credit quality of debt issuers, on the basis of a number of quantitative and qualitative factors, employing specialized analysts, who focus on industry categories in which they have specialized knowledge. Apart from information provided by the borrower, these analysts independently collect and assess information, about the industry and company variables, and performance of peer group companies, and collate such data. Rating essentially involves the translation of information variables into a ranking, which places the company in a slot that describes the ability and willingness of the company to service the instrument proposed to be issued.

Regulatory framework for Public Issue of Debt Instruments in India

Issuance of Debt Securities in India is governed by **SEBI (Issue and listing of Debt Securities) regulations, 2008**.

In exercise of the powers under section 30 of the Securities and Exchange Board of India Act, 1992 (15 of 1992), the Board has made regulations to amend the Securities and Exchange Board of India (Issue and Listing of Debt Securities) Regulations, 2008 and these regulations shall be called the Securities and Exchange Board of India (Issue and Listing of Debt Securities) (Amendment) Regulations, 2012 have come in to effect from 13th Nov'12.

General Conditions

1. No issuer should make any public issue of debt securities if as on the date of filing of draft offer document and final offer document as provided in these regulations, the issuer or the person in control of the issuer, or its promoter, has been restrained or prohibited or debarred by the Board from accessing the securities market or dealing in securities and such direction or order is in force.
2. The following conditions have to be satisfied by an issuer for making any public issue of debt securities as on the date of filing of draft offer document and final offer document.
 - (i) If the issuer has made an application to more than one recognized stock exchange, the issuer is required to choose one of them as the designated stock exchange. Further, where any of such stock exchanges have nationwide trading terminals, the issuer should choose one of them as designated stock exchange. For any subsequent public issue, the issuer may choose a

different stock exchange subject to the requirements of this regulation.

- (ii) The issuer has to obtain in-principle approval for listing of its debt securities on the recognized stock exchanges where the application for listing has been made.
 - (iii) Credit rating has be obtained from at least one credit rating agency registered with SEBI and is disclosed in the offer document. If the credit ratings have been obtained from more than one credit rating agency, then all ratings including the unaccepted ratings have to be disclosed in the offer document.
 - (iv) It has to enter into an arrangement with a depository registered with SEBI for dematerialization of debt securities that are proposed to be issued to the public in accordance with the Depositories Act 1996 and regulations made thereunder.
3. The issuer should appoint one or more merchant bankers registered with SEBI at least one of whom should be a lead merchant banker.
 4. The issuer should appoint one or more debenture trustees in accordance with the provisions of section 117 B of the Companies Act, 1956 and SEBI (Debenture Trustee) Regulations, 1993.
 5. The issuer should not issue debt securities for providing loan to or acquisition of shares of any person who is part of the same group or who is under the same management.

Filing of Draft Offer Document

No issuer should make a public issue of debt securities unless a draft of offer document has been filed with the designated stock exchange through the lead merchant banker. The draft offer document filed with the stock exchange has to be made public by

posting the same on the website of designated stock exchange for seeking public comments for a period of seven working days from the date of filing the draft offer document with such exchange. The draft offer document may also be displayed on the website of the issuer, merchant bankers. The lead merchant bankers should ensure that the draft offer document clearly specifies the names and contact particulars of the compliance officer of the lead merchant banker and the issuer including the postal and email address, telephone and fax numbers. The lead merchant banker should also ensure that all comments received on the draft offer document are suitably addressed prior to the filing of the offer document with the Registrar of Companies. A copy of the draft and final offer document should be forwarded to SEBI for its records, simultaneously with filing of these documents with the designated stock exchanges. The lead merchant bankers should prior to filing of the offer document with the Registrar of Companies, furnish to SEBI a due diligence certificate as per the format provided in Schedule II of SEBI (Issue and Listing of Debt Securities) Regulations, 2008.

Electronic Issuance

An issuer proposing to issue debt securities to the public through the on-line system of the designated stock exchange should comply with the relevant applicable requirements as may be specified by SEBI.

Price Discovery through Book Building

The issuer may determine the price of debt securities in consultation with the lead merchant banker and the issue may be at fixed price or the price may be determined through the book

building process in accordance with the procedure as may be specified by SEBI.

Minimum Subscription

The issuer may decide the amount of minimum subscription which it seeks to raise by issue of debt securities and disclose the same in the offer document. In the event of non-receipt of minimum subscription all application moneys received in the public issue shall be refunded forthwith to the applicants.

Listing of Debt Securities

An issuer desirous of making an offer of debt securities to the public has to make an application for listing to one or more recognized stock exchanges in terms of sub-section (1) of section 40 of the Companies Act Companies Act 2013. The issuer has to comply with the conditions of listing of such debt securities as specified in the Listing Agreement with the Stock exchanges where such debt securities are sought to be listed.

- Where a prospectus states that an application under sub-section (1) has been made, such prospectus shall also state the name or names of the stock exchange in which the securities shall be dealt with.
- All monies received on application from the public for subscription to the securities shall be kept in a separate bank account in a scheduled bank and shall not be utilized for any purpose other than—

(a) For adjustment against allotment of securities where the securities have been permitted to be dealt with in the stock exchange or stock exchanges specified in the prospectus; or

(b) For the repayment of monies within the time specified by the Securities and Exchange Board, received from applicants in pursuance of the prospectus, where the company is for any other reason unable to allot securities.

- Any condition purporting to require or bind any applicant for securities to waive compliance with any of the requirements of this section shall be void.
- If a default is made in complying with the provisions of this section, the company shall be punishable with a fine which shall not be less than five lakh rupees but which may extend to fifty lakh rupees and every officer of the company who is in default shall be punishable with imprisonment for a term which may extend to one year or with fine which shall not be less than fifty thousand rupees but which may extend to three lakh rupees, or with both.
- A company may pay commission to any person in connection with the subscription to its securities subject to such conditions as may be prescribed.

Private Placement of Securities

Private Placement of Securities can be defined as any offer of securities or invitation to subscribe securities to a select group of persons by a company (other than by way of public offer) through issue of a private placement offer letter and which satisfies the conditions specified to section 42 of The Companies Act 2013.

Conditions for listing of debt securities issued on Private Placement Basis

Section 42 of Companies Act 2013 provides the framework for subscription of securities on Private Placement Basis. An issuer may list its debt securities issued on private placement basis on a recognized stock exchange provided following conditions are duly adhered to:

- (1) Without prejudice to the provisions of section 26, a company may, subject to the provisions of this section, make private placement through issue of a private placement offer letter.
- (2) Subject to sub-section (1), the offer of securities or invitation to subscribe securities, shall be made to such number of persons not exceeding fifty or such higher number as may be prescribed, [excluding qualified institutional buyers and employees of the company being offered securities under a scheme of employees stock option as per provisions of clause (b) of sub-section (1) of section 62], in a financial year and on such conditions (including the form and manner of private placement) as may be prescribed.

Explanation I.—If a company, listed or unlisted, makes an offer to allot or invites subscription, or allots, or enters into an agreement to allot, securities to more than the prescribed number of persons, whether the payment for the securities has been received or not or whether the company intends to list its securities or not on any recognized stock exchange in or outside India, the same shall be deemed to be an offer to the public and shall

accordingly be governed by the provisions of Part I of this Chapter.

Explanation II.— For the purposes of this section, the expression—(i) "qualified institutional buyer" means the qualified institutional buyer as defined in the Securities and Exchange Board of India (Issue of Capital and Disclosure Requirements) Regulations, 2009 as amended from time to time.

- (3) No fresh offer or invitation under this section shall be made unless the allotments with respect to any offer or invitation made earlier have been completed or that offer or invitation has been withdrawn or abandoned by the company.
- (4) Any offer or invitation not in compliance with the provisions of this section shall be treated as a public offer and all provisions of this Act, and the Securities Contracts (Regulation) Act, 1956 and the Securities and Exchange Board of India Act, 1992 shall be required to be complied with.
- (5) All monies payable towards subscription of securities under this section shall be paid through cheque or demand draft or other banking channels but not by cash.
- (6) A company making an offer or invitation under this section shall allot its securities within sixty days from the date of receipt of the application money for such securities and if the company is not able to allot the securities within that period, it shall repay the application money to the subscribers within fifteen days from the date of completion of sixty days and if the company fails to repay the application money within the aforesaid period, it shall be liable to repay that money with interest at the rate of twelve per cent per annum from the expiry of the sixtieth day:

Provided that monies received on application under this section shall be kept in a separate bank account in a scheduled bank and shall not be utilized for any purpose other than—

(a) For adjustment against allotment of securities; or

(b) For the repayment of monies where the company is unable to allot securities.

(7) All offers covered under this section shall be made only to such persons whose names are recorded by the company prior to the invitation to subscribe, and that such persons shall receive the offer by name, and that a complete record of such offers shall be kept by the company in such manner as may be prescribed and complete information about such offer shall be filed with the Registrar within a period of thirty days of circulation of relevant private placement offer letter.

(8) No company offering securities under this section shall release any public advertisements or utilize any media, marketing or distribution channels or agents to inform the public at large about such an offer.

(9) Whenever a company makes any allotment of securities under this section, it shall file with the Registrar a return of allotment in such manner as may be prescribed, including the complete list of all security-holders, with their full names, addresses, number of securities allotted and such other relevant information as may be prescribed.

(10) If a company makes an offer or accepts monies in contravention of this section, the company, its promoters and directors shall be liable for a penalty which may extend to the amount involved in the offer or invitation or two crore rupees, whichever is higher, and the company shall also refund all monies to

subscribers within a period of thirty days of the order imposing the penalty.

CREDIT RATING

As we know it is a precondition to obtain Credit rating from at least one credit rating agency registered with SEBI and is disclosed in the offer document for issuance of debt securities under **SEBI (Issue and listing of Debt Securities) regulations, 2008** [to be read in reference to Securities and Exchange Board of India (Issue and Listing of Debt Securities) (Amendment) Regulations, 2012]. If the credit ratings have been obtained from more than one credit rating agency, then all ratings including the unaccepted ratings have to be disclosed in the offer document.

Credit rating is primarily intended to systematically measure credit risk arising from transactions between lender and borrower. Credit risk is the risk of a financial loss arising from the inability (known in credit parlance as default) of the borrower to meet the financial obligations towards its creditor. The ability of a borrower to meet its obligations fluctuates according to the behavior of risk factors, both internal and external, that impact the performance of a business enterprise. Therefore, most lenders have to incur costs of analyzing these factors before a lending decision is made, and also create monitoring mechanisms that enable such evaluation when the borrowers' obligations are outstanding. If such specialist assessment of credit quality is done by an independent agency, it would be possible for the lender to not incur the costs, but rely on the assessment of such agency. We then have a system where, the borrower seeks the opinion of the specialized agency, pays the costs of these services, and then provides the assessment to the lender, for seeking funds. Credit rating is one of the many ways of standardizing the credit quality of borrowers, through a formal

examination of risk factors, which enables classification of credit risk into defined categories. Such categorization standardizes credit risk, in ways that enable measurement and management of credit risk. Credit rating thus enables pricing of debt products, and their valuation in a balance sheet, over the period they are outstanding.

In India, it is mandatory for credit rating agencies to register themselves with SEBI and abide by the SEBI [Credit Rating Regulations, 1999 {to be read in reference and complied with **(CREDIT RATING AGENCIES) (AMENDMENT) REGULATIONS, 2011**}. There are 6 SEBI registered credit rating agencies in India, namely, CRISIL, ICRA, CARE, Fitch, Brickwork and SMERA which provide a rating on various categories of debt instruments. Credit rating agencies assess the credit quality of debt issuers, on the basis of a number of quantitative and qualitative factors, employing specialized analysts, who focus on industry categories in which they have specialized knowledge. Apart from information provided by the borrower, these analysts independently collect and assess information, about the industry and company variables, and performance of peer group companies, and collate such data. Rating essentially involves the translation of information variables into a ranking, which places the company in a slot that describes the ability and willingness of the company to service the instrument proposed to be issued.

RATING SYMBOLS

The ranking of credit quality is usually done with the help of rating symbols, which broadly classify instruments into investment grade, and speculative grade. An illustrative rating list is provided below (representing CRISIL's rating symbols):

CRISIL has revised the symbols and definitions of its long-term and short-term credit ratings on debt instruments, structured

finance instruments, and debt mutual fund schemes. This is in compliance with a June 15, 2011, Securities and Exchange Board of India (SEBI) circular, “Standardization of Rating Symbols and Definitions,” which mandates the use of common rating symbols and rating definitions by all credit rating agencies (CRAs). As per the circular, all CRAs are required to revise their rating symbols and definitions as recommended by SEBI. Accordingly, CRISIL has effected changes in rating symbols and definitions with effect from July 11, 2011. The rating symbols and definitions of the following class of instruments have been revised for:

- (i) Long-term debt instruments
- (ii) Short-term debt instruments
- (iii) Long-term structured finance instruments
- (iv) Short-term structured finance instruments
- (v) Long-term mutual fund schemes
- (vi) Short-term mutual fund schemes

Below are the revised rating symbols as they correspond to earlier rating symbols:

Long-Term Debt instruments	
Earlier Rating Symbol	Revised Rating Symbol
AAA	CRISIL AAA
AA	CRISIL AA
A	CRISIL A
BBB	CRISIL BBB
BB	CRISIL BB
B	CRISIL B
C	CRISIL C
D	CRISIL D

Short-Term Debt instruments	
Earlier Rating Symbol	Revised Rating Symbol
P1	CRISIL A1
P2	CRISIL A2
P3	CRISIL A3
P4	CRISIL A4
P5	CRISIL D

Long-Term Structured Finance instruments	
Earlier Rating Symbol	Revised Rating Symbol
AAA (so)	CRISIL AAA (SO)
AA (so)	CRISIL AA (SO)
A (so)	CRISIL A (SO)
BBB (so)	CRISIL BBB (SO)
BB (so)	CRISIL BB (SO)
B (so)	CRISIL B (SO)
C (so)	CRISIL C (SO)
D (so)	CRISIL D (SO)

Short-Term Structured Finance instruments	
Earlier Rating Symbol	Revised Rating Symbol
P1 (so)	CRISIL A1 (SO)
P2 (so)	CRISIL A2 (SO)
P3 (so)	CRISIL A3 (SO)
P4 (so)	CRISIL A4 (SO)
P5 (so)	CRISIL D (SO)

Long-Term Mutual Fund Schemes	
Earlier Rating Symbol	Revised Rating Symbol
AAAf	CRISIL AAAmfs
AAf	CRISIL AAfms
Af	CRISIL Afms
BBBf	CRISIL BBBmfs
BBf	CRISIL BBmfs
Bf	CRISIL Bmfs
Cf	CRISIL Cmfs

Short-Term Mutual Fund Schemes	
Earlier Rating Symbol	Revised Rating Symbol
P1f	CRISIL A1mfs
P2f	CRISIL A2mfs
P3f	CRISIL A3mfs
P4f	CRISIL A4mfs

CRISIL's Revised Rating Symbols and Definitions:

Long-Term Debt Instruments	
Revised Rating symbol	Revised rating definition as stipulated by SEBI in its Circular No. CIR/MIRSD/4/2011 dated June 15, 2011
CRISIL AAA (Highest Safety)	Instruments with this rating are considered to have the highest degree of safety regarding timely servicing of financial obligations. Such instruments carry lowest credit risk.
CRISIL AA (High Safety)	Instruments with this rating are considered to have high degree of safety regarding timely servicing of financial obligations. Such instruments carry very low credit risk.
CRISIL A (Adequate Safety)	Instruments with this rating are considered to have adequate degree of safety regarding timely servicing of financial obligations. Such instruments carry low credit risk.
CRISIL BBB (Moderate Safety)	Instruments with this rating are considered to have moderate degree of safety regarding timely servicing of financial obligations. Such instruments carry moderate credit risk.
CRISIL BB (Moderate Risk)	Instruments with this rating are considered to have moderate risk of default regarding timely servicing of financial obligations.
CRISIL B (High Risk)	Instruments with this rating are considered to have high risk of default regarding timely servicing of financial obligations.
CRISIL C (Very High Risk)	Instruments with this rating are considered to have very high risk of default regarding timely servicing of financial obligations.
CRISIL D (Default)	Instruments with this rating are in default or are expected to be in default soon.
Note :	<i>1) CRISIL may apply '+' (plus) or '-' (minus) signs for ratings from 'CRISIL AA' to 'CRISIL C' to reflect comparative standing within the</i>

	<p>category.</p> <p>2) CRISIL may assign rating outlooks for ratings from 'CRISIL AAA' to 'CRISIL B'. Ratings on Rating Watch will not carry outlooks. A rating outlook indicates the direction in which a rating may move over a medium-term horizon of one to two years. A rating outlook can be 'Positive', 'Stable', or 'Negative'. A 'Positive' or 'Negative' rating outlook is not necessarily a precursor of a rating change.</p> <p>3) A suffix of 'r' indicates investments carrying non-credit risk.</p> <p>The 'r' suffix indicates that payments on the rated instrument have significant risks other than credit risk. The terms of the instrument specify that the payments to investors will not be fixed, and could be linked to one or more external variables such as commodity prices, equity indices, or foreign exchange rates. This could result in variability in payments, including possible material loss of principal, because of adverse movement in value of the external variables. The risk of such adverse movement in price/value is not addressed by the rating.</p> <p>4) CRISIL may assign a rating of 'NM' (Not Meaningful) to instruments that have factors present in them, which render the outstanding rating meaningless. These include reorganization or liquidation of the issuer, the obligation being under dispute in a court of law or before a statutory authority.</p>
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Short-Term Debt Instruments	
Revised Rating symbol	Revised rating definition as stipulated by SEBI in its Circular No. CIR/MIRSD/4/2011 dated June 15, 2011
CRISIL A1	Instruments with this rating are considered to have very strong degree of safety regarding timely payment of financial obligations. Such instruments carry lowest credit risk.
CRISIL A2	Instruments with this rating are considered to have strong degree of safety regarding timely payment of financial obligations. Such instruments carry low credit risk.

CRISIL A3	Instruments with this rating are considered to have moderate degree of safety regarding timely payment of financial obligations. Such instruments carry higher credit risk as compared to instruments rated in the two higher categories.
CRISIL A4	Instruments with this rating are considered to have minimal degree of safety regarding timely payment of financial obligations. Such instruments carry very high credit risk and are susceptible to default.
CRISIL D	Instruments with this rating are in default or expected to be in default on maturity.
Note :	<p>1) CRISIL may apply '+' (plus) sign for ratings from 'CRISIL A1' to 'CRISIL A4' to reflect comparative standing within the category.</p> <p>2) A suffix of 'r' indicates investments carrying non-credit risk.</p> <p>The 'r' suffix indicates that payments on the rated instrument have significant risks other than credit risk. The terms of the instrument specify that the payments to investors will not be fixed, and could be linked to one or more external variables such as commodity prices, equity indices, or foreign exchange rates. This could result in variability in payments, including possible material loss of principal, because of adverse movements in value of the external variables. The risk of such adverse movements in price/value is not addressed by the rating.</p> <p>3) CRISIL may assign a rating of 'NM' (Not Meaningful) to instruments that have factors present in them, which render the outstanding rating meaningless. These include reorganization or liquidation of the issuer, the obligation being under dispute in a court of law or before a statutory authority.</p>

Long-Term Structured Finance Instruments	
Revised Rating symbol	Revised rating definition as stipulated by SEBI in its Circular No. CIR/MIRSD/4/2011 dated June 15, 2011
CRISIL AAA (SO) (Highest Safety)	Instruments with this rating are considered to have the highest degree of safety regarding timely servicing of financial obligations. Such

	instruments carry lowest credit risk.
CRISIL AA (SO) (High Safety)	Instruments with this rating are considered to have high degree of safety regarding timely servicing of financial obligations. Such instruments carry very low credit risk.
CRISIL A (SO) (Adequate Safety)	Instruments with this rating are considered to have adequate degree of safety regarding timely servicing of financial obligations. Such instruments carry low credit risk.
CRISIL BBB (SO) (Moderate Safety)	Instruments with this rating are considered to have moderate degree of safety regarding timely servicing of financial obligations. Such instruments carry moderate credit risk.
CRISIL BB (SO) (Moderate Risk)	Instruments with this rating are considered to have moderate risk of default regarding timely servicing of financial obligations.
CRISIL B (SO) (High Risk)	Instruments with this rating are considered to have high risk of default regarding timely servicing of financial obligations.
CRISIL C (SO) (Very High Risk)	Instruments with this rating are considered to have very high likelihood of default regarding timely payment of financial obligations.
CRISIL D (SO) (Default)	Instruments with this rating are in default or are expected to be in default soon.
Note :	<p>1) CRISIL may apply '+' (plus) or '-' (minus) signs for ratings from 'CRISIL AA(SO)' to 'CRISIL C(SO)' to reflect comparative standing within the category.</p> <p>2) CRISIL may assign rating outlooks for ratings from 'CRISIL AAA(SO)' to 'CRISIL B(SO)'. Ratings on Rating Watch will not carry outlooks. A rating outlook indicates the direction in which a rating may move over a medium-term horizon of one to two years. A rating outlook can be 'Positive', 'Stable', or 'Negative'. A 'Positive' or 'Negative' rating outlook is not necessarily a precursor of a rating change.</p> <p>3) A suffix of 'r' indicates investments carrying non-credit risk.</p> <p>The 'r' suffix indicates that payments on the rated instrument have significant risks other than credit risk. The terms of the instrument specify that the payments to investors will not be fixed, and could be linked to one or more external variables such as commodity prices,</p>

	<p>equity indices, or foreign exchange rates. This could result in variability in payments, including possible material loss of principal, because of adverse movement in value of the external variables. The risk of such adverse movement in price/value is not addressed by the rating.</p> <p>4) CRISIL may assign a rating of 'NM' (Not Meaningful) to instruments that have factors present in them, which render the outstanding rating meaningless. These include reorganization or liquidation of the issuer, the obligation being under dispute in a court of law or before a statutory authority.</p>
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Short-Term Structured Finance Instruments	
Revised Rating symbol	Revised rating definition as stipulated by SEBI in its Circular No. CIR/MIRSD/4/2011 dated June 15, 2011
CRISIL A1(SO)	Instruments with this rating are considered to have very strong degree of safety regarding timely payment of financial obligation. Such instruments carry the lowest credit risk.
CRISIL A2(SO)	Instruments with this rating are considered to have strong degree of safety regarding timely payment of financial obligation. Such instruments carry low credit risk.
CRISIL A3(SO)	Instruments with this rating are considered to have moderate degree of safety regarding timely payment of financial obligation. Such instruments carry higher credit risk as compared to instruments rated in the two higher categories.
CRISIL A4(SO)	Instruments with this rating are considered to have minimal degree of safety regarding timely payment of financial obligation. Such instruments carry very high credit risk and are susceptible to default.
CRISIL D(SO)	Instruments with this rating are in default or expected to be in default on maturity.

Note :	<p>1) CRISIL may apply '+' (plus) sign for ratings from 'CRISIL A1(SO)' to 'CRISIL A4 (SO)' to reflect comparative standing within the category.</p> <p>2) A suffix of 'r' indicates investments carrying non-credit risk.</p> <p>The 'r' suffix indicates that payments on the rated instrument have significant risks other than credit risk. The terms of the instrument specify that the payments to investors will not be fixed, and could be linked to one or more external variables such as commodity prices, equity indices, or foreign exchange rates. This could result in variability in payments, including possible material loss of principal, because of adverse movements in value of the external variables. The risk of such adverse movements in price/value is not addressed by the rating.</p> <p>3) CRISIL may assign a rating of 'NM' (Not Meaningful) to instruments that have factors present in them, which render the outstanding rating meaningless. These include reorganization or liquidation of the issuer, the obligation being under dispute in a court of law or before a statutory authority.</p>
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Long-Term Debt Mutual Fund Schemes	
Revised Rating symbol	Revised rating definition as stipulated by SEBI in its Circular No. CIR/MIRSD/4/2011 dated June 15, 2011
CRISIL AAAmfs	Schemes with this rating are considered to have the highest degree of safety regarding timely receipt of payments from the investments that they have made.
CRISIL AAmfs	Schemes with this rating are considered to have the high degree of safety regarding timely receipt of payments from the investments that they have made.
CRISIL Amfs	Schemes with this rating are considered to have the adequate degree of safety regarding timely receipt of payments from the investments that they have made.
CRISIL BBBmfs	Schemes with this rating are considered to have the moderate degree of safety regarding timely receipt of payments from the

	investments that they have made.
CRISIL BBmfs	Schemes with this rating are considered to have moderate risk of default regarding timely receipt of payments from the investments that they have made.
CRISIL Bmfs	Schemes with this rating are considered to have high risk of default regarding timely receipt of payments from the investments that they have made.
CRISIL Cmfs	Schemes with this rating are considered to have very high risk of default regarding timely receipt of payments from the investments that they have made.
Note:	<i>The ratings from 'CRISIL AAmfs' to 'CRISIL Cmfs' may be modified by the addition of a '+' (plus) or '-' (minus) sign to reflect comparative standing within the category.</i>

Short-Term Debt Mutual Fund Schemes	
Revised Rating symbol	Revised rating definition as stipulated by SEBI in its Circular No. CIR/MIRSD/4/2011 dated June 15, 2011
CRISIL A1mfs	Schemes with this rating are considered to have very strong degree of safety regarding timely receipt of payments from the investments that they have made.
CRISIL A2mfs	Schemes with this rating are considered to have strong degree of safety regarding timely receipt of payments from the investments that they have made.
CRISIL A3mfs	Schemes with this rating are considered to have moderate degree of safety regarding timely receipt of payments from the investments that they have made.
CRISIL A4mfs	Schemes with this rating are considered to have minimal degree of safety regarding timely receipt of payments from the investments that they have made.
Note:	<i>The ratings from 'CRISIL A1mfs' to 'CRISIL A4mfs' may be modified by the addition of a '+' (plus) sign to reflect comparative standing within the category.</i>

FIMMDA Practices and Regulations

The Fixed Income Money Market and Derivatives Association of India (FIMMDA) was established in May 1998 and formally inaugurated by Dr. Y.V. Reddy, Deputy Governor, Reserve Bank of India (RBI). One of the main objectives of establishing FIMMDA was to recommend and implement healthy business practices, ethical code of conduct, standard principles and practices to be followed by the members in their dealing of securities. To provide a clear understanding of market conventions, practices and high levels of integrity by the individuals concerned in the market, FIMMDA has formulated and prescribed certain set of regulations which are discussed below.

General Principals:

- It is expected that all the Principals and Brokers should maintain the highest standards of conduct so as to enhance the reputation of these markets.
- All participants must ensure that any individual who commits on behalf of the institution is acting within approved authorities.
- All institutions must stand by the commitment made by an individual acting on their behalf, the principle being 'My Word is my Bond'.
- Institutions must ensure that the individuals acting on their behalf are fully trained and completely aware of the rules and regulations, conventions, practices and the markets in which they deal.
- All individuals must comply with the rules and regulations governing the market and keep up-to-date with changes that may happen from time to time.
- Trades done outside the NDS, between institutions who are members of the NDS should be entered in the NDS within a period of 15 minutes from the time of conclusion of the trade.

- The role of a broker is to bring together the counterparties for a fee. When brokers act as intermediaries, they are not expected to act as principals or in a discretionary capacity, even momentarily. Where the broking company is acting on its own account, it is expected to declare that it is dealing as a principal before negotiating the trade.
- Brokers and principals are expected to maintain confidentiality of the parties involved in the transactions.
- Settlement of the deals in Fixed Income, Money Market and Rupee Derivatives will be subject to market conventions laid down by FIMMDA, irrespective of the counterparty being a member of FIMMDA.

Internal Controls:

The fundamental principle of maintenance of internal controls is the functional segregation of the front office and back office and settlement functions. Since there may be an overlap of the mid-office and back office functions, the managements of individual institutions may lay down any other level of segregation that it thinks fit. Personnel in back office functions and mid-office functions should be functionally segregated from those in the front office. Persons who conclude trades must not be involved in the confirmation or settlement of trades.

It is desirable to put in place the appropriated checks and controls from management perspective. Following procedures and controls may be put in place by the management in respect of their dealing in the markets:

- *Knowing the counterparty:* It is good practice to carry out basic due diligence and 'Know your counterparty' checks before dealing with the party. This basic check is to find out who the dealing party is and why the counterparty is dealing with the involved products.

- *Recording of the conversations:* It is a general experience that recourse to recorded tapes provides speedy resolution of disputes and differences. System of recording should be implemented in all the member front offices as soon as possible. However, while installing a recording system or signing up a new client, counterparties should be duly informed regarding the recording of the conversations. Further the recordings should be preserved for at least three months or till the time of resolution of disputes in case of disputed/unconfirmed transactions. Management should place adequate controls/checks in place to ensure the recorded data is not tampered with.
- *Off-Premise Dealings:* As a practice, participants should deal only from their normal place of dealing i.e. from their respective dealing rooms/office as the case may be. However, there may be occasions when the dealer may have to deal from other than his normal place of dealing. Management may lay down the guidelines, including the staffs that are authorized to deal from outside the normal place of dealing. The dealer / official should, prior to dealing, inform the counterparty about dealing off-premises. The fact that the deal has been done off the premises should also be recorded in the deal confirmation and/or other relevant records.
- *Dealing Hours:* FIMMDA has prescribed dealing hours from 9:00 a.m. to 5:30 p.m. from Monday to Friday and from 9:00 a.m. to 1:00 p.m. on Saturday. However any provisions and regulations made by RBI would supersede and timings prescribed by RBI would prevail. Deals done outside these hours should be reported to the management and

management should satisfy themselves about the necessity of concluding such deals outside the prescribed hours.

- *Personal Investments*: Personal investments of dealers in the products, which the institution is dealing in should confirm to the “Personal Investment Policy” formulated by the management. While framing the Personal Investment Policy the management should take into consideration the rules and regulations laid down by any statutory authority in respect of insider trading.
- *Rotation of Dealers*: It has been suggested that dealers should not be kept too long on the same desk. Management should formulate suitable policy for rotation of dealers. Further a system of an annual compulsory leave of 15 days or longer may be introduced so that no dealer remains on the job continuously.
- *Confirmation of Deals*: Firms should ensure that they have a process in place to ensure that deals recorded by the trader are confirmed independently by the back-office. All confirmations should include the date of the deal, the name of the counterparty and all other details of the deal. It is a good practice to also confirm all settlement details, even when some of these details do not change with each and every deal. The back office must respond promptly to confirmations received for which they do not have a corresponding trade. It is proper to first check with the front office to ensure that no deal has been missed. They should then promptly advise the back office of the counterparty of the absence of the trade. A discrepancy between a confirmation and significant details of the trade, and even the existence of a trade, should be brought to the attention of the management. Management should satisfy themselves of the

genuineness and accuracy of the trade. It is important that discrepancies should be promptly sorted out within a few minutes of the deal.

Dealing Procedures and Principals:

It is the prime responsibility of the Dealers to clearly state at the outset, prior to a transaction being executed, and any qualifying conditions to which the deal will be subject to. Where a firm quote has been indicated on the NDS, qualifying conditions cannot be specified after the conclusion of the deal. Typical examples of qualifications include where a price is quoted subject to the necessary credit approval, limits available for the counterparty, inability to conclude a transaction because offices of the member in other centres are not open. This should be made known to the broker and the potential counterparty at an early stage and before names are exchanged by the broker.

Dealers, whether acting as principals, agent or broker, have a duty to make absolutely clear whether the prices they are quoting are firm or merely indicative. Prices quoted by brokers should be taken as indicative unless otherwise qualified. In respect of deals on the NDS, the dealer would put the quote as a 'firm' quote or 'indicative' quote on the NDS. In case the dealer is willing to do the deal only with a certain set of counterparties, he should put the quote as 'firm' only for preferred counterparties. In respect of other deals, a dealer quoting a firm price or rate either through a broker or directly to a potential counterparty is committed to deal at that price or rate in a marketable amount provided, the counterparty name is acceptable. Generally, prices are assumed to be firm as long as the counterparty or the broker is on line. Members should clearly and immediately indicate when the prices are withdrawn. In volatile markets, or when some news is expected, dealers quoting a firm price or rate should indicate the length of time for which their quote is firm. The price or the rate is usually for the marketable amount. If the quote is not for a marketable quantity,

the dealer / broker should qualify the same while submitting the quote.

A significant part of the volume transacted by brokers relies on mandates given by dealers acting on behalf of principals. The risk that the principal runs is that such an offer could get hit after an adverse market move has taken place. The broker is expected to use the mandate in order to “advertise” the principal’s interest to the entities that the broker expects will have an interest in the price. Generally, the broker is free to show the price to entities he deems fit, but members have the right to expect that if a smaller set is defined; the broker will adhere to such a smaller set.

Mandates shall not be for a period of more than 15 minutes unless otherwise specified. Brokers are expected to check with the principal from time to time to ensure that the mandate is still current. The broker shall reveal the name of the entity offering the mandate when the counterparty is firm to deal at the mandate price. The broker will then call the member who offered the mandate and confirm the deal. In the absence of any significant market movement, the member who has offered the mandate is expected to adhere to it. In case the price is not adhered to, it is the responsibility of the member who had offered the mandate to explain why the mandate is no longer valid. It is required of the member that the mandate price be withdrawn before the broker reveals the counter party name.

The only exception to this is when the counterparty name is not acceptable. The principal should call the broker if he wishes to withdraw the mandate before its expiry. The quote cannot be withdrawn after the broker has concluded the deal.

Delivery of the securities/funds: *The dealers should agree upon the delivery conditions before concluding the deal.* Delivery of the securities/funds is on a Delivery-versus-Payment (DVP) basis in respect of Government Securities and T-Bills. In respect of other securities, which are in demat form, since there is no DVP

mechanism, the dealers should agree upon the priority of settlement of the securities and funds. Where physical securities are to be delivered, the dealers should agree before conclusion of the deal as to whether the settlement will be DVP or otherwise (in which case the priority of settlement needs to be agreed upon).

Concluding a Deal: Dealers should regard themselves as bound to honor a deal once the price, name acceptability, credit approval and any other key commercial terms have been agreed. Oral agreements/contracts are considered binding on all the parties concerned. In respect of deals done on the NDS, the deal would be considered as final as soon as any counterparty responds to a 'firm' quote. Where quoted prices are qualified as being indicative or subject to negotiation of commercial terms, members should normally treat themselves as bound to honor the deal at the point when the terms have been agreed without qualification. Oral agreements are considered binding; the subsequent confirmation is evidence of the deal but should not override terms agreed orally. Making a transaction subject to documentation is not a good practice. In order to minimize the likelihood of disputes arising once documentation is prepared, dealers should make every effort to clarify all material points quickly during the oral negotiation of terms, and should include these in the confirmation.

Where brokers are involved, members have the right to expect that the broker will make them aware immediately on conclusion of the deal. As a general rule a deal should be regarded as having been 'done' where the dealer positively acknowledges the broker's confirmation. It is expected that a broker shall not assume that a deal is done without oral confirmation from the dealer.

Passing of names by brokers: It is a good practice for dealers not to seek the names of the counterparty before transacting and for brokers not to divulge the names before concluding the deal. Dealers and brokers should at all times treat the details of transactions as absolutely confidential between the parties involved. To save time

and avoid confusion, dealers should, wherever practical, give brokers prior indication of counterparties with whom, for whatsoever reason, they would be unwilling to do business. In all their transactions, brokers should aim to achieve a mutual and immediate exchange of names. Instruments like Certificate of Deposits and Commercial Papers, where the seller may not be the same entity as the issuer, the broker shall first disclose the issuer's name to the potential buyer. The name of the buyer shall be disclosed only after the buyer has accepted the seller's name. The seller has the right to refuse to transact with the buyer.

Reporting of deals on the NDS: The dealers should enter the deals, concluded on the NDS or to be reported on the NDS, within a period of 15 minutes of the conclusion of the deal. Deals in Government Securities and T-Bills may be conducted either on the NDS or otherwise. However, all the deals in Government Securities and Treasury Bills have to be reported on the NDS. Since the settlement of the deals amongst members will be through CCIL, it would have to be entered in the NDS. The dealer of the selling counterparty of the securities has to enter the deal into NDS and the dealer of the buying counterparty have to approve the deal. The back office of both the counterparties has to then approve the deal. It would be a good practice to conclude the approval of the deals within a period of 30 minutes from the time of conclusion of the deal. In any case the process should be completed before the time of closure of the NDS.

Oral Confirmations: No oral confirmation is essential in respect of deals, entered in the NDS. In respect of other deals an oral confirmation of the deals by the back office is a good practice. Lack of response should not be construed as confirmation.

Written Confirmations: A written confirmation of each deal must be sent out at the earliest and a confirmation should be received from

the counterparty. The confirmation provides a necessary final safeguard against dealing errors.

Confirmations should be dispatched and checked promptly, even when oral deal confirmations have been undertaken. A confirmation of each deal must be sent out at the earliest. This is particularly essential if dealing for same day settlement. All participants of the wholesale markets should have in place the capability to dispatch confirmations so that they are received and can be checked within a few hours from the time of striking the deal. Where the products involved are more complex, and so require more details to be included on the confirmation, this may not be possible; nevertheless it is in the interest of all concerned that such deals are confirmed as quickly as possible and in no case later than the next working day of the date of the deal. It is recommended that principals should inquire about confirmations not received within the expected time. All confirmations should include the trade date, value date, the name of the counterparty and all other details of the deal, including, wherever appropriate, the commission charged by the broker. All confirmations should state "The settlement of the deals in Fixed Income, Money Market and Rupee Derivatives are subject to FIMMDA's market conventions irrespective of the counterparty being a member of FIMMDA". It is an accepted practice for principals to confirm directly all the details of transactions arranged through a broker; who independently sends a contract/transaction confirmation to both counterparties. It is vital that principals upon receipt of confirmations immediately check the confirmations carefully so that discrepancies are quickly revealed and corrected. As a general rule, confirmations should not be issued by or sent to and checked by dealers. Confirmation is a back-office function.

Regulations governing Unscheduled Holiday

An Unscheduled Holiday may be declared on account of:

- *Systemic Problems*: Events that could lead to total settlement transactions coming to a halt like general bandh / RBI strike / political disturbances / disruption of public utility services due to heavy rains, etc. These events would have an impact on the overall system and would be common to all players at a particular place.
- *Specific Problems*: Events that could have an impact on transactions entered into between few or a group of market participants like a strike in one bank / few banks / organizations participating in money market. This would pose settlement problem to the counter party to the transactions entered with such market participant(s).

Declaration of unscheduled holiday due to systemic problems:

FIMMDA, after taking into consideration the status of clearing transactions and in consultation with select market players and/or RBI, may decide to postpone settlement of transactions in money, securities, and derivatives markets. The decision of FIMMDA will be formally communicated through information service providers / wire agencies like Reuters, Bloomberg, Money Line Telerate, etc. It would be also published on FIMMDA's website.

Call Money: Settlement of second leg would be done at the contracted rate for the extended period of settlement. In other words, additional interest for one / more day/s would be payable at contracted rate on amount borrowed. Call Money transactions due for settlement on 1st leg would get automatically cancelled as, the transaction is by nature, overnight money.

Notice Money / Term Money (Inter-Bank): Where 1st leg of the transaction could not be performed because of the above event,

the contract would be deemed to have been done for settlement on the following working day for the same original period (number of days) and at same rate. The other terms of the contract would remain unaltered. Banks and PDs do enter into long-term inter-bank transactions with payment terms like payment of interest on quarterly / half yearly basis. If such quarterly / half yearly interest is payable on such day it would be effected on the next working day without any other levy. Where the 2nd leg of the transaction cannot be performed, the repayment date will be extended by the number of days of the unscheduled holiday at the contracted rate.

Certificate of Deposit and Commercial Paper-Primary Market Issuance: Where the 1st leg of the transaction in the primary market could not be performed because of the above event, the contract would be deemed to have been done for settlement on the following working day for the same period / original duration and at the same rate. All the other terms of the contract would remain unaltered. Thus, the due date would get extended.

Secondary Market Trade: In case of secondary market deals contract would be performed on the following working day at 'contracted rate of yield'.

Redemption: CDs and CPs due for redemption would be redeemed by the respective issuers by paying day/s interest at contracted interest / discount rate, if the holder is the first investor. If CD/CP is held by transferee (for secondary market trades) the issuer would pay the investor/holder in due course interest on the face value of the CD /CP at previous day's FIMMDA-NSE rate. The basis in all the above cases would be Actual/365 day basis.

Redemption on Saturday: Where the CDs and CPs are due for payment on Saturdays and if the holder of the paper is a non –

bank entity (who cannot participate in inter – bank clearing) the holder cannot claim additional interest due to holder's inability to present / obtain the payment from issuer / IPA. However, the issuer might consider issuing the cheque a day in advance so as to enable the holder to present it, through its banker, in MICR Clearing (MICR Clearing is accounted for in the books of RBI as well as participating banks on the following working day). However, it is for the issuer of the cheque to ensure that the cheque is issued after HV timing so that the debit to the account of issuer takes place through MICR clearing only. The holders can consider presenting the CD or CP, on collection basis, through its banker for interbank cheque.

Redemption of T-Bills / Dated Government Securities: The decision regarding the value date of the credit of the amount to the account of the investor will be taken by the RBI.

Repo Transactions / LAF Transactions-In respect of one day Repo / LAF: If the ready leg cannot be settled the transaction would be deemed to be automatically cancelled.

In respect of one day Repo: If the forward leg cannot be settled, the settlement of forward leg could be extended to the following working day and the borrower of funds would pay interest to the lender of funds at the contracted rate of Repo interest for the resultant period of contract of Repo (including the extended period). The SGL for second leg will not be modified. Interest would be paid to the lender of money separately by a separate cheque. In case of trades settled through CCIL, any changes in consideration interest will be outside the system of CCIL and the counterparties will settle the difference mutually. In respect of Repo beyond one day duration (1st Leg): Where the transaction due for settlement on an unscheduled holiday could not be settled the settlement of first leg would be on the following working day for the original number of days at the contracted rate. That is the second leg

would get extended by one day. The settlement value of the trade would not undergo a change. In respect of Repo beyond one day duration (2nd Leg): In case of postponement of 2nd leg of the transaction, the SGL with 2nd leg consideration worked out on the basis of 1st leg of Repo, could be lodged, as it is. The difference amount payable by the borrower (Repoing Party) to the lender (Reverse Repo party) would be paid separately by way of cheque or other appropriate mode at Repo borrowing rate (basis actual / 365 days). In case of trades settled through CCIL, any changes in consideration / interest will be outside the system of CCIL and the counterparties will settle the difference mutually.

Declaration of unscheduled holiday due to specific problems:

As stated in earlier, on a strike / non-participation by a Bank / PD / FI or a group of Banks / PDs/ FIs etc., the counter party to such bank(s) / PD(s) / FI(s) would find it difficult to settle the transactions. The treatment of settlement of transactions with such bank(s) / PD(s) / FI(s) is given below. No contract would get cancelled automatically due to failure of one of any contracting party unless both the parties to contract cancel / modify with mutual consent. *This section is only applicable to trades not settled through CCIL.*

Call Money: Settlement of second leg would be done at the contracted rate for the extended period of settlement. In other words, additional interest for one / more day/s would be payable at contracted rate on amount borrowed. Call Money transactions due for settlement on 1st leg would get automatically cancelled as, transaction is by nature, overnight money.

Notice Money / Term Money (Inter-Bank): Where 1st leg of the transaction could not be performed because of the above, the contract would be deemed to have been done for settlement on the

following working day for the same original period (number of days) and at same rate. The other terms of the contract would remain unaltered. Banks, PDs do enter long term inter-bank transactions with payment terms like payment of interest quarterly / half yearly. If such quarterly / half yearly interest is payable on such day it would be effected on the next working day without any other levy. Where the 2nd leg of the transaction (Repayment) could not be performed such extension in terms of repayment would be at the applicable contracted rate as applicable on the date of such event.

Certificate of Deposit and Commercial Paper- Primary Market Issuance: Where 1st leg of the transaction primary market could not be performed because of the above event, the contract would be deemed to have been done for the following working day for settlement for the same period / original duration and at same rate. In a way the other terms of the contract would remain unaltered. Thus, the due date would get extended.

Secondary Market Trade: In case of secondary market deals contract would be performed on the following working day at 'contracted rate of yield' (actually price to be worked as per market convention for every Rs.100/- up to four decimals – rounded off). Hence, the consideration would undergo a change.

Redemption: CDs and CPs due for redemption would be redeemed by the respective issuers by paying day/s interest at contracted interest / discount rate, if the holder is the first investor. If CD/CP is held by transferee (for secondary market trades) the issuer would pay the investor/holder in due course interest on the face value of the CD /CP at the MIBOR (FIMMDA-NSE) rate prevailing on the date/s of such extension/s for such extended period. The basis in all the above cases would be 365 days a year. In respect of CP Redemption where the payee / payee's banker is on strike and

as a result, it could not collect / present the cheque or submit CP/CD for redemption, the issuer would not be liable to pay interest. However, in respect of the issuer's default (bank / corporate) if the redemption cannot be made on the due date the issuer would be liable for the compensation as stated above.

Redemption of T-Bills / Zero Coupon Bonds: Since, the credit of dated securities is to be effected at RBI, these transactions will go unaffected.

Repo Transactions / LAF Transactions- In respect of LAF: In respect of LAF transactions due for settlement in 2nd leg the treatment of transaction would be decided by RBI and the same would be followed by the Bank / PD. In respect of first leg of transaction where the Bank / PD would have submitted bid the transaction would be required to be compulsory settled.

In respect of Market Repo (one day) 1st leg: The deal would get cancelled unless otherwise agreed upon by the parties mutually. In the event the lender of funds has a SLR problem, the lender would cover the SLR by doing reverse repo with any other market participant. The cost differential if any would be borne by the counter party (party which is not working).

In respect of Market Repo (one day) 2nd leg: Where the transaction due for settlement could not be settled due to unscheduled holiday, the transaction would be settled on the following working day without changing the gross consideration in the SGL, the borrowing party would pay the lender of money, one day's interest, at the respective day(s) FIMMDA NSE MIBOR. In case of trades settled through CCIL, the exchange of interest would happen bilaterally between the counterparties. In respect of Market Repo beyond one day duration (1st leg): Where the transaction due for settlement on an unscheduled holiday could not be settled the settlement of first leg would be on the following working day for

the original number of days at the contracted rate. That is the second leg would get extended by one day.

In respect of Repo beyond one day duration (2nd Leg): In case of postponement of 2nd leg of the transaction, the SGL with 2nd leg consideration worked out on the basis of 1st leg of Repo, could be lodged, as it is. The difference amount payable by the borrower (Repoing Party) to the lender (Reverse Repo party) would be paid separately by way of cheque or other appropriate mode at the FIMMDA NSE rate. In case of trades settled through CCIL, the exchange of interest would happen bilaterally between the counterparties.

PART-VI

Futures, Options, Forward & swaps

History of Financial Derivatives Markets

Financial derivatives have emerged as one of the biggest markets of the world during the past two decades. A rapid change in technology has increased the processing power of computers and has made them a key vehicle for information processing in financial markets. Globalization of financial markets has forced several countries to change laws and introduce innovative financial contracts which have made it easier for the participants to undertake derivatives transactions.

Early forward contracts in the US addressed merchants' concerns about ensuring that there were buyers and sellers for commodities. 'Credit risk', however remained a serious problem. To deal with this problem, a group of Chicago businessmen formed the Chicago Board of Trade (CBOT) in 1848. The primary intention of the CBOT was to provide a centralized location (which would be known in advance) for buyers and sellers to negotiate forward contracts. In 1865, the CBOT went one step further and listed the first 'exchange traded' derivatives contract in the US. These contracts were called 'futures contracts'. In 1919, Chicago Butter and Egg Board, a spin-off of CBOT, was reorganized to allow futures trading. Its name was changed to Chicago Mercantile Exchange (CME). The CBOT and the CME remain the two largest organized futures exchanges, indeed the two largest "financial" exchanges of any kind in the world today.

The first exchange-traded financial derivatives emerged in 1970's due to the collapse of fixed exchange rate system and adoption of floating exchange rate systems. As the system broke down currency volatility became a crucial problem for most countries. To help participants in foreign exchange markets hedge their risks

under the new floating exchange rate system, foreign currency futures were introduced in 1972 at the Chicago Mercantile Exchange. In 1973, the Chicago Board of Trade (CBOT) created the Chicago Board Options Exchange (CBOE) to facilitate the trade of options on selected stocks. The first stock index futures contract was traded at Kansas City Board of Trade. Currently the most popular stock index futures contract in the world is based on S&P 500 index, traded on Chicago Mercantile Exchange. During the mid-eighties, financial futures became the most active derivative instruments generating volumes many times more than the commodity futures. Index futures, futures on T-bills and EuroDollar futures are the three most popular futures contracts traded today. Other popular international exchanges that trade derivatives are LIFFE in England, DTB in Germany, SGX in Singapore, TIFFE in Japan, MATIF in France, Eurex etc. Futures contracts on interest-bearing government securities were introduced in mid-1970s. The option contracts on equity indices were introduced in the USA in early 1980's to help fund managers to hedge their risks in equity markets. Afterwards a large number of innovative products have been introduced in both exchange traded format and the Over the Counter (OTC) format. The OTC derivatives have grown faster than the exchange-traded contracts in the recent years.

Regulatory Framework

The trading of derivatives is governed by the provisions contained in the SC(R)A, the SEBI Act, the rules and regulations framed under that and the rules and bye-laws of the stock exchanges.

Securities Contracts (Regulation) Act, 1956

SC(R)A regulates transactions in securities markets along with derivatives markets. The original act was introduced in 1956. It

was subsequently amended in 1996, 1999, 2004, 2007 and 2010. It now governs the trading of securities in India. The term “securities” has been defined in the amended SC(R)A under the Section 2(h) to include:

- Shares, scrips, stocks, bonds, debentures, debenture stock or other marketable securities of a like nature in or of any incorporated company or other body corporate.
- Derivative.
- Units or any other instrument issued by any collective investment scheme to the investors in such schemes.
- Security receipt as defined in clause (zg) of section 2 of the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002
- Units or any other such instrument issued to the investor under any mutual fund scheme.
- Any certificate or instrument (by whatever name called), issued to an investor by an issuer being a special purpose distinct entity which possesses any debt or receivable, including mortgage debt, assigned to such entity, and acknowledging beneficial interest of such investor in such debt or receivable, including mortgage debt as the case may be.
- Government securities
- Such other instruments as may be declared by the Central Government to be securities.
- Rights or interests in securities.

“Derivative” is defined to include:

- A security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security.
- A contract which derives its value from the prices, or index of prices, of underlying securities.

Section 18A of the SC(R)A provides that notwithstanding anything contained in any other law for the time being in force, contracts in derivative shall be legal and valid if such contracts are:

- Traded on a recognized stock exchange
- Settled on the clearing house of the recognized stock exchange, in accordance with the rules and bye-laws of such stock exchanges.

Securities and Exchange Board of India Act, 1992

SEBI Act, 1992 provides for establishment of Securities and Exchange Board of India (SEBI) with statutory powers for (a) protecting the interests of investors in securities (b) promoting the development of the securities market and (c) regulating the securities market. Its regulatory jurisdiction extends over corporates in the issuance of capital and transfer of securities, in addition to all intermediaries and persons associated with securities market. SEBI has been obligated to perform the aforesaid functions by such measures as it thinks fit. In particular, it has powers for:

- Regulating the business in stock exchanges and any other securities markets.
- Registering and regulating the working of stock brokers, sub-brokers etc.
- Promoting and regulating self-regulatory organizations.
- Prohibiting fraudulent and unfair trade practices relating to securities markets.
- Calling for information from, undertaking inspection, conducting inquiries and audits of the stock exchanges, mutual funds and other persons associated with the securities market and other intermediaries and self-regulatory organizations in the securities market.
- Performing such functions and exercising according to Securities Contracts (Regulation) Act, 1956, as may be delegated to it by the Central Government.

Regulation for Derivatives Trading

SEBI set up a 24-member committee under the Chairmanship of Dr. L. C. Gupta to develop the appropriate regulatory framework for derivatives trading in India. On May 11, 1998 SEBI accepted the recommendations of the committee and approved the phased introduction of derivatives trading in India beginning with stock index futures. According to this framework:

- Any Exchange fulfilling the eligibility criteria can apply to SEBI for grant of recognition under Section 4 of the SC(R)A, 1956 to start trading derivatives. The derivatives exchange/segment should have a separate governing council and representation of trading/clearing members shall be limited to maximum of 40% of the total members of the governing council. The exchange would have to regulate the sales practices of its members and would have to obtain prior approval of SEBI before start of trading in any derivative contract.
- The Exchange should have minimum 50 members. The members of an existing segment of the exchange would not automatically become the members of derivative segment. The members seeking admission in the derivative segment of the exchange would need to fulfill the eligibility conditions.
- The clearing and settlement of derivatives trades would be through a SEBI approved clearing corporation/house. Clearing corporations/houses complying with the eligibility conditions as laid down by the committee have to apply to SEBI for approval.
- Derivative brokers/dealers and clearing members are required to seek registration from SEBI. This is in addition to their registration as brokers of existing stock exchanges. The minimum networth for clearing members of the derivatives

clearing corporation/ house shall be Rs.300 Lakh. The networth of the member shall be computed as follows:

- Capital + Free reserves
- Less non-allowable assets viz.,
 - (a) Fixed assets
 - (b) Pledged securities
 - (c) Member's card
 - (d) Non-allowable securities (unlisted securities)
 - (e) Bad deliveries
 - (f) Doubtful debts and advances
 - (g) Prepaid expenses
 - (h) Intangible assets
 - (i) 30% marketable securities
- The minimum contract value shall not be less than Rs.2 Lakh. Exchanges have to submit details of the futures contract they propose to introduce.
- The initial margin requirement, exposure limits linked to capital adequacy and margin demands related to the risk of loss on the position will be prescribed by SEBI/Exchange from time to time.
- There will be strict enforcement of "Know your customer" rule and requires that every client shall be registered with the derivatives broker. The members of the derivatives segment are also required to make their clients aware of the risks involved in derivatives trading by issuing to the client the Risk Disclosure Document and obtain a copy of the same duly signed by the client.
- The trading members are required to have qualified approved user and sales person who should have passed a certification programme approved by SEBI.

Participants in a Derivative Market

The derivatives market is similar to any other financial market and has following three broad categories of participants:

- **Hedgers:** These are investors with a present or anticipated exposure to the underlying asset which is subject to price risks. Hedgers use the derivatives markets primarily for price risk management of assets and portfolios.
- **Speculators:** These are individuals who take a view on the future direction of the markets. They take a view whether prices would rise or fall in future and accordingly buy or sell futures and options to try and make a profit from the future price movements of the underlying asset.
- **Arbitrageurs:** They take positions in financial markets to earn riskless profits. The arbitrageurs take short and long positions in the same or different contracts at the same time to create a position which can generate a riskless profit.

Economic Function of the Derivative Market

The derivatives market performs a number of economic functions.

- Prices in an organized derivatives market reflect the perception of the market participants about the future and lead the prices of underlying to the perceived future level. The prices of derivatives converge with the prices of the underlying at the expiration of the derivative contract. Thus derivatives help in discovery of future as well as current prices.
- The derivatives market helps to transfer risks from those who have them but do not like them to those who have an appetite for them.
- Derivatives, due to their inherent nature, are linked to the underlying cash markets. With the introduction of derivatives, the underlying market witnesses higher trading

volumes. This is because of participation by more players who would not otherwise participate for lack of an arrangement to transfer risk.

- Speculative trades shift to a more controlled environment in derivatives market. In the absence of an organized derivatives market, speculators trade in the underlying cash markets. Margining, monitoring and surveillance of the activities of various participants become extremely difficult in these kind of mixed markets.
- An important incidental benefit that flows from derivatives trading is that it acts as a catalyst for new entrepreneurial activity. The derivatives have a history of attracting many bright, creative, well-educated people with an entrepreneurial attitude. They often energize others to create new businesses, new products and new employment opportunities, the benefit of which are immense.

In a nut shell, derivatives markets help increase savings and investment in the long run. Transfer of risk enables market participants to expand their volume of activity.

Futures Contracts, Mechanism and Pricing

In recent years, derivatives have become increasingly important in the field of finance. While futures and options are now actively traded on many exchanges, forward contracts are popular on the OTC market. We shall first discuss about forward contracts along with their advantages and limitations. We then introduce futures contracts and describe how they are different from forward contracts. The terminology of futures contracts along with their trading mechanism has been discussed next. The key idea of this chapter however is the pricing of futures contracts. The concept of cost of carry for calculation of the forward price has been a very powerful concept. One would realize that it essentially works as a

parity condition and any violation of this principle can lead to arbitrage opportunities. The chapter explains mechanism and pricing of both Index futures and futures contracts on individual stocks.

Forward Contracts

A forward contract is an agreement to buy or sell an asset on a specified date for a specified price. One of the parties to the contract assumes a long position and agrees to buy the underlying asset on a certain specified future date for a certain specified price. The other party assumes a short position and agrees to sell the asset on the same date for the same price. Other contract details like delivery date, price and quantity are negotiated bilaterally by the parties to the contract. The forward contracts are normally traded outside the exchanges. The salient features of forward contracts are as given below:

- They are bilateral contracts and hence exposed to counter-party risk.
- Each contract is custom designed, and hence is unique in terms of contract size, expiration date and the asset type and quality.
- The contract price is generally not available in public domain.
- On the expiration date, the contract has to be settled by delivery of the asset.
- If the party wishes to reverse the contract, it has to compulsorily go to the same counterparty, which often results in high prices being charged.

Limitations of forward markets

Forward markets world-wide are posed by several problems:

- Lack of centralization of trading
- Illiquidity and

➤ Counterparty risk

In the first two of these, the basic problem is that of too much flexibility and generality. The forward market is like a real estate market, in which any two consenting adults can form contracts against each other. This often makes them design the terms of the deal which are convenient in that specific situation, but makes the contracts non-tradable.

Counterparty risk arises from the possibility of default by any one party to the transaction. When one of the two sides to the transaction declares bankruptcy, the other suffers. When forward markets trade standardized contracts, though it avoids the problem of illiquidity, still the counterparty risk remains a very serious issue.

Introduction to Futures

A futures contract is an agreement between two parties to buy or sell an asset at a certain time in the future at a certain price. But unlike forward contracts, the futures contracts are standardized and exchange traded. To facilitate liquidity in the futures contracts, the exchange specifies certain standard features of the contract. It is a standardized contract with standard underlying instrument, a standard quantity and quality of the underlying instrument that can be delivered, (or which can be used for reference purposes in settlement) and a standard timing of such settlement. A futures contract may be offset prior to maturity by entering into an equal and opposite transaction. The standardized items in a futures contract are:

- Quantity of the underlying
- Quality of the underlying
- The date and the month of delivery
- The units of price quotation and minimum price change
- Location of settlement

Distinction between Futures and Forwards Contracts

Forward contracts are often confused with futures contracts. The confusion is primarily because both serve essentially the same economic functions of allocating risk in the presence of future price uncertainty. However futures are a significant improvement over the forward contracts as they eliminate counterparty risk and offer more liquidity.

Futures Terminology

- Spot price: The price at which an underlying asset trades in the spot market.
- Futures price: The price that is agreed upon at the time of the contract for the delivery of an asset at a specific future date.
- Contract cycle: It is the period over which a contract trades.
- Expiry date: is the date on which the final settlement of the contract takes place.
- Contract size: The amount of asset that has to be delivered under one contract. This is also called as the lot size.
- Basis: Basis is defined as the futures price minus the spot price. There will be a different basis for each delivery month for each contract. In a normal market, basis will be positive. This reflects that futures prices normally exceed spot prices.
- Cost of carry: Measures the storage cost plus the interest that is paid to finance the asset less the income earned on the asset.
- Marking-to-market: In the futures market, at the end of each trading day, the margin account is adjusted to reflect the investor's gain or loss depending upon the futures closing price. This is called marking-to-market.

Stock Index Futures

Stock Index Futures are financial derivatives which have a Stock Index as the underlying. An index is a scale of numbers that represents changes in a set of values between a base time period and another time period. These changes are reflected through the movements of the index values along the scale. A Stock Index, on the other hand is a particular kind of index that represents changes in the market values of a number of securities contained in that index. A Stock Index can be representative of a group of industries or of dominant companies among various industries. It can have a broad base of hundreds of companies or a select base of say 30 companies.

A major reason for the development of the indices is that they provide an efficient proxy for the market, to enable the portfolio managers to beat the market. Stock indices, being representative in character act as an effective barometer of the national economy and the market sentiments. Since the index is representative of the values of the component stocks there can be more than one ways in which the values of the component stocks can be arranged in order to arrive at the index value. These ways are described as under:

1. Market Capitalization Method

Under this arrangement, a weight is assigned to each component total of the Stock Index based upon its share in market capitalization of all the components.

Then, on daily basis, changes in the market capitalization of each component impact the value of the index in proportion to their weights. Market capitalization, as we know is the multiple of the market value and the number of outstanding shares.

2. Market Value Method

Under the method, the weight is assigned on the basis of the market value and the index represents the aggregated market value of the component Stocks.

3. Equal Weightage

Under this arrangement of components, equal weightage is given to all the components. If there are 50 stocks in an index, each shall have 2 percent weight.

Out of the above three methods of arrangement, the market capitalization method is the most rational since it takes into account both market price and the number of shares. Thus a component having both larger floating stock and greater market value gets a better weightage.

Stock Indices in India

Both the major stock exchanges in India, i.e. Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) have created a number of indices. Some of these are as follows:

- BSE-30 (Sensex)
- BSE-100
- BSE-200
- BSE-500
- S & P CNX Nifty
- S & P Mid cap
- S & P CNX 500

The Sensex and Nifty are the most popular indices. Both of these are considered benchmark indices.

Trading in Index Futures

Index futures are the future contracts for which the underlying is the cash market index. In India, futures on both BSE Sensex and NSE Nifty are traded. By trading in index futures, the investors are betting on the state of the economy or collectively on the future market values of the shares of leading companies from major industrial groups. In a normal contract for purchase of equity shares, physical quantity of shares is delivered but in a futures contract, there is nothing to be delivered.

In the cash market, there is an ascertainable quantity of the security that is being traded. This quantity is subject to the upper limit of the amount of floating stock. In futures trading, the contracts are generated according to the interest of the contracting parties and as such, hypothetically, any numbers of futures can be traded.

Both the BSE and the NSE have introduced trading in index futures according to a similar pattern. The highlights of the trading methodology are as under:

Eligibility for trading in index futures

Any eligible investors who can trade in the cash market, can trade in the futures market. For every buyer there is a seller of the futures. What makes them agree on the contract value is the divergence of their views on the likely value of the index future at the expiry of the contract.

Let us illustrate this with the help of an example:

Suppose Nifty as on Jan. 1, 2014 is 3300. An investor 'A' takes a bullish view on the future movement of the Nifty i.e. he believes that Nifty value shall rise. There is another investor 'B' who believes that Nifty value should fall, i.e. he is bearish about future movement of the Nifty. Let us assume further that both 'A' and 'B' believes that the movement shall be 50 points from the present level after three months. 'A' has targeted a likely level of 3350

while 'B' has targeted a likely level of 3250. Both of them agree to enter into a index futures contract at a Nifty value of 3325 after three months. At this level, 'A' expects to make a profit of 25 points (3350-3325) while 'B' expects to make a profit of 75 points (3325-3250). Under the contract 'A' is a buyer of the futures, i.e. he agrees to buy the futures at the contracted value on the expiry of the contract. 'B' is a seller of the futures, i.e. he agrees to sell the futures at the contracted value on the expiry of the contract.

On the expiry date of the futures contract, i.e. after three months, if the Nifty value is 3315, 'A' will incur a loss of ten points while 'B' shall gain ten points. The contract will be closed by payment of the equivalent money by 'A' to 'B'. It may be noted here that the contracting parties need not wait for full three months for closing the contract at their end. If the Nifty future value a fortnight after the contract date is 3340, 'A' can book profit of 15 points and exit by selling his position to another buyer in the system. If on the other hand, the Nifty futures value is 3300, 'B' can book profit of 25 points and close his end of the contract by purchasing index futures of similar quantity and duration from a seller in the system. Following is a terminology of commonly used terms in the Index Futures market:

- **Contract Size:** is the value of the contract at a specific level of index. It is denominated by the product of the index level and the multiplier.
- **Multiplier:** It is a pre-determined value, used to arrive at the contract size. It is the price per index point.
- **Tick size:** It is the minimum price difference between two quotes of similar nature.
- **Contract Month:** It is the month in which the contract will expire.
- **Expiry Day:** It is the last day on which the contract is available for trading.
- **Open Interest:** It is the total outstanding long or short position in the market at any specific point in time. As total

long outstanding positions in the market would be equal to total short positions, for calculation of open interest, only one side the contracts is counted.

- *Volume*: is the number of contracts traded during a specific period of time during a day, during a week or during a month.
- *Long position*: is the outstanding/unsettled purchase position at any point of time.
- *Short position*: is the outstanding/unsettled sales position at any point of time.
- *Open position*: is the outstanding/unsettled long or short position at any point of time.

Futures Payoffs

Futures contracts have linear or symmetrical payoffs. It implies that the losses as well as profits for the buyer and the seller of a futures contract are unlimited. These linear payoffs are fascinating as they can be combined with options and the underlying to generate various complex payoffs.

Payoff for buyer of futures: Long futures

The payoff for a person who buys a futures contract is similar to the payoff for a person who holds an asset. He has a potentially unlimited upside as well as a potentially unlimited downside. Take the case of a speculator who buys a two-month Nifty index futures contract when the Nifty stands at 3000.

The underlying asset in this case is the Nifty portfolio. When the index moves up, the long futures position starts making profits, and when the index moves down it starts making losses.

Payoff for seller of futures: Short futures

The payoff for a person who sells a futures contract is similar to the payoff for a person who shorts an asset. He has a potentially

unlimited upside as well as a potentially unlimited downside. Take the case of a speculator who sells a two-month Nifty index futures contract when the Nifty stands at 3000. The underlying asset in this case is the Nifty portfolio. When the index moves down, the short futures position starts making profits, and when the index moves up, it starts making losses.

Pricing Futures

Pricing of futures contract is very simple. Using the cost-of-carry logic, we calculate the fair value of a futures contract. Every time the observed price deviates from the fair value, arbitragers would enter into trades to capture the arbitrage profit. This in turn would push the futures price back to its fair value. The cost of carry model used for pricing futures is given below:

$$F = Se^{rT}$$

where:

r Cost of financing (using continuously compounded interest rate)

T Time till expiration in years

e 2.71828

Example: Security XYZ Ltd trades in the spot market at Rs. 1150. Money can be invested at 11% p.a. The fair value of a one-month futures contract on XYZ is calculated as follows:

$$\begin{aligned} F &= Se^{rT} \\ &= 1150 * e^{0.11 * \frac{1}{12}} \\ &= 1160 \end{aligned}$$

Pricing equity index futures

A futures contract on the stock market index gives its owner the right and obligation to buy or sell the portfolio of stocks characterized by the index. Stock index futures are cash settled; there is no delivery of the underlying stocks. In their short history of trading, index futures have had a great impact on the world's securities markets. Its existence has revolutionized the art and science of institutional equity portfolio management.

The main differences between commodity and equity index futures are that:

- There are no costs of storage involved in holding equity.
- Equity comes with a dividend stream, which is a negative cost if you are long the stock and a positive cost if you are short the stock.

Therefore, $\text{Cost of carry} = \text{Financing cost} - \text{Dividends}$. Thus, a crucial aspect of dealing with equity futures as opposed to commodity futures is an accurate forecasting of dividends. The better the forecast of dividend offered by a security, the better is the estimate of the futures price.

Pricing index futures given expected dividend amount

The pricing of index futures is based on the cost-of-carry model, where the carrying cost is the cost of financing the purchase of the portfolio underlying the index, minus the present value of dividends obtained from the stocks in the index portfolio. This has been illustrated in the example below.

Nifty futures trade on NSE as one, two and three-month contracts. Money can be borrowed at a rate of 10% per annum. What will be the price of a new two-month futures contract on Nifty?

1. Let us assume that A Ltd. will be declaring a dividend of Rs.20 per share after 15 days of purchasing the contract.
2. Current value of Nifty is 4000 and Nifty trades with a multiplier of 100.

3. Since Nifty is traded in multiples of 100, value of the contract is $100 \times 4000 = \text{Rs.} 400,000$.
4. If A Ltd. Has a weight of 7% in Nifty, its value in Nifty is $\text{Rs.} 28,000$ i.e. $(400,000 \times 0.07)$.
5. If the market price of A Ltd. is $\text{Rs.} 140$, then a traded unit of Nifty involves 200 shares of A Ltd. i.e. $(28,000/140)$.
6. To calculate the futures price, we need to reduce the cost-of-carry to the extent of dividend received. The amount of dividend received is $\text{Rs.} 4000$ i.e. (200×20) . The dividend is received 15 days later and hence compounded only for the remainder of 45 days. To calculate the futures price we need to compute the amount of dividend received per unit of Nifty. Hence we divide the compounded dividend figure by 100.
7. Thus, the futures price is calculated as;

$$F = 4000e^{0.1 \times \frac{60}{365}} - \left(\frac{200 \times 20e^{0.1 \times \frac{45}{365}}}{100} \right) = \text{Rs. } 4025.80$$

Pricing index futures given expected dividend yield

If the dividend flow throughout the year is generally uniform, i.e. if there are few historical cases of clustering of dividends in any particular month, it is useful to calculate the annual dividend yield.

$$F = Se^{(r-q)T}$$

where:

F futures price

S spot index value

r cost of financing

q expected dividend yield

T holding period

Example

A two-month futures contract trades on the NSE. The cost of financing is 10% and the dividend yield on Nifty is 2% annualized. The spot value of Nifty 4000. What is the fair value of the futures contract ?

$$\text{Fair value} = 4000e^{(0.1-0.02) \times (60/365)} = \text{Rs. } 4052.95$$

The cost-of-carry model explicitly defines the relationship between the futures price and the related spot price. As we know, the difference between the spot price and the futures price is called the basis.

Options Contracts, Mechanism and Applications

An option is the right, but not the obligation, to buy or sell a specified amount of commodity, currency, shares index or other financial instrument at an agreed price on or before a specified date in future. An option may also relate to buying or selling a specified number of futures contracts. There are two parties to an options contract. The long who buys the option and the short, who sells or writes it. The long enjoys the right (and not the obligation) which is granted by the seller of the option for a price, called the premium. There are two types of options – calls and puts. A call option gives its holder the right to buy while a put option entails a right to sell for its holder. Options contracts are standardized in respect of the following:

- (a) The underlying asset, which may be a commodity, currency, shares of a company.
- (b) Size of the contract.

(c) Specified price, which is called exercise price or strike price. It may be higher than, lower than or equal to the current price of the underlying asset.

(d) Expiration date - An options contract ceases to grant any right after this date if the option is not exercised. If an option is exercisable only on the expiration date, it is called a European style option. An American style option is one which can be exercised at any time up to the date of expiration.

Contracts for options which are traded on exchanges are designed by the exchanges only, and they contain all details about the underlying asset, size, expiration date etc. The exercise price is able set by the exchange. For example, in case of contracts of options or shares, the exercise price, E , may be higher or lower than, or equal to the current price, P , of the share. Incidentally, if $E < P$, a call option is “in the money”, and a put option is “out-of-the-money”. If $E > P$, the call option is “out-of-the-money” and the put option is “in the money”. If $E = P$, then both call and put options are called “at-the-money”.

Types of Options

There are only two types of options – puts and calls. Although there are always two parties to an options contract, they are always defined from the standpoint of the buyer (owner) of the contract. The buyer of a put has purchased a right to sell. Sounds a bit strange, but that is what a put is. The owner of a put has the right to sell. The buyer of a call has purchased the right to buy. Again this sounds a bit odd, but it is correct. The owner of a call has the right to buy.

Long Seller versus Writer

The buyer of an option has purchased a contract. This is quite easy to understand. But the seller of the contract can be acting in

either of two capacities. In dealing with other securities, the seller can be selling long or short. Selling long means that the party owns the stock or bond and is eliminating his holding.

Option Premium

But the three basic factors that determine an option premium are:

1. Intrinsic Value
2. Time Value and
3. Volatility

Intrinsic value is an option's arithmetically determinable value based on the strike price of the option and the market value of the underlying stock.

Time value reflects the fact that the longer the option has to run until expiration, the greater the premium should be. This is perfectly logical. The right to buy or sell a stock for two months should be worth more than the same privilege for only one month. The third factor namely volatility is also easy to understand. Higher the volatility higher the risk and higher the risk higher the premium. Two terms used frequently in the options are class and series.

Class

A class of options consists of all options of the same type (put or call) covering the same underlying security. All Axis calls comprise a class of options. All Axis puts comprise a different class of options. All Axis calls make up a class.

Series

A series of options is all options of the same class having both the same strike price and the same expiration month. In the one class

of Axis calls, there is a number of different series as each call within that class has a different strike price and/or a different expiration month from any other option within the class. Each individual option is called a series. The total of all puts or calls on a particular stock makes up a class.

Options Derivatives

In simple terms, the options premium is determined by the three factors mentioned earlier, intrinsic value, time value, and volatility.

But there are other, more sophisticated tools used to measure the potential variations of options premiums. They are generally employed by professional options traders and may be of little interest to the individual investor.

These four tools are known as options derivatives. They are:

Delta

Gamma

Theta

Vega

Delta

An options delta is used to measure the anticipated percentage of change in the premium in relation to a change in the price of the underlying security. If a particular call option had a delta of 60% we would expect the option premium to vary by 60% of the change in the underlying stock. If that stock rose 1 point, the option premium should rise approximately 6/10 (60%) of 1 point.

Gamma

Gamma measures the expected change in the delta factor of an option when the value of the price of the underlying security rises. If a particular option had a delta of 60% and a gamma of 5%, an

increase of 1 point in the value of the stock would increase the delta factor by 5% from 60% to 65%.

Theta

The theta derivative attempts to measure the erosion of an option's premium caused by the passage of time. We know that at expiration an option will have no time value and will be worth only the intrinsic value if, in fact, it has any. Theta is designed to predict the daily rate of erosion of the premium. Naturally other factors, such as changes in the value of the underlying stock will alter the premium. Theta is concerned only with the time value. Unfortunately, we cannot predict with accuracy changes in a stock's market value, but we can measure exactly the time remaining until expiration.

Vega

The fourth derivative, Vega is concerned with the volatility factor of the underlying stock. We have pointed out that the volatility varies among different securities. Vega measures the amount by which the premium will rise when the volatility factor of the stock increase. Vega measures the sensitivity of the premium to these changes in volatility. Delta, gamma, theta and vega are very sophisticated tools for predicting changes in an option's premium. They merely take the three factors which determine a premium (price of the stock, passage of time, and volatility), and measure each in an exacting manner. The derivatives vary for each series of options.

Trading Mechanism

The derivatives trading system at NSE, called NEAT-F&O trading system, provides a fully automated screen-based trading for derivatives on a nation-wide basis. It supports an anonymous order driven market, which operates on strict price/ time priority.

It provides tremendous flexibility to users in terms of kinds of orders that can be placed on the system. Various time and price related conditions like Good-till Day, Good-till-cancelled, Good-Till-Date, Immediate or Cancel, Limit/market Price, Stop Loss, etc. can be built into an order. There are four entities in the trading system. The NEAT-F&O trading system distinctly identifies two groups of users. The trading user more popularly known as trading member has access to functions such as, order entry, order matching, order and trade management. The clearing user (clearing member) uses the trader workstation for the purpose of monitoring the trading member(s) for whom he clears the trades. Additionally, he can enter and set limits on positions, which a trading member can take.

Settlement of Futures Contracts

Future contracts have two types of settlements-MTM settlement and the final settlement.

MTM Settlement for Futures: All futures contracts for each member are marked-to-market to the daily settlement price of the relevant futures contract at the end of each day. The profits/losses are computed as the difference between:

- (i) The trade price and the day's settlement price in respect of contracts executed during the day but not squared up,
- (ii) The previous day's settlement price and the current day's settlement price in respect of brought forward contracts,
- (iii) The buy price and the sell price in respect of contracts executed during the day and squared-up.

The CMs who have suffered a loss are required to pay the mark-to-market (MTM) loss amount in cash which is in turn passed on to the CMs who have made a MTM profit. This is known as daily mark-to-market settlement. CMs are responsible to collect and settle the daily MTM profits/losses incurred by the TMs and their clients clearing and settling through them. Similarly, TMs are responsible to collect/pay losses/profits from/to their clients by

the next day. The pay-in and pay-out of the mark-to-market settlement are effected on the day following the trade day. After completion of daily settlement computation, all the open positions are reset to the daily settlement price. Such position becomes the open positions for the next day.

Final Settlement for Futures: On the expiry day of the futures contracts, after the close of trading hours, NSCCL marks all positions of a CM to the final settlement price and the resulting profit/loss is settled in cash. Final settlement loss/profit amount is debited/credited to the relevant CM's clearing bank account on the day following expiry day of the contract.

Settlement Prices for Futures: Daily settlement price on a trading day is the closing price of the respective futures contracts on such day. The closing price for a futures contract is currently calculated as the last half an hour weighted average price of the contract executed in the last half an hour of trading hours. In case future contract is not traded in the last half an hour, the theoretical future price is computed and used as daily settlement price in the F&O segment of NSE. Final settlement price is the closing price of the relevant underlying index/security in the Capital market segment of NSE, on the last trading day of the contract. The closing price of the underlying Index/security is currently its last half an hour weighted average value in the Capital Market Segment of NSE.

Settlement of Options Contracts

Daily Premium Settlement for Options: Buyer of an option is obligated to pay the premium towards the options purchased by him. Similarly, the seller of an option is entitled to receive the premium for the option sold by him. The premium payable amount and the premium receivable amount are netted to compute the net premium payable or receivable amount for each client for each option contract.

Interim Exercise Settlement: Interim exercise settlement takes place only for option contracts on securities. An investor can exercise his in-the-money options at any time during trading hours, through his trading member. Interim exercise settlement is effected for such options at the close of the trading hours, on the day of exercise. Valid exercised option contracts are assigned to short positions in the option contract with the same series (i.e. having the same underlying, same expiry date and same strike price), on a random basis, at the client level. The CM who has exercised the option receives the exercise settlement value per unit of the option from the CM who has been assigned the option contract.

Final Exercise Settlement: Final Exercise settlement is effected for all open long in-the-money strike price options existing at the close of trading hours, on the expiration day of an option contract. All such long positions are exercised and automatically assigned to short positions in option contracts with the same series, on a random basis. The investor who has long in the money options on the expiry date will receive the exercise settlement value per unit of the option from the investor who has been assigned the option contract.

Currency Futures

A currency future, also known as FX future, is a futures contract to exchange one currency for another at a specified date in the future at a price (exchange rate) that is fixed on the purchase date. Currency Futures contracts are legally binding agreement to buy or sell a financial instrument sometime in future at an agreed price. Currency Future contracts are standardized in terms of lots and delivery time. The only variable is the price, which is discovered by the market. Currency Futures contracts have different expiry validity and will expire after the completion of the specified tenure. On NSE the price of a future contract is in terms

of INR per unit of other currency e.g. US Dollars. Currency future contracts allow investors to hedge against foreign exchange risk. Currency Derivatives are available on four currency pairs viz. US Dollars (USD), Euro (EUR), Great Britain Pound (GBP) and Japanese Yen (JPY). Currency options are currently available on US Dollars.

Any resident Indian or company including banks and financial institutions can participate in the futures market. However, at present, Foreign Institutional Investors (FIIs) and Non-Resident Indians (NRIs) are not permitted to participate in currency futures market.

The Indian currency market accounts for around 1% of the total world forex transactions, which stand at about \$4 trillion on a daily basis.

With the introduction of currency derivatives in 2008, the Indian market is poised for further growth by increasing its share in the world forex trade. The spot transactions involving the rupee totalled around \$30 billion in 2010, with the segment accounting for a share of 40% in the total forex turnover in India. This is followed by another 40% in forex swaps, and the rest in the form of outright forward transactions.

The opening of the currency futures was a revolution in the domestic financial markets. It was the beginning of an era marked by a transparent trading mechanism in currencies, aimed at expanding one's portfolio and curtailing losses in businesses due to the risk exposure to changes in currency movements.

With the increase in understanding about the benefits of currency futures trading, the volume on the Indian bourses has risen significantly. From a monthly average turnover of Rs 30,000 crore in January-June 2012 on the currency exchanges, it increased to Rs 45,000 crore in January-June 2013.

As the chart (Currency exchange volume) shows, in June 2013 alone, the average monthly volume jumped sharply to around Rs 63,000 crore. The rise on the currency exchanges is backed by increased awareness about the trade among market participants, along with the broadening horizon and base of USD-INR futures on various bourses internationally.

Global trading of USD-INR pair

The USD-INR pair is now traded internationally on the following exchanges—Chicago Mercantile Exchange, Singapore Exchange, Dubai Gold and Commodities Exchange, Intercontinental Exchange and the Bahrain Stock Exchange. This availability of trading in the pair will strengthen the base of the Indian currency in the world forex markets.

The launch of currency futures in India began with the USD-INR contracts. However, market participation increased over time and demanded the launch of other major global pairs like the EUR-INR, GBP-INR and JPY-INR. Since the currency markets are interconnected, the impact of movement in other currencies is also seen on the rupee.

Hence, the businesses that deal with currencies like the US dollar, Euro, British pound or the Japanese yen, can create a hedge position on currency futures in order to avoid the impact of volatile movement in these currencies.

The market participation in currency futures is only allowed to Indian residents, besides banks, companies and financial institutions. The suggestion to allow foreign institutional investors (FIIs) and NRIs (non-resident Indians) to participate in the currency market could be accepted in the near future and this would certainly lead to a further increase in volume.

Benefits of currency futures

There are a lot of advantages of trading in currency futures, from the transparent price mechanism it offers to hedging, high liquidity, counter-party guarantee, low costs compared with that of banks, standardised contracts, lower margins and electronic settlement.

For those linked directly with the import or export trade, the creation of a hedge on the currencies futures platform can help minimise the risk involved, especially given the current volatility in the rupee. Compared with the currency forward market, futures are also a highly convenient way for a trader to benefit from the change in price movement.

Since its traded on the exchange, a major advantage is that it offers an opportunity to trade in small contracts compared with that in the forward market, thereby making the platform available for investors with a lower capital base.

Hence, investors from all asset classes can benefit from trading on the currency futures platform, and with the lot size of \$1,000 for a USD-INR contract, a retail investor can also hedge his personal currency risk.

Additionally, with currency futures being marked to market on a daily basis, one can exit from one's obligation to buy or sell a currency pair even before the contract's expiry date.

Apart from importers and exporters, the others who can benefit from participating in currency futures are travellers, students who

are studying abroad, retail investors and anyone exposed to the forex market.

While foreign vacations would be expensive for Indian tourists, the country would look like a favourable destination for the foreign vacationer since one dollar currently equals around 63, compared with the below-50 level in mid-2010.

Students who are planning to go abroad for higher studies will also be paying more for their education expenses due to the weakness in the rupee. Hence, utilising currency futures as a platform to lower the foreign currency risk can serve as a safety tool during uncertain financial times.

The availability of currency futures has also widened the choice for the retail investor as far as his investment portfolio is concerned. One must understand that due to the growing global financial integration, volatility in currencies has increased over time.

This is because an economic indicator of one country can have a worldwide impact. In the current context, the monetary policy stance of major global policymakers is driving sentiments in the world markets, thus affecting the currency price movements.

In such circumstances, it is important for businesses or anyone affected by the movement in currencies to hedge and cover the risk.

Introduction to interest rate futures

We all are familiar with forward contracts. They are essentially over-the-counter (OTC) contracts traded on one to one basis among the parties involved, for settlement on a future date. The

terms of these contracts are decided by the parties mutually at the time of their initiation. If a forward contract is entered into through an exchange, traded on the exchange and settled through the Clearing Corporation/ House of the exchange, it becomes a futures contract.

As one of the most important objectives behind bringing the contract to the exchange is to create marketability, futures contracts are standardized contracts so designed by the exchanges as to ensure participation of a wide range of market participants. In other words, futures contracts are standardized forward contracts traded on the exchanges and settled through their clearing corporation/house.

Futures contracts being standardized contracts appeal to a wide range of market participants and are therefore very liquid. On the other hand, the clearing corporation/house, in addition to settling the futures contracts, becomes the counter-party to all such trades or provides unconditional guarantee for their settlement, thereby ensuring financial integrity of the entire system. Therefore, although futures contracts take away the flexibility of the parties in terms of designing the contract, they offer competitive advantages over the forward contracts in terms of better liquidity and risk management. Now, it is simple to comprehend that futures contract on interest rates would be called interest rate futures. Let us look at the Forward Rate Agreements (FRAs) being traded in the OTC market. In case of FRAs, contracting parties agree to pay or receive a specific rate of interest for a specific period, after a specific period of time, on a specified notional amount. No exchange of the principal amount takes place among the parties at any point in time. Now, think about bringing this contract to the exchange. If we bring this FRA to the exchange, it would essentially be renamed as a futures contract. For instance, Eurodollar futures contract (most popular contract globally) is an exchange traded FRA on 3 months Eurodollar deposits rates. To comprehend the product further, now think we are entering into

an FRA on an exchange. First thing would be that we would trade this contract on the exchange in the form of a standard product in terms of the notional amount, delivery and settlement, margins etc. Having entered into the contract, we can reverse the transaction at any point of time. Indeed, having reversed, we can again enter into the contract anytime. Therefore, these exchange traded FRAs (futures contracts) would be very liquidity. Further, in this contract, clearing corporation/ house would bear the counterparty risk.

The transaction mentioned above is pretty simple. But, world does not trade the interest rate futures so simply. Indeed, product designs are much more complicated and they are different both at the long and short end of the maturity curve. Let us have a look at a few global products on interest rate futures.

Interest rate futures in the global context

Most of the global markets trade futures on two underlyings - one at the long end (maturity of 10 years or more) and another at the short end (maturity up to one year) of the yield curve. The futures on the long end of the yield curve are called the Long Bond Futures and futures at the short end of the yield curve are called the T-Bill Futures and Reference Rate Futures. Some markets do trade futures on underlyings with multiple maturities say of 2 years and 5 years as well, but volumes in these products speak for their poor receptivity by market participants. In other words, most of the volumes in the global markets are concentrated on derivatives with one underlying at the long end and one underlying at the short end of the yield curve.

In global markets, underlying for the long bond futures is a notional coupon bearing bond. These contracts are generally physically settled but some markets do have cash settled products. For instance, Singapore trades 5 years gilt futures, which are cash settled. Chicago Board of Trade (CBOT) also trades

futures on the 10 year Municipal Bond Index, which is also a cash settled product. Methodology of the physically settled products is beyond the scope of this work. The simple thing to understand here is that there are concepts like basket of deliverable bonds, conversion factors, cheapest to deliver bond, delivery month etc. Price quote for long bond futures is the clean price of the notional bond, across the markets. On the short end of the yield curve, global markets have two kinds of products – T-Bill futures and reference rate futures.

T-Bill futures are essentially the futures on the notional TBills, which are physically settled. But, reference rate futures are the futures on reference rates like London Inter-bank Offer Rates (LIBOR) and are cash settled. Over a period of time, these reference rate futures have rendered the T-Bill futures out of fashion. Possible reasons for this phenomenon are that they are easy to comprehend, have very wide participation from across the globe and are cash settled. The success of reference rate futures may be measured by the volumes they command in the international markets. Indeed, all major markets across the globe trade them. For instance, Japan trades futures on the Japan inter-bank offer rates (JIBOR), Singapore trades futures on Singapore inter-bank offer rates (SIBOR), Hong Kong trades futures on Hong Kong inter-bank offer rates (HIBOR).

Structure of the product in the Indian Market

RBI vide its circular RBI/2013-14/402 IDMD.PCD. 08/14.03.01/2013-14 dated December 5, 2013 has announced introduction of cash settled Interest Rate Futures (IRF) on 10-year Government of India security.

Eligible instruments

The Interest Rate Futures deriving value from the following underlying are permitted on the recognised stock exchanges:

- (i) 91-Day Treasury Bills;
- (ii) 2-year, 5-year and 10-year coupon bearing notional Government of India security, and
- (iii) Coupon bearing Government of India security

Eligible entities and conditions

Persons resident in India are permitted to purchase or sell Interest Rate Futures referred above both for hedging an exposure to interest rate risk or otherwise.

Foreign Institutional Investors, registered with Securities and Exchange Board of India, are permitted to purchase or sell Interest Rate Futures referred to 3 of these directions, subject to the condition that the total gross long (bought) position in the spot Government securities market and Interest Rate Futures markets taken together does not exceed the aggregate permissible limit for investment in Government securities and the total gross short (sold) position of each Foreign Institutional Investor in Interest Rate Futures, does not exceed their long position in the Government securities and in Interest Rate Futures at any point in time.

Necessary conditions of the Interest Rate Futures contract

Contracts for settlement by Physical Delivery

The 10-year Interest Rate Futures contract shall satisfy the following requirements:

- (a) The contract shall be on coupon bearing notional 10-year Government of India security.
- (b) The coupon for the notional 10-year Government of India security shall be 7% per annum with semi-annual compounding.
- (c) The contract shall be settled by physical delivery of deliverable grade securities using the electronic book entry

system of the existing Depositories, namely, National Securities Depositories Ltd. and Central Depository Services (India) Ltd. and Public Debt Office of the Reserve Bank.

- (d) Deliverable grade securities shall comprise Government of India securities maturing at least 7.5 years but not more than 15 years from the first day of the delivery month with a minimum total outstanding stock of 10,000 crore.
- (e) Subject to clause (d) of this sub paragraph, exchanges may select their own basket of securities for delivery from the deliverable grade securities in accordance with guidelines issued by the Securities Exchange Board of India from time to time.

Contracts to be Cash Settled

The 91-Day Treasury Bill Futures shall satisfy the following requirements:

- (a) The contract shall be on 91-Day Treasury Bills issued by the Government of India.
- (b) The contract shall be cash settled in Indian Rupees.
- (c) The final settlement price of the contract shall be based on the weighted average price/yield obtained in the weekly auction of the 91-Day Treasury Bills on the date of expiry of the contract.

The 2-year and 5-year Interest Rate Futures contract shall satisfy the following requirements:

- (a) The 2-year and 5-year Interest Rate Futures contracts shall be on coupon bearing notional 2-year and 5-year Government of India security respectively.
- (b) The coupon for the notional 2-year Government of India security shall be 7% per annum and that of the notional 5-year Government of India security shall be 7% per annum with semi-annual compounding.
- (c) The contracts shall be cash-settled in Indian Rupees.

- (d) The final settlement price of the 2-year and 5-year Interest Rate Futures contracts shall be based on the yields on basket of securities for each Interest Rate Futures contract specified by the respective stock exchange in accordance with guidelines issued by the Securities Exchange Board of India from time to time.
- (e) The yields of the Government of India securities [indicated at (d) above] shall be polled and the same shall be as per the guidelines issued by the Reserve Bank of India from time to time.

The cash settled Interest Rate Futures on 10-year Government of India security shall have as underlying:

(i) coupon bearing Government of India security

Or

(ii) coupon bearing notional 10-year Government of India security with settlement price based on basket of securities.

The 10-year Interest Rate Futures with coupon bearing Government of India security as underlying shall satisfy the following requirements:

- (a) The underlying shall be a coupon bearing Government of India security of face value Rs. 100 and residual maturity between 9 and 10 years on the expiry of futures contract. The underlying security within these parameters shall be, as decided by stock exchanges in consultation with the Fixed Income Money Market and Derivatives Association (FIMMDA).
- (b) The contract shall be cash-settled in Indian rupees.
- (c) The final settlement price shall be arrived at by calculating the weighted average price of the underlying security based on prices during the last two hours of the trading on Negotiated Dealing System-Order Matching (NDS-OM) system. If less than 5 trades are executed in the underlying

security during the last two hours of trading, then FIMMDA price shall be used for final settlement.

The 10-year Interest Rate Futures with coupon bearing notional 10-year Government of India security as underlying and settlement price based on basket of securities shall satisfy the following requirements:

- (a) The underlying shall be coupon bearing notional 10-year Government of India security with face value of Rs. 100. For each contract, there shall be basket of Government of India securities, with residual maturity between 9 and 11 years on the day of expiry of futures contract, with appropriate weight assigned to each security in the basket. Exchanges shall determine criteria for including securities in the basket and determining their weights.
- (b) The underlying security shall have coupon with semi-annual compounding.
- (c) The contract shall be cash-settled in Indian rupees.
- (d) The final settlement price shall be based on average settlement yield which shall be weighted average of the yields of securities in the underlying basket. For each security in the basket, yield shall be calculated by determining weighted average yield of the security based on last two hours of the trading in NDS-OM system. If less than 5 trades are executed in the security during the last two hours of trading, then FIMMDA price shall be used for determining the yields of individual securities in the basket.

Disclosure and Surveillance requirements

The disclosure and surveillance of all transactions in the Interest Rate Futures market shall be carried out in accordance with the guidelines issued by the Securities and Exchange Board of India and the Reserve Bank of India from time to time.