NCFM

NSE's CERTIFICATION IN FINANCIAL MARKETS

SECURITIES MARKET (ADVANCED) MODULE

NATIONAL STOCK EXCHANGE OF INDIA LIMITED

Test Details:

Sr. No.	Name of Module	Fees (Rs.)	Test Duration (in minutes)	No. of Questions	Maximum Marks	Pass Marks (%)	Certificate Validity
1	Financial Markets: A Beginners' Module *	1500	120	60	100	50	5
2	Mutual Funds : A Beginners' Module	1500	120	60	100	50	5
3	Currency Derivatives: A Beginner's Module	1500	120	60	100	50	5
4	Equity Derivatives: A Beginner's Module	1500	120	60	100	50	5
5	Interest Rate Derivatives: A Beginner's Module	1500	120	60	100	50	5
6	Commercial Banking in India: A Beginner's Module	1500	120	60	100	50	5
7	Securities Market (Basic) Module	1500	105	60	100	60	5
8	Capital Market (Dealers) Module *	1500	105	60	100	50	5
9	Derivatives Market (Dealers) Module *	1500	120	60	100	60	3
10	FIMMDA-NSE Debt Market (Basic) Module	1500	120	60	100	60	5
11	Investment Analysis and Portfolio Management Module	1500	120	60	100	60	5
12	Fundamental Analysis Module	1500	120	60	100	60	5
13	Securities Market (Advanced) Module	1500	120	60	100	60	5
14	Banking Sector Module	1500	120	60	100	60	5
15	Insurance Module	1500	120	60	100	60	5
16	Macroeconomics for Financial Markets Module	1500	120	60	100	60	5
17	NISM-Series-I: Currency Derivatives Certification Examination	1000	120	60	100	60	3
18	NISM-Series-II-A: Registrars to an Issue and Share Transfer Agents – Corporate Certification Examination	1000	120	100	100	50	3
19	NISM-Series-II-B: Registrars to an Issue and Share Transfer Agents – Mutual Fund Certification Examination	1000	120	100	100	50	3
20	NISM-Series-IV: Interest Rate Derivatives Certification Examination	1000	120	100	100	60	3
21	NISM-Series-V-A: Mutual Fund Distributors Certification Examination *	1000	120	100	100	50	3
22	NISM-Series-VI: Depository Operations Certification Examination	1000	120	100	100	60	3
23	NISM Series VII: Securities Operations and Risk Management Certification Examination	1000	120	100	100	50	3
24	Certified Personal Financial Advisor (CPFA) Examination	4000	120	80	100	60	3
25	NSDL–Depository Operations Module	1500	75	60	100	60 #	5
26	Commodities Market Module	1800	120	60	100	50	3
27	Surveillance in Stock Exchanges Module	1500	120	50	100	60	5
28	Corporate Governance Module	1500	90	100	100	60	5
29	Compliance Officers (Brokers) Module	1500	120	60	100	60	5
30	Compliance Officers (Corporates) Module	1500	120	60	100	60	5
31	Information Security Auditors Module (Part-1)	2250	120	90	100	60	2
	Information Security Auditors Module (Part-2)	2250	120	90	100	60	
32	Options Trading Strategies Module	1500	120	60	100	60	5
33	FPSB India Exam 1 to 4**	2000 per exam	120	75	140	60	NA
34	Examination 5/Advanced Financial Planning **	5000	240	30	100	50	NA
35	Equity Research Module ##	1500	120	65	100	55	2
36	Issue Management Module ##	1500	120	80	100	55	2
37	Market Risk Module ##	1500	120	50	100	55	2
38	Financial Modeling Module ###	1000	150	50	75	50	NA

* Candidates have the option to take the tests in English, Gujarati or Hindi languages.

\# Candidates securing 80% or more marks in NSDL-Depository Operations Module ONLY will be certified as 'Trainers'.

** Following are the modules of Financial Planning Standards Board India (Certified Financial Planner Certification)

- FPSB India Exam 1 to 4 i.e. (i) Risk Analysis & Insurance Planning (ii) Retirement Planning & Employee Benefits (iii) Investment Planning and (iv) Tax Planning & Estate Planning
- Examination 5/Advanced Financial Planning

Modules of Finitiatives Learning India Pvt. Ltd. (FLIP)

Module of IMS Proschool

The curriculum for each of the modules (except Modules of Financial Planning Standards Board India, Finitiatives Learning India Pvt. Ltd. and IMS Proschool) is available on our website: www.nseindia.com > Education > Certifications.

Preface

The **National Stock Exchange of India Ltd. (NSE)**, is a global leader in securities trading. NSE has set up a sophisticated electronic trading, clearing and settlement platform and its infrastructure serves as a role model for the securities industry. It has introduced various products and services for the securities markets.

NSE has four broad segments, the Wholesale Debt Market Segment (commenced in June 1994), Capital Market Segment (commenced in November 1994), Futures and Options Segment (commenced June 2000) and the Currency Derivatives segment (commenced in August 2008). Various products traded on the NSE include, equity shares, debentures, warrants, mutual funds, government securities, futures and options on indices and single stocks, interest rate futures, currency futures and options etc.

Securities markets play an extremely important role in promoting and sustaining the growth of an 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. It acts as a major catalyst in transforming the economy into a more efficient, innovative and competitive marketplace.

At NSE, it has always been our endeavor to continuously upgrade the skills and proficiency of participants and students of the securities markets. This module has been developed for those of you who are keen to have a broad and comprehensive knowledge about the securities markets in India. While it not being a necessary criteria, it is advisable to have cleared the NCFM Beginners modules before taking up this module.

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Distribution of weights of the

Securities Market (Advanced) Module Curriculum

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8	INTEREST RATE DERIVATIVES	8
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11	DERIVATIVES - ACCOUNTING	1
12	DERIVATIVES - TAXATION	1
13	INTRODUCTION TO MUTUAL FUNDS	5
14	MUTUAL FUNDS - STRUCTURE & OPERATIONS	6
15	MUTUAL FUNDS - INVESTORS' TRANSACTIONS	5
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17	MF EVALUATION - RETURN & RISK METRICS	6
18	MF EVALUATION – QUALITATIVE APPROACHES	5
19	MUTUAL FUNDS - TAXATION	1
20	MUTUAL FUND - INFORMATION SOURCES	1
21	MUTUAL FUNDS - INVESTOR PROTECTION	1

Note: Candidates are advised to refer to NSE's website: www.nseindia.com, click on 'Education' link and then go to 'Updates & Announcements' link, regarding revisions/updations in NCFM modules or launch of new modules, if any.

This book has been developed for NSE by Mr. Sundar Sankaran, Director, Finberry Academy Pvt. Ltd.

PART 1: CAPITAL MARKETS

Chapter 1: Introduction To Capital Market

1.1 Fundamental Role

Business, trade and commerce need finance for their working capital needs, as well as to set up new projects. The finance can come from Governments, multi-lateral funding agencies, domestic financial institutions, banks, capital market etc.

The capital market has the following major components:

1.1.1 Equity Capital

Investors owning equity shares of a company are owners of the company. They are issued equity shares of the company, as evidence of such ownership.

Equity investors are not entitled to any fixed return or repayment of capital. However, they are entitled to the benefits that arise out of the performance of the company. If the business fails, they may lose the entire investment. Of all the financiers, they take the most risk.

1.1.2 Debt Capital

Investors in the debt of a company are not owners of the company – they are more in the nature of lenders to the company. They are issued debentures or other debt securities, as evidence of the moneys invested.

Investors in debt securities are entitled to be paid an interest and repaid their capital as per terms agreed at the time of investment. The debt capital is to be serviced, irrespective of whether or not the company is profitable.

Debt, which is repayable within a short time period of 1 year, is called *money market.* Money market is thus a segment of the debt market.

The inter-bank money market for very short tenors of 1 to 3 days is called *call money market*. Slightly longer money market for tenors of 4 to 15 days is called *notice money market*.

1.1.3 Preference Capital

Investors in preference capital of a company are considered to be owners of the company, as per the Companies Act, 1956. They are issued preference shares of the company, as evidence of such ownership. However, their ownership rights are much lesser than those of equity investors.

Preference investors take more risk than debt investors, but less risk than equity. Like debt, they are entitled to a fixed return – but this is payable only out of the profits of the company. If, in a year, the company does not have adequate profits, the dividend will not be payable (in the case of *non-cumulative* preference shares) or be payable in future years (in the case of *cumulative* preference shares).

Besides the fixed return, they may also be entitled to additional *returns*, depending on profits of the company (in the case of *participating* preference shares). Preference shares, which are not entitled to such additional share on the profits of the company, are called *non-participating* preference shares.

Equity shares, debentures, preference shares etc. are called *securities*. Parties that invest in these securities are the *investors.* The companies that need the money issue securities to the investors. Therefore, the companies are called *issuers.* The capital market performs a useful role in bringing issuers and investors together, thus ensuring flow of funds to businesses, trade and commerce.

1.2 Capital Market Segments

1.2.1 Primary Market

Primary market provides an opportunity to the issuers of securities, both Government and corporations, to raise funds through issue of securities. The securities may be issued in the domestic or international markets, at face value, or at a *discount* (i.e. below their face value) or at a *premium* (i.e. above their face value).

The primary market issuance is done either through a public issue or private placement. Under the Companies Act, 1956, an issue is referred to as public, if it results in allotment of securities to 50 investors or more. However, when the issuer makes an issue of securities to a select group of persons not exceeding 49, and if it is neither a *rights issue* (i.e. issued only to existing investors) nor a *public issue* (i.e. made available to any member of the general public to invest in), it is called a private placement.

When a company makes a public issue of its equity shares for the first time, it is called an *initial public offer (IPO).* Subsequent issues are *follow-on public offers (FPO)*.

1.2.2 Secondary Market

Secondary market refers to a market, where securities that are already issued by the Government or corporations, are traded between buyers and sellers of those securities. The securities traded in the secondary market could be in the nature of equity, debt, derivatives etc.

As will be clear from the above, that primary market transactions directly affect the issuing company's balance sheet (i.e. the financial statement of its assets and liabilities as on any date). For instance, if the company issues equity shares, the equity share capital in its balance-sheet will increase.

On the other hand, a secondary market transactions in those equity shares have no impact on the issuing company's balance sheet. The ownership of the shares will move from the seller to the buyer – but the issuing company's balance sheet is not affected.

1.3 Products / Instruments

The broad types of capital viz. equity, debt and preference were introduced earlier. Some products / instruments within these are listed below:

1.3.1 Differential Voting Rights (DVR) Shares

Companies are permitted to issue shares with differential rights as to voting, dividend or otherwise. DVR is a tool for companies to attract equity capital, while minimizing the dilution of promoters' control over the companies.

1.3.2 Global Depository Receipt (GDR) / American Depository Receipt (ADR)

Foreign investors investing in the Indian stock markets need to comply with various regulations of the securities market regulator, the Securities and Exchange Board of India (SEBI) and the central bank, the Reserve Bank of India (RBI). Further, their investments are settled through the Indian settlement system, where receipts and payments are made in Indian rupees.

GDRs / ADRs are issued to international investors and are listed on international stock exchanges. Each GDR / ADR represents a certain number of underlying equity shares in a company. Therefore, while it derives its value from the Indian company's share, the international investor can buy and sell them in international exchanges without having to convert receipts and payments into Indian rupees.

1.3.3 Convertible Preference Shares

These are preference shares that are convertible into equity shares. Depending on the terms of issue, they are either compulsorily convertible or optionally convertible.

1.3.4 Debentures / Bonds

A form of debt security, they are issued by companies. They may be secured against fixed assets, in which case these are called *secured debentures*. Others are unsecured. As with preference shares the debentures may be convertible (compulsorily or optionally) or they may be non-convertible.

1.3.5 Foreign Currency Convertible Bonds

These are debt securities issued by companies and denominated in foreign currency. Further, they are compulsorily or optionally convertible into equity shares of the company.

1.3.6 Government Securities

Issued by the Government of India, they take care of the Government's requirement of funds. Further, the yield on government securities in the market sets the benchmark for yields on other debt securities.

1.3.7 Treasury Bills

Treasury Bills are short term (up to one year) borrowing instruments of the Government of

India. RBI issues T-Bills for three different maturities: 91 days, 182 days and 364 days. In the secondary market, T-Bills are available for various maturities.

1.3.8 Certificate of Deposit (CD)

These are unsecured debt securities issued by banks (upto 1 year maturity) or financial institutions (1 to 3 years maturity).

1.3.9 Commercial Paper (CP)

Companies and financial institutions issue these unsecured debt securities for 1-day to 270 days maturity, to meet their working capital requirements.

1.3.10 Call Money / Notice Money / Term Money

This is an inter-bank market for short term funds. Call money is for 1 day, notice money is for 1 to 14 days and term money is for more than 14 days.

1.3.11 Repo / Reverse Repo

A repo agreement is the sale of a security with a commitment to repurchase the same security as a specified price and on specified date. The difference between the two prices is effectively the borrowing cost for the party selling the security as part of the first leg of the transaction.

Reverse repo is purchase of security with a commitment to sell at predetermined price and date. The difference between the two prices is effectively interest income for the party buying the security as part of the first leg of the transaction.

A repo transaction for party would mean reverse repo for the second party. As against the call money market where the lending is totally unsecured, the lending in the repo is backed by a simultaneous transfer of securities.

1.4 Institutions & Intermediaries – Roles & Regulators

Capital market activities create the need for different kinds of institutions. A brief on these institutions follows:

1.4.1 Stock Exchange

The National Stock Exchange (NSE) is India's premier stock exchange. A critical role is to offer a platform for secondary market trades. NSE provides trading in four different segments - Wholesale Debt Market, Capital Market, Futures and Options and Currency Derivatives Segment.

1) ***Wholesale Debt Market (WDM) Segment***

   This segment at NSE commenced its operations in June 1994. It provides the trading platform for wide range of debt securities which includes State and Central Government securities, T-Bills, PSU Bonds, Corporate debentures, Commercial Papers, Certificate of Deposits etc.

2) *Capital Market (CM) Segment*

This segment at NSE commenced its operations in November 1995. It offers a fully automated screen based trading system, known as the National Exchange for Automated Trading (NEAT) system. Various types of securities e.g. equity shares, warrants, debentures etc. are traded on this system.

3) *Futures & Options (F&O) Segment*

This segment provides trading in derivatives instruments like index futures, index options, stock options, and stock futures, and commenced its operations at NSE in June 2000.

4) *Currency Derivatives Segment (CDS) Segment*

This segment at NSE commenced its operations on August 29, 2008, with the launch of currency futures trading in US Dollar-Indian Rupee (USD-INR). '*Interest rate futures*' was another product made available for trading on this segment with effect from August 31, 2009.

NSE, through its reach across the country, has provided geographic spread to India's investment eco-system. The stock exchange appoints brokers, who are responsible for executing trades within the terms and conditions set by the stock exchange. Stock exchanges are regulated by SEBI.

1.4.2 Clearing Corporation

Once trades are executed, their clearing and settlement are handled by the clearing corporation which may operate as an independent entity or a subsidiary of the exchange.

The National Securities Clearing Corporation Ltd. (NSCCL), a wholly owned subsidiary of NSE, is responsible for clearing and settlement of trades executed at the NSE. As part of its role, NSCCL provides financial guarantee for all the settlements. This takes care of any counter-party risk. Further, NSCCL helps in managing the risk in the market through an effective margining system.

CRISIL has assigned its highest corporate credit rating of 'AAA' to the National Securities Clearing Corporation Ltd (NSCCL). 'AAA' rating indicates highest degree of strength with regard to honoring debt obligations. The rating also factors in NSCCL's rigorous risk management controls and adequate settlement guarantee cover.

Clearing corporations are regulated by SEBI.

1.4.3 Merchant Bankers / Investment Bankers

Issuing companies mobilise money from investors through issue of securities in the primary market. Merchant bankers assist companies in handling the issue. Merchant Bankers are regulated by SEBI.

1.4.4 Underwriters

The success of a public issue many a times depends on the prevailing sentiment in the markets. Companies and their merchant bankers prefer the certainty that the expected funds will be mobilized. This certainty is brought in by appointing Underwriters.

Every underwriter commits to bring in an agreed amount as part of the issue. Thus, if the targeted money is not mobilized in the issue, the underwriters bring in the funds to bail out the issue.

Underwriters are regulated by SEBI.

1.4.5 Registrar & Transfer Agents (RTA)

The RTA keeps a record of the share-holders and their share-holding in the company. In a public issue, RTA is responsible for allotting shares to applicants on the basis of allotment formula that is finalized between the company, its merchant banker and the stock exchange. The RTA also assists companies in executing various corporate actions such as dividend payments, rights issues (issue of new shares at an agreed price to existing investors) and bonus issues (issue of new shares, free, to existing investors).

RTAs are regulated by SEBI.

1.4.6 Depository

Although a company issues securities as part of its resource mobilization exercise, the investor is rarely given a physical certificate. It is normal practice for investors to have a depository account, into which their investments are credited; when they sell any part of their portfolio, the corresponding investments are reduced from their depository account. Thus, a depository account serves the same purpose for securities, as a bank account serves for money.

NSE, along with some other institutions, promoted India's first depository, National Securities Depository Ltd (NSDL). Central Depository Services (India) Ltd is the other depository that operates in the country.

The depositories have made instantaneous electronic transfer of securities possible. Demat (Dematerialised) settlement has eliminated the bad deliveries and associated problems which existed in the physical settlement of securities transactions in the country.

To prevent physical certificates from sneaking into circulation, it has been made mandatory for all newly issued securities to be compulsorily traded in dematerialised form. Now, the public listed companies making IPO of any security for Rs.10 crore or more have to make the IPO only in dematerialised form.

Depositories are regulated by SEBI.

1.4.7 Mutual Funds

Mutual Funds are vehicles to mobilise funds from investors, through various schemes. The

funds are then invested in line with the scheme guidelines, for the benefit of investors. This is discussed in detail in Part III of this Workbook.

Mutual Funds in India are regulated by SEBI.

1.4.8 Venture Capital Funds & Private Equity Funds

Businesses need to reach a certain size, before they are in a position to mobilize funds from the public at large. Their resource requirements until then can be met through Venture Capital Funds and Private Equity Funds. The Venture Capital funds invest at a very early stage in a company, and are prepared to take the risk of the venture failing. Private Equity funds tend to invest at a later stage, after the business has demonstrated some progress in executing its business model. At times, the difference between these two categories of funds is lost in the market.

Venture Capital Funds need to register with SEBI. Foreign venture capital investors are also regulated by RBI.

1.4.9 Foreign Institutional Investors (FII)

Institutional investors are organizations who invest their own funds or pool sums of money from investors and invest those sums in investible assets such as equity, debt, government securities, commodities etc. FIIs are institutional investors from or registered in a country outside of the one in which they are currently investing. FIIs invest their proprietary (own) funds or pool money and invest on behalf of "broad based" funds, corporates, foreign individuals etc.

FIIs are entitled to operate as such, based on their registration with SEBI and the RBI. Detailed eligibility and operating guidelines exist for FIIs (can be found on SEBI and RBI websites).

Investments by FIIs enjoy full capital account convertibility. They can invest in a company under portfolio investment route upto 24% of the paid up capital of the company. This can be increased up to the sectoral cap / statutory ceiling, as applicable to the Indian companies concerned, by passing a resolution of its Board of Directors followed by a special resolution to that effect by the company at its general body.

FIIs are regulated by both SEBI and RBI.

1.4.10 Insurance Companies

Life insurance policies that are taken to cover the lives of individuals are typically of long tenors. Often they extend over several decades. Insurance companies invest the funds available with them in the primary and secondary markets. Life insurance companies thus become a source of long term funds in the capital market.

Insurance companies are regulated by Insurance Regulatory & Development Authority (IRDA). For their operations in the capital market, they also need to comply with the capital market regulations of SEBI.

1.4.11 Pension Funds

People look towards pension to give them a regular stream of income during their retirement years. The regulatory framework in the area is still evolving.

Anyone can buy an annuity product from an insurance company, by paying a lumpsum amount. Companies too can buy such contracts from insurance companies, on behalf of employees. The annuity payments from the insurance company under the contract fulfills the need for the regular stream of income for a retired employee. These operations of insurance companies are regulated by IRDA.

New Pension Scheme (NPS) is a pension scheme regulated by the Pension Fund Regulatory and Development Authority (PFRDA). The NPS provides for regular contributions by individuals or employers of individuals towards a pension plan. The contributions accumulate during the earning years of the individual. Towards retirement, the accumulations are to be used to buy an annuity from an insurance company.

Like insurance, pension funds are a source of long term funds for the capital market. As seen above, different aspects of pension are regulated by PFRDA and IRDA. Pension funds also need to comply with the capital-market related regulations of SEBI while investing in the markets.

1.5 Indices

1.5.1 Role

Indices are meant to capture the overall behavior of a market. As part of the index construction, a group of assets that trade in the market are identified and their role in the computation of the index is also decided upon. Thus, the value of those assets, mixed together as per the set computation process, yields the value of the index at any point of time.

S&P CNX Nifty (Nifty) is a leading stock market index of India that captures the share price behavior of a portfolio of 50 of India's blue chip, large companies which are the most liquid in the market. The index is calculated real-time on all days that the NSE is open. A discussion on its computation follows.

1.5.2 S&P CNX Nifty

The S&P CNX Nifty is owned and managed by India Index Services and Products Ltd. (IISL), which is a joint venture between the National Stock Exchange (NSE) and CRISIL. IISL has a licensing and marketing agreement with Standard & Poor's, who is a world leader in index services.

S&P CNX Nifty is a well diversified 50 stock index accounting for 22 sectors of the economy. The index set of 50 stocks is selected based on the following criteria:

Domicile

The company must be domiciled in India and trade on the NSE.

Eligible Securities

All common shares listed on the NSE (which are of equity and not of a fixed income nature) are eligible for inclusion in the S&P CNX Nifty index.

Convertible stock, bonds, warrants, rights, and preferred stock that provide a guaranteed fixed return are not eligible.

Float

Companies eligible for inclusion in the S&P CNX Nifty should have at least 10% of their stock available to investors (*float*). For this purpose, float is stocks which are not held by the promoters and associated entities (where identifiable) of such companies.

Float Adjusted Market Capitalisation

Market Capitalisation of a company = Closing price of the company's share * Number of outstanding shares of the company.

Float-adjusted Market Capitalisation of a company = Closing price of the company's share * Number of shares of the company available to investors (float).

Companies eligible for inclusion in the S&P CNX Nifty must have at least twice the float-adjusted market capitalization of the current smallest index constituent.

Liquidity

The security should have traded at an average impact cost of 0.50% or less during the previous six months, for 90% of the observations.

Impact cost is the mark up suffered, while buying/selling the desired quantity of the security, as compared to its ideal price viz. (best buy + best sell)/2.

Other Variables

A company which comes out with an IPO is eligible for inclusion in the index if it fulfills the normal eligibility criteria for the index - impact cost, float-adjusted market capitalization and float -- for a three-month period instead of a six-month period.

The base period for the S&P CNX Nifty index is November 3, 1995, which marked the completion of one year of operations of NSE's Capital Market Segment. The base value of the index has been set at 1000, and a base capital of Rs. 2.06 trillion.

The S&P CNX Nifty index is computed by dividing the float-adjusted market capitalization of the index component securities as of current date (MCn) by the float-adjusted market capitalization of the same securities as of initial date (MC1) multiplied by the index value as of initial date (I1).

An Index Policy Committee is involved in the framing of policy and guidelines for managing the S&P CNX Nifty. The Index Maintenance Subcommittee makes all decisions on additions and deletions of companies in the index.

1.5.3 Other IISL Indices

The following are the other major IISL Indices and their composition:

CNX Nifty Junior	The next rung of 50 liquid securities after S&P CNX Nifty is the CNX Nifty Junior. It may be useful to think of the S&P CNX Nifty and the CNX Nifty Junior as making up the 100 most liquid stocks in India.
CNX 100	A diversified 100 stock index accounting for 35 sectors of the economy.
S&P CNX 500	India's first broadbased benchmark of the Indian capital market. The S&P CNX 500 companies are disaggregated into 72 industry indices viz. S&P CNX Industry Indices. Industry weightages in the index reflect the industry weightages in the market. For e.g. if the banking sector has a 5% weightage in the universe of stocks traded on NSE, banking stocks in the index would also have an approx. representation of 5% in the index.
CNX Midcap	100 mid cap stocks are part of the index
Nifty Midcap 50	50 stocks are selected based on the following criteria: • Stocks with average market capitalization ranging from Rs. 1000 crores to Rs. 5000 crores at the time of selection are included. • Stocks which are not part of the derivatives segment are excluded. • Stocks which form part of the S&P CNX Nifty index are excluded.
S&P CNX Defty	This is the S&P CNX Nifty, but measured in dollars. It is calculated as follows: S&P CNX Nifty at time t * Exchange rate as on base date ÷ Exchange rate at time t

1.6 Capital Assets Pricing Model (CAPM)

The model lays down a framework to view risk in equities. It states that there are two risks in investing in equity.

- ***Systematic risk***

  This is inherent to equity investments e.g. the risk arising out of political turbulence, inflation etc. It would affect all equities and therefore cannot be avoided.

- ***Non-systematic* risk**

  This is unique to a company e.g. risk that a key pharma compound will not be approved or the risk that a high performing CEO leaves the company. Non-systematic risk can be minimized by holding a diversified portfolio of investments.

According to CAPM, since investors can diversify away their non-systematic risks, they have to be compensated only for systematic risk. *Beta* is a measure of systematic risk (β).

Based on the share price of a specific company over a long period of time (say, 5 years), periodic (say, daily) returns can be measured. Similarly, the daily returns on a diversified equity index can be measured for the same period. Now, it is possible to measure the sensitivity of the returns on the share to the returns on the equity index. This is the beta of the company's shares.

For the statistically inclined readers,

β = Covariance (Index Returns, Stock Returns) ÷ Variance (Index Returns).

The significance of Beta is in its implication. Suppose Beta of a company is calculated to be 1.2. It means that, based on historical returns, if the equity index were to move by 1%, shares of this company are likely to move by 1.2.

The market itself has a beta value of 1; in other words, its movement is exactly equal to itself (a 1:1 ratio). Stocks may have a beta value of less than, equal to, or greater than one. An asset with a beta of 0 means that its price is not at all correlated with the market; that asset is independent. A positive beta means that the asset generally tracks the market. A negative beta shows that the asset inversely follows the market; the asset generally decreases in value if the market goes up.

1.7 Reforms in Indian Securities Markets

Over a period, the Indian securities market has undergone remarkable changes and grown exponentially, particularly in terms of resource mobilisation, intermediaries, the number of listed stocks, market capitalisation, turnover and investor population. The following paragraphs list the principal reform measures undertaken since 1992.

1.7.1 Creation of Market Regulator

Securities and Exchange Board of India (SEBI), the securities market regulator in India, was established under SEBI Act 1992, with the main objective and responsibility for :

- protecting the interests of investors in securities;
- promoting the development of the securities market; and
- regulating the securities market.

1.7.2 Screen Based Trading

Prior to setting up of NSE, the trading on stock exchanges in India was based on an open outcry system. The system was inefficient and time consuming because of its inability to provide immediate matching or recording of trades. In order to provide efficiency, liquidity and transparency, NSE introduced a nation-wide on-line fully automated screen based trading system (SBTS) on the CM segment on November 3, 1994.

1.7.3 Reduction of Trading Cycle

Earlier, the trading cycle for stocks, based on type of securities, used to vary between 14 days to 30 days and the settlement involved another fortnight. The Exchanges, however, continued to have different weekly trading cycles, which enabled shifting of positions from one Exchange to another. It was made mandatory for all Exchanges to follow a uniform weekly trading cycle in respect of scrips not under rolling settlement.

In December 2001, all scrips were moved to rolling settlement and the settlement period was reduced progressively from T+5 to T+3 days. From April 2003 onwards, T+2 days settlement cycle is being followed.

1.7.4 Equity Derivatives Trading

In order to assist market participants in managing risks better through hedging, speculation and arbitrage, the Securities Contract (Regulations) Act, 1956 was amended in 1995 to lift the ban on options in securities. Trading in derivatives, however, took off in 2000 with the launch of index futures after suitable legal and regulatory framework was put in place. The market presently offers index futures, index options, single stock futures and single stock options.

1.7.5 Demutualisation

Historically, stock exchanges were owned, controlled and managed by a set of brokers. They set the rules and regulations which they were expected to follow. This led to a conflict of interest. In case of disputes, integrity of the stock exchange suffered. NSE, however, was set up with a pure demutualised governance structure i.e. ownership, management and trading rights were distributed between three different sets of entities. NSE's ownership vested in the hands of banks, insurance companies, financial institutions, its management was drawn from professionals and brokers were offered trading rights on the exchange. This separation of ownership, management and trading rights eliminated conflict of interest and provided transperancy in operations. Currently, all the stock exchanges in India have a demutualised set up.

1.7.6 Dematerialisation

As discussed earlier, the old settlement system was inefficient due to the time lag for settlement. Another source of inefficiency and risk was the need for physical movement of physical securities. Physical securities could be stolen, forged, mutilated, lost in transit etc. To obviate these problems, the Depositories Act, 1996 was passed to provide for the establishment of depositories in securities with the objective of ensuring transferability of securities with speed, efficiency and accuracy. Thus, the two depositories viz. NSDL and CDSL, discussed earlier, came up. Securities are held in the depository in an electronic form eliminating physical paper. Securities are also transferred from one party to another electronically.

1.7.7 Clearing Corporation

The anonymous electronic order book ushered in by the NSE did not permit members to assess credit risk of the counter-party and thus necessitated some innovation in this area. To address this concern, NSE set up the first clearing corporation, viz. National Securities Clearing Corporation Ltd. (NSCCL), which commenced its operations in April 1996. It carries out the clearing and settlement of the trades executed in the equities and derivatives segments of the NSE. It is the first clearing corporation in the country to establish the Settlement Guarantee Fund (SGF) in June 1996. It guarantees all financial settlements of trades executed on the NSE. It has been managing clearing and settlement functions since its inception without a single failure or clubbing of settlements. Today NSCCL settles trades under the T+2 rolling settlement.

1.7.8 Investor Protection

In order to protect the interest of investors and promote awareness, the Central Government (Ministry of Corporate Affairs) established the Investor Education and Protection Fund (IEPF) in October 2001. With similar objectives, the Exchanges and SEBI also maintain investor protection funds to take care of investor claims.

SEBI and the stock exchanges have also set up investor grievance cells for redressal of investor grievances. All these agencies and investor associations also organise investor education and awareness programmes.

1.7.9 Globalisation

Indian companies have been permitted to raise resources overseas through issue of ADRs, GDRs, FCCBs and ECBs. Further, FIIs have been permitted to invest in all types of securities, including government securities and tap the domestic market, upto limits as seen earlier.

RBI has permitted two-way fungibility for ADRs / GDRs, which means that the investors (foreign institutional or domestic) who hold ADRs / GDRs can cancel them with the depository and sell the underlying shares in the market.

1.7.10 Direct Market Access

In April 2008, SEBI allowed the direct market access (DMA) facility to the institutional investors. DMA allows brokers to offer their respective clients, direct access to the Exchange trading system through the broker's infrastructure without manual intervention by the broker.

1.7.11 Securities Lending & Borrowing Scheme (SLBS)

In April 2008, the Securities Lending & Borrowing mechanism was allowed. Normally, market participants cannot take short positions directly in the securities, because under rolling settlement, the securities will need to be delivered in T+2 days. The SLBS offers a mechanism for market participants who take short positions to borrow the securities to meet the settlement needs of the exchange.

The borrower of the security will pay the lender of the security for the period that the security has been borrowed. It thus becomes an additional source of income (besides dividend) for investors who own the securities.

1.7.12 Currency Futures

On August 29, 2008, NSE launched trading in currency future contracts in the USD-INR pair (i.e. on US Dollars) for the first time in India. Subsequently, contracts in the GBP-INR, EUR-INR and JPY-INR (i.e. on the UK's Pound-Sterling, Euro and Japanese Yen) were added.

1.7.13 Application Supported by Blocked Amount (ASBA)

ASBA is a major primary market reform. It enables investors to apply for IPOs / FPOs and rights issues without making a payment. Instead, the amount is blocked in the investors' own bank account. On allotment, an amount proportionate to the shares allotted goes out from the bank account; the balance amount is unblocked and available for use by the investor. Thus, the investor is saved the head ache of waiting for refund of moneys after allotment.

1.7.14 Launch of Interest Rate Futures

On August 31, 2009, futures on interest rate were launched on the National Stock Exchange.

1.7.15 Issue of Capital & Disclosure Requirements (ICDR) Regulations, 2009

In August 2009, the SEBI came out with the Issue of Capital and Disclosure Requirements (ICDR) Regulations 2009, replacing the Disclosure and Investor Protection (DIP) Guidelines 2000. ICDR governs all disclosure norms regarding issue of securities.

Chapter 2: Fundamental Analysis of Equity

2.1 Purpose

Shares are bought and sold based on their value, as perceived by the parties. The valuation is dependent on analysis of the security. There are broadly two approaches to security analysis:

2.1.1 Fundamental Analysis

Widely recognized as a sound approach to long term investments, fundamental analysis entails an evaluation of the company's fundamentals. This would typically include the following:

Industry Analysis

The competitive scenario in the industry, government policy, margin structure, growth prospects, risks and opportunities are evaluated.

Management Analysis

This is an assessment of the company's management, their capability, depth and longevity, transparency, corporate governance standards and ethics.

Financial Statement Analysis

This key aspect of fundamental analysis is discussed in detail in the next section.

2.1.2 Technical Analysis

While fundamental analysis focuses on the company, technical analysis focuses on how its share performs in the market. A technical analyst is not concerned about what the company manufactures or how much of its produce it sells. She will look at volumes and trends in a liquid share market index to form an opinion on future direction of the market in general. Similarly, prices of a company's shares, the volumes traded, the open position levels etc. are analysed to decide which way individual companies' share prices are headed.

Technical analysis is an invaluable tool for traders, who tend to operate based on short-term views on the market.

Brokerages and other companies in the securities business have research teams that handle this activity. Large brokerages have dedicated analysts for key sectors, such as banking & financial services, information technology, telecom, energy etc.

2.2 Financial Statement Analysis

As seen earlier, this is a key element of Fundamental Analysis. The analyst looks at various financial ratios to understand the company. Let us take the following example of Mega Corporation Ltd. to understand some of these ratios:

Balance Sheet as on	31-Mar-09 *Rs. Cr.*	31-Mar-08 *Rs. Cr.*
Sources of Funds		
Shareholders' Funds		
Share Capital	4,130.40	4,130.40
Reserves & Surplus	23,853.70	18,933.17
	27,984.10	23,063.57
Loan Funds		
Secured Loans	1,473.60	925.31
Unsecured Loans	6,065.19	2,119.93
	7,538.79	3,045.24
Total Sources of Funds	**35,522.89**	**26,108.81**
Application of Funds		
Fixed Assets		
Gross Block	32,728.69	30,922.73
Less Depreciation	20,459.86	19,351.42
Net Block	12,268.83	11,571.31
Add Capital Work-in-progress	6,544.24	2,389.55
	18,813.07	13,960.86
Investments	652.70	538.20
Current Assets, Loans & Advances		
Inventories	10,121.45	6,857.23
Sundry Debtors	3,024.36	3,048.12
Cash & Bank Balances	18,228.53	13,759.44
Other Current Assets	1,014.47	273.08
Loans & Advances	2,122.06	2,379.75
	34,510.87	26,317.62
Less Current Liabilities & Provisions		
Current Liabilities	7,713.39	6,400.92
Provisions	9,408.21	6,797.83
Others	1,332.15	1,568.60
	18,453.75	14,767.35
Net Current Assets	16,057.12	11,550.27
Miscellaneous Expenditure	0.00	59.48
Total Application of Funds	**35,522.89**	**26,108.81**
Face value of each share is Rs. 10.00		

Profit & Loss Account for year ended	31-Mar-09 *Rs. Cr.*	31-Mar-08 *Rs. Cr.*
Income		
Gross Sales	48,681.39	45,555.34
Less Excise Duty	5,531.31	6,045.19
Net Sales	43,150.08	39,510.15
Other Operating Income	700.87	706.89
Net Income	43,850.95	40,217.04
Expenditure		
Materials	15,650.06	11,303.14
Employees' Remuneration & Benefits	8,401.51	7,919.02
Other Manufacturing Expenses	7,273.70	6,671.61
Selling & Administration Expenses	3,416.61	2,554.17
	34,741.88	28,447.94
Profit from Operations before Other Income, Interest, Depreciation, Tax & Amortisation	9,109.07	11,769.10
Less Interest & Finance Charges	253.24	250.94
Add Other Income	1,828.96	1,184.76
Less Depreciation	1,285.12	1,235.48
Profit before Exceptional Items &Tax	9,399.67	11,467.44
Less Tax	3,284.28	3,934.65
Profit after Tax before Exceptional Items	6,115.39	7,532.79
Less Exceptional Items & tax adjustment	-59.42	-3.99
Net Profit after Tax	**6,174.81**	**7,536.78**
Less Equity Dividend	1,073.90	1,528.25
Less Income Distribution Tax	181.26	258.91
Retained Earnings	**4,919.65**	**5,749.62**
Share is trading in the market at Rs. 200.00		

In the ratio calculations for Mega Corporation that follow:

- 'P&L' means that the data has come from the company's Profit & Loss account
- 'B/S' means that the data has come from the company's Balance Sheet.

2.2.1 Ratios commonly tracked by company's Shareholders

Earnings per Share (EPS)

This is tracked by almost every investor – how much did the company earn on each share owned by the investor?

				31-Mar-09	*31-Mar-08*
Earnings Per Share		**a ÷ b**	**Rs.**	**14.81**	**18.24**
a	Profit after Tax before Exceptional Items	P&L	Rs. Cr.	6,115.39	7,532.79
b	No. of shares	c ÷ d	Crores	413.04	413.04
c	Share Capital	B/S	Rs. Cr.	4,130.40	4,130.40
d	Face value of each share	B/S	Rs.	10.00	10.00

Mega Corporation's EPS has gone down. Other things being constant, this is an indication that the share price had to go down.

Cash Earnings per Share (CEPS)

In the calculation of earnings, depreciation is one of the expenses deducted from the revenue. Depreciation however is only an accounting entry – it does not involve a cash outgo for the company. (The cash outgo would have happened when the company bought the asset on which depreciation is now charged as an accounting entry).

Similarly, the company may make various accounting provisions which do not involve a cash outgo.

If such non-cash expenses are added back to the earnings, then one arrives at the cash earnings.

				31-Mar-09	*31-Mar-08*
Cash Earnings Per Share		**a ÷ b**	**Rs**	**17.92**	**21.23**
a	Cash Earnings	c + d	Rs. Cr.	7,400.51	8,768.27
b	No. of shares	1 b	Crores	413.04	413.04
c	Profit after Tax before Exceptional Items	P&L	Rs. Cr.	6,115.39	7,532.79
d	Depreciation	P&L	Rs. Cr.	1,285.12	1,235.48

Dividend per Share (DPS)

The company may have earned profits, but how much did the investor receive as dividend?

				31-Mar-09	*31-Mar-08*
Dividend Per Share		**a ÷ b**	**Rs.**	**2.60**	**3.70**
a	Dividend	P&L	Rs. Cr.	1,073.90	1,528.25
b	No. of shares	1 b	Crores	413.04	413.04

Dividend Yield

If the past dividends are maintained, and an investor bought the share today, what return would she receive in the form of dividend?

				31-Mar-09	*31-Mar-08*
Dividend Yield		**a ÷ b**	**%**	**1.30%**	**1.85%**
a	Dividend Per Share	3	Rs.	2.60	3.70
b	Current Market Price of Share		Rs.	200.00	200.00

While the calculations are shown for both years, it is the latest dividend for a full financial year that is most relevant.

Caution needs to be exercised for this metric, because past dividend may not be sustained if the earnings go down. This is evident in the above calculation, where Mega Corporation has cut the dividend from Rs3.70 per share to Rs. 2.60 per share, when earnings fell from 2007-08 to 2008-09.

Price-Earnings Ratio (P/E Ratio)

When an investor buys the shares of a company, she is essentially buying into its future earnings stream. How much is the company's share price, in relation to its earnings?

				31-Mar-09	*31-Mar-08*
Price / Earnings Ratio		**a ÷ b**	**Times**	**13.50**	**10.96**
a	Current Market Price of Share		Rs.	200.00	200.00
b	Earnings Per Share		Rs.	14.81	18.24

While the calculations are shown for both years, it is the latest earnings that is most relevant.

Comparing the market price with past earnings, gives *historical P/E Ratio.*

Comparing the market price with projected (future) earnings, gives *prospective P/E Ratio.* This is more commonly used by analysts.

P/E Ratio is more meaningful when it is compared with the P/E Ratio of other companies from the same sector. This is a tool to check for over-valuation or under-valuation of a company's share in the market.

Suppose Mega Corporation's prospective P/E is 12 times, while other companies in the sector are trading in the range of 7 times. The analyst would consider whether the differential is justified – for example, on account of superior earnings growth expected or better corporate governance or some favorable news expectation about the company. If the analyst does not see a reason for the share to trade at a higher multiple, then she is likely to view it as over-valued and recommend that the share be sold.

Market Capitalisation

How much is the value of the entire company (i.e. all its shares together) as per the share market?

				31-Mar-09	*31-Mar-08*
Market Capitalisation		**a X b**	**Rs. Cr.**	**82,608.00**	**82,608.00**
a	Current Market Price of Share		Rs.	200.00	200.00
b	No. of shares		Crores	413.04	413.04

The latest share price and the latest number of shares are most relevant.

Based on market capitalization, shares are often classified as large cap, mid cap or small cap. There is no standard value based on which a company is fit into a specific category. Every research house has its own view on relative market capitalization, based on which companies are categorized.

2.2.2 Ratios to assess company's Margins

How profitable is the company's business? Two ratios can be considered.

Operating Profit Margin

				31-Mar-09	*31-Mar-08*
Operating Profit Margin		**a ÷ b**	**%**	**21.1%**	**29.8%**
a	Operating Profit before interest & depreciation	P&L	Rs. Cr.	9,109.07	11,769.10
b	Net Sales	P&L	Rs. Cr.	43,150.08	39,510.15

Clearly the margins of Mega Corporation have slipped during 2008-09. The key reason for this can be found in the Profit and Loss account. Material cost was 28.1% of net income in 2007-08. It has gone up to 35.7% in 2008-09. This kind of increase means that the company is not able to pass on its cost increases to its customers. This is very negative for a company's stock.

Net Profit Margin

The operating margin above did not consider interest and depreciation. Net profit margin is after all expenses, other than exceptional items, which are non-recurring in nature.

				31-Mar-09	*31-Mar-08*
Net Profit Margin		**a ÷ b**	**%**	**13.9%**	**18.7%**
a	Profit after Tax before Exceptional Items	P&L	Rs. Cr.	6,115.39	7,532.79
b	Net Income	P&L	Rs. Cr.	43,850.95	40,217.04

Mega Corporation has slipped on this front too, though to a lesser extent than the operating margins. From the profit and loss account it can be seen that the company managed to improve other income and also reduce its tax, as a percentage of net sales. Other income may not be connected to the company's normal operations, while reduction in tax may be on account of changes in tax regime, rather than anything done by the company. Therefore, they do not create any significant comfort about the prospects of the company.

2.2.3 Ratios to assess company's Capital Structure

Debt-Equity Ratio

What is the mix between borrowed funds (loans) and own funds (shareholders' funds) in the capital structure of the company?

				31-Mar-09	***31-Mar-08***
Debt-Equity Ratio		**a ÷ b**	**Times**	**0.22**	**0.33**
a	Loans	B/S	Rs. Cr.	6,115.39	7,532.79
b	Net Worth	c + d	Rs. Cr.	27,984.10	23,063.57
c	Share Capital	B/S	Rs. Cr.	4,130.40	4,130.40
d	Reserves	B/S	Rs. Cr.	23,853.70	18,933.17

Mega corporation has only Rs. 0.22 of loans, for every Rs. 1 of own funds. It is thus relying less on debt – technically called *under leveraged*. The implication of this will be discussed later, in the section on return generation efficiency.

A point to note is that too high a leverage too is bad, because the servicing needs on the debt can put pressure on the company during recessions / lean times. The ideal leverage for a company depends on the inherent risks in its industry as well as its profitability.

Interest Coverage Ratio

Debt-equity ratio looked at capital structure from the point of view of the company's balance sheet. What about is ability to bear the cost of debt funds?

				31-Mar-09	***31-Mar-08***
Interest Coverage Ratio		**a ÷ b**	**Times**	**37.12**	**45.70**
a	Profit before tax & exceptional items	P&L	Rs. Cr.	9,399.67	11,467.44
b	Interest Cost	P&L	Rs. Cr.	253.24	250.94

Thus, Mega Corporation's interest cost is covered by profits to the extent of 37 times. Conventionally, interest coverage of 3 times is considered comfortable, because it means that the company will stay profitable, even if its profits were to go down by 66.67%.

Thus, the company is under-leveraged even from the point of view of its ability to bear interest costs.

2.2.4 Ratios to assess company's Solvency

Current Ratio

Debt-equity evaluates a company's capital structure from the long term point of view. What is the company's ability to meet its normal day to day obligations?

				31-Mar-09	*31-Mar-08*
Current Ratio		**a ÷ b**	**Times**	**1.87**	**1.78**
a	Current Assets	B/S	Rs. Cr.	34,510.87	26,317.62
b	Current Liabilities & Provisions	B/S	Rs. Cr.	18,453.75	14,767.35

Conventionally, current ratio of 1.33 is considered comfortable. This means that even if 33% of the current assets do not get converted into cash, the company will be able to meet its obligations.

Mega Corporation's current ratio of 1.87 is therefore comfortable.

Quick Ratio

Among current assets, stocks take the longest to get converted to cash. Raw materials have to get converted to finished goods, which in turn need to be sold, before money can be realized. Therefore, as a measure of short term solvency, current ratio is re-worked by excluding inventory from the current assets.

				31-Mar-09	*31-Mar-08*
Quick Ratio		**(a - c) ÷ b**	**Times**	**1.32**	**1.32**
a	Current Assets	B/S	Rs. Cr.	34,510.87	26,317.62
b	Current Liabilities & Provisions	B/S	Rs. Cr.	18,453.75	14,767.35
c	Inventory	B/S	Rs. Cr.	10,121.45	6,857.23

Quick ratio of 1 is considered to be a good thumb-rule. Mega Corporation's quick ratio of 1.32 is therefore fine.

2.2.5 Ratios to assess company's Asset & Liability Efficiency

Fixed Assets Turnover

How does the company's net sales compare with the value of its fixed assets?

				31-Mar-09	*31-Mar-08*
Fixed Assets Turnover		**a ÷ b**	**times**	**3.52**	**3.41**
a	Net Sales	P&L	Rs. Cr.	43,150.08	39,510.15
b	Net Fixed Assets	B/S	Rs. Cr.	12,268.83	11,571.31

Mega Corporation is able to turnover its fixed assets 3.5 times. This is then compared to other companies in the sector, to see how well Mega Corporation is able to use its fixed assets to generate income.

Inventory Turnover

How efficient is the company's inventory management? A company that has implemented practices like Just-in-time inventory will score well on this front.

				31-Mar-09	*31-Mar-08*
Inventory Turnover		**a ÷ b**	**times**	**3.58**	**4.37**
a	Cost of Goods Sold	c + d + e	Rs. Cr.	36,280.24	29,934.36
b	Inventory	B/S	Rs. Cr.	10,121.45	6,857.23
c	Expenditure	P&L	Rs. Cr.	34,741.88	28,447.94
d	Depreciation	P&L	Rs. Cr.	1,285.12	1,235.48
e	Interest & Finance Charges	P&L	Rs. Cr.	253.24	250.94

Mega Corporation's inventory turnover of 3.58 times can be compared with other companies in the sector, to assess its efficiency. It is pertinent to note that the inventory turnover has worsened during 2008-09.

If the company's inventory is getting turned over 3.58 times in a year, that means that inventory is held in the company for about 365 ÷ 3.58 i.e. 101.8 days. Such a long inventory holding period is maintained only if there are challenges in the supply chain (on account of potential disturbances or long distances for goods movement, or movement of goods between countries) or if the company has a long manufacturing cycle.

Debtors' Turnover

How efficient is the company in the credit it gives to its buyers?

				31-Mar-09	*31-Mar-08*
Debtors Turnover		**a ÷ b**	**times**	**16.10**	**14.95**
a	Gross Sales	P&L	Rs. Cr.	48,681.39	45,555.34
b	Debtors	B/S	Rs. Cr.	3,024.36	3,048.12

The debtors turnover of Mega Corporation has improved in 2008-09, which is a good sign.

Average Collection Period

On an average, in how many days is the company able to convert its credit sales into collections?

				31-Mar-09	*31-Mar-08*
Average Collection Period		**a ÷ b**	**days**	**22.68**	**24.42**
a	Days in a year		days	365	365
b	Debtors Turnover		times	16.10	14.95

The average collection period of 23 days can be compared, not only with others in the industry, but also the company's own collection policy. If Mega Corporation, on an average, gives 15 days credit to buyers, then the company is poor in its collections. On the other hand, if the normal credit is 30 days, then the company has a good collection record.

Average Payment Period

Generally, credit availed from a supplier does not have an interest cost. Any company should take full benefit of zero cost funding opportunities.

				31-Mar-09	*31-Mar-08*
Average Payment Period		**c ÷ (b÷a)**	**days**	**81.04**	**82.13**
a	Days in a year		days	365	365
b	Expenditure	P&L	Rs. Cr.	34,741.88	28,447.94
c	Current Liabilities	B/S	Rs. Cr.	7,713.39	6,400.92

Mega Corporation has a long payment period of 81 days. Thus, it is able to avail credit from its suppliers for 81 days, while it is giving credit of only 23 days to its buyers. This is good.

However, the 81 days of credit period from suppliers, as compared to 101 day inventory holding period plus 23 day collection period means that the company will keep facing working capital challenges when it expands operations.

2.2.6 Ratios to assess company's Return Generation Efficiency

Return on Capital Employed (ROCE)

The company's margins were assessed earlier. That was a measure of profitability of its operations. How does the profitability compare with the money invested in the business? For this, one has to consider how much the company earned, before any payment was made to any financier (debt as well as equity). This is to be compared with the money mobilized from all financiers (debt as well as equity).

The calculation also has to factor in the tax shield on interest, which can be illustrated through a simple example:

Suppose a company made Rs. 100 of profit, and tax rate was 30%, the company would pay Rs. 30 of tax. Profits after tax would be Rs. 100 minus Rs. 30 i.e. Rs. 70.

If the company also had to bear an interest cost of Rs. 10. The revised profit before tax would be Rs. 90. 30% tax would mean a tax outgo of Rs. 27. Profits after tax would thus be Rs. 90 minus Rs. 27 i.e. Rs. 63.

The interest cost of Rs. 10, lowered the profit by only Rs. 70 minus Rs. 63 i.e. Rs. 7. This is because the interest cost also reduced the tax to the extent of 30% of the interest cost. This tax break on the interest is called a *tax shield.*

Return on Capital Employed		**a ÷ b**	**%**	**17.68%**	**29.48%**
a	Profits before servicing of financiers	c + d - e	Rs. Cr.	6,280.15	7,697.63
b	Total Sources of Funds	B/S	Rs. Cr.	35,522.89	26,108.81
c	Profit after Tax before Exceptional Items	P&L	Rs. Cr.	6,115.39	7,532.79

Return on Capital Employed		**a ÷ b**	**%**	**17.68%**	**29.48%**
d	Interest Cost	P&L	Rs. Cr.	253.24	250.94
e	Tax Shield on Interest Cost	d X f	Rs. Cr.	88.48	86.10
f	Tax Rate	g ÷ h	%	34.94%	34.31%
g	Tax	P&L	Rs. Cr.	3,284.28	3,934.65
h	Profit before tax & exceptional items	P&L	Rs. Cr.	9,399.67	11,467.44

Mega Corporation's ROCE has deteriorated quite significantly during 2008-09, largely led by the lower margins (which in turn were caused by higher material costs).

The ROCE can be compared with other companies in the sector, to see how efficient is the company in generating a return on the funds it deploys.

Return on Equity (ROE)

ROCE did not make a differentiation based on where the funds came from – debt or equity. It only looked at how much the business generated on the funds invested.

ROE looks at the return specifically for equity shareholders. Therefore, it looks at the profits that are left over after the debt financiers are paid their interest cost. This is compared with the shareholders' funds in the company (which would include not only the money that investors brought in as share capital, but also past profits that have been retained in the business)

				31-Mar-09	***31-Mar-08***
Return on Equity		**a ÷ b**	**%**	**21.85%**	**32.66%**
a	Profit after Tax before Exceptional Items	P&L	Rs. Cr.	6,115.39	7,532.79
b	Net Worth	c + d	Rs. Cr.	27,984.10	23,063.57
c	Share Capital	B/S	Rs. Cr.	4,130.40	4,130.40
d	Reserves	B/S	Rs. Cr.	23,853.70	18,933.17

For the same reasons as ROCE, ROE too has declined in 2008-09. How did the ROCE of 17.68% translate into a higher ROE of 21.85%?

The ROCE, the return that the business inherently generated, was 17.68%. The funds came from debt and equity.

Debt was serviced through interest payments. During 2008-09, Mega Corporation started with loans of Rs. 3,045.24crore and ended with loans of Rs. 7,538.79crore. Thus, on an average, there was a debt outstanding of Rs. 5,292.02crore during the year. On this, the company paid interest of Rs. 253.24crore. The effective interest rate is Rs. 253.24 ÷ Rs. 5,292.02 i.e. 4.79%.

The company earned 17.68% on the funds deployed, but had to pay only 4.79% interest to the debt financiers. The excess returns over the interest cost belong to the equity investors. Thus, the lower cost debt funding helped to boost the ROE of the company. This benefited the equity shareholders.

Based on debt-equity and interest coverage, we saw that Mega Corporation is under-leveraged. If it had leveraged more i.e. gone for a higher mix of debt in its capital structure, it would have been able to demonstrate a smarter ROE for its equity investors.

2.3 Sector-Specific Ratios

Professional analysts also apply various sector specific ratios. For example:

2.3.1 Telecom

Telecom analysts consider ARPU viz. Average Revenue per User.

2.3.2 Retail

Analysts in the retail sector compare revenue and profits of companies, by relating them to the respective companies' SKU i.e. Stock Keeping Unit.

2.3.3 Software

Software analysts look at the mix of people employed on-site (i.e. client's offices abroad) and off-shore (i.e. lower cost offices in India). A higher off-shore mix enhances profitability. The analysts also consider how the billing rate is moving. Improvement in billing rate means, either the company is moving up the value chain or its bargaining position is improving, both of which are positive for the company's stock.

2.3.4 Banking

Banking analysts view Net Interest Margins (NIM) and Non-Performing Assets (NPAs) as indicaters of the strength of the core banking business. Capital Adequacy Ratio (CAR) is another indicater that is tracked to assess how much the balance sheet can grow without a resource mobilization exercise.

2.3.5 Natural Resources

Natural resources companies (minerals, oil) are valued on the basis of the size of natural resource reserves they control.

Chapter 3: Primary Markets Process

The different kinds of securities that a company may issue, and the concept of primary market, as distinct from secondary market, were discussed in Chapter [1].

3.1 Typical Fund Raising Stages

An entrepreneur having an idea looks for people who will provide the *seed capital* to help him take the initial idea forward. Family, relatives, friends, colleagues and former colleagues are typical seed capital investors, also called *angels.* They invest on the basis of their comfort with and confidence in the entrepreneur. Seed capital investors need the clarity that their investment can be completely written off, if, for any reason, the entrepreneurial idea does not work out.

Assuming the idea progresses well, the entrepreneur soon needs larger sums of money than is possible to collect from his immediate circle of family, friends and associates. He needs *venture capital*. Venture capital investors are long term investors who are prepared to take the risk that the entrepreneurial project can fail. However, if it succeeds, they reap profits, because their investment happens at a low business valuation.

Once the pilot is ready and there is greater clarity on the efficacy of the business model, the entrepreneur is confident that his idea will work. He now starts thinking of scaling up. In such a situation, where project risks are less, *private equity capital* can be attracted. Private equity investors invest at higher business valuations than the venture capital investors, and invest with a shorter time horizon. They tend to expect an opportunity to sell their investments in about 2 years either through a sale to some *strategic investor* or as part of the IPO of the company.

Strategic investors are investors who invest in a company because it fits their business strategy. For example, an automobile company's investment in one of its auto ancillary suppliers.

Financial investors invest in a company because they see value in it. Angel investors, venture capital investors and private equity investors are examples of financial investors. They will sell of their shares at some stage. Thus, their behavior pattern is different from strategic investors, who are driven by the strategic fit, rather than potential gain on sale of the shares.

An entrepreneur looking for pure funding and the benefit of the investor's connections will go for financial investors. If he wants some kind of technical or commercial capabilities too, he may look for a strategic investor.

3.2 IPO Process

Initial Public Offerings (IPOs) are covered by the Securities & Exchange Board of India (Issue of Capital & Disclosure Requirements) Regulations, 2009.

Companies appoint *investment bankers* (also called *merchant bankers*) to assist them in the IPO process. The investment banker works with the company over several months, preparing the company for the IPO and then handling the IPO. The responsibilities include conducting the due diligence on various disclosures in the prospectus, liaise with SEBI and co-ordinate on all other aspects of the issue.

It is quite common to have a team of investment bankers as *issue managers*, especially for large issues. The issue managers sign an *inter se* agreement that sets out each investment banker's role and responsibility. Among them, one is the lead – also called *Book Running Lead Manager*. Others are *co-Leads,* and may also be called *Book Running Lead Managers*.

Besides the investment banker, some other agencies are appointed by the company. These are:

- *Syndicate Members* – Brokers registered with SEBI are appointed to procure bids (applications) from investors for the IPO.
- *Underwriters* – Investment Bankers, stock brokers and other SEBI-registered underwriters are appointed to ensure that the issue amount is mobilized.

  Each underwriter indicates an amount that he is underwriting. If the issue does not receive adequate subscriptions from investors, then the shortfall is to be met by the underwriters (who have brought in less applications than the amount underwritten by them).
- *Legal adviser* – Solicitors, to advise on all legal aspects of the issue, to ensure that all legalities are complied with and to review the Prospectus of the issue
- *Credit Rating Agency* – to grade the IPO.

  An independent and unbiased grading of the IPO is compulsory
- *Depository* – to demat the shares of the company.

  Though investors have the option of asking for physical shares, it is compulsory for companies coming out with an IPO to offer demat facility
- *Registrar & Transfer Agent (RTA)* – to process investors' applications and handle the allotment and refunds

  The company, Depository and RTA enter into a tripartite agreement for their respective responsibilities. It is pertinent to note that while the RTA operationalizes the allotment (based on which investors know how many shares they have been allotted), the relevant shares will need to be dematerialized with the depository, who will credit the demat shares to the investor's account (maintained with his depository participant).
- *Bankers to the issue* – to collect forms and relevant payment instruments

  Some of the issues that are part of the IPO process are as follows:

- Deciding on the Resource Mobilisation Program, Capital Structure, Business Valuation and Dilution Level. This is a key area where the investment banker advises the company and its promoters. Some of the dynamics involved are:
  - The resources mobilized should be adequate for the company's medium term plans.
  - Capital structure needs to be appropriate for the company, given its business exigencies, risks and long term plans.
  - Higher the business valuation, lesser would be the dilution required (i.e. stake that needs to be offered to the public) for meeting the resource mobilization target.

    For example, if the company is valued at Rs. 2,000 crores, and it wants to come to the market for Rs. 200 crores, then only about 10% of the share capital needs to be offered to the public. But, for the same requirement of funds, if the business valuation is only Rs. 1,000 crores, then about 20% of the share capital will need to be offered to the public.

    Higher the dilution, lesser the equity control that the promoter would have over the company.
  - Higher the business valuation, lesser the profits than investors in the IPO will earn, when they sell their shares in the stock exchange. Therefore, too high a business valuation would make it difficult for the investment banker to sell the issue.
- SEBI has laid down strict regulations regarding eligibility of companies to tap the IPO market and reservations for various classes of investors. Similarly, there are various requirements that the company has to fulfill on an ongoing basis, once its shares are listed.

  The investment banker hand-holds the company over several months, in order to ensure that the company can stand the public scrutiny that is incidental to the IPO process and listing.
- As regards pricing, two options are available:
  - *Fixed price issue* – here the investor knows at the time of investment, the exact price at which the shares are being offered. So the investor only indicates the number of shares in his application.

    If the applications for shares are more than the issue size, then a basis of allotment is decided in consultation with the stock exchange. Accordingly, the investor may be allotted all the shares he applied for, or some of the shares he applied for, or none of the shares he applied for.
  - *Book built issue* – here the investors know a *price band*, say Rs. 100 to Rs. 120, at the time of investment. The lower end of the band is called *floor;* the higher end is the *cap.* The cap cannot be more than 1.2 times the floor.

Within this price band, investors have to bid for the shares i.e. indicate the number of shares that they are prepared to buy at various prices.

The issue book is built as a compilation of such bids received from investors. Depending on the depth of bids received, the investment banker together with the company will decide the *cut-off price*. The process is called *price discovery process.*

All bids to buy the shares below the cut-off price are rejected. Allotment for other bids is done as per a basis of allotment that is finalized along with the stock exchange.

- The prospectus is a key document that has details of the company, its background, promoters, directors and management, company's financials, plans, objects of the issue etc. The prospectus is prepared by the lead manager and reviewed by the legal adviser before it is submitted to SEBI for vetting.

  In a book-built issue, the prospectus evolves through three forms:

  - *Draft Red Herring Prospectus (DRHP)* – This has all the statutory details other than the price of the issue and issue period. It is submitted to SEBI for vetting
  - *Red Herring Prospectus (RHP)* – The price band and the issue period are added to the prospectus that has been vetted by SEBI. This is submitted to the ROC.
  - *Prospectus* – The final price (instead of price band) is incorporated in the RHP after the issue is closed and price discovery process is completed.
- The company also needs to sign a listing agreement with the stock exchanges where it proposes to list its shares. These are mentioned in the Prospectus.
- Around the issue opening date, the investment bankers arrange conferences for brokers and the press. The conferences are not only publicity events, but also a forum for the brokers / press to meet the company's management and seek clarifications on their plans.
- Based on the advertising and publicity campaign, and the efforts of syndicate members, investors apply in the IPO. Applications / bids are accepted until the issue closure date.
- Applications are tabulated by the RTA, who also reconciles the balances with the bankers to the issue.
- The company and the lead managers decide on the allotment price. The basis of allotment is decided in consultation with the lead stock exchange.
- The RTA operationalizes the allotment, based on the basis finalized with the stock exchange. Accordingly,
  - A list of allottees and the number of shares allotted to each, is prepared and sent to the depository, who credits the shares to each allottee's demat account with his respective depository participant.
  - For applications made under ASBA, the registrar processes requests for banks to release blocked amounts as per the allotments made on those applications.

- For other applications where partial allotments are made, the registrar processes refund instructions.

- The lead manager intimates SEBI and the Stock Exchanges regarding completion of the various formalities.
- The stock exchange sets a date for commencement of trading. The first day of trading has become a ceremonial affair, where the company's management or any of its brand ambassadors *rings the opening bell* in the exchange. With this, trading in the company's shares commences.

3.3 Why IPO?

Until the IPO stage, there is no transparent price for the company's shares. Once the IPO is concluded and the shares start trading in the stock exchange, the price of its shares can be watched in the market.

The price of its share multiplied by the total number of shares issued i.e. market capitalization is an indicater of the value of the company in the stock exchange.

Listing gives companies a certain visibility and brand positioning. Besides, companies which are traded in the stock exchange are perceived as large companies with transparent business operations adhering to corporate governance standards. They also tend to be better supervised by the regulators, and closely monitored by investors and the market, in general.

The ultimate aspiration of most entrepreneurs is therefore to take their company public. But, the path from idea to IPO can be a long one with its own twists and turns. Besides business skills of the entrepreneurial team, grit and luck too have a role, in taking the company to the public.

Chapter 4: Membership On Exchanges

4.1 Stock Broker

A stock broker is an intermediary who arranges to buy and sell securities on the behalf of clients (the buyer and the seller).

According to SEBI (Stock Brokers and Sub-Brokers) Regulations, 1992, a stockbroker is member of a stock exchange and is required to hold a certificate of registration from SEBI in order to buy, sell or deal in securities.

4.2 Trading Members

Stockbrokers need to become *Trading Members (TM)* of NSE in order to help their clients to trade using the NSE platform. Trading members of NSE have certain benefits, which includes:

(a) Access to a nation-wide trading facility for equities, derivatives, debt and hybrid instruments / products;

(b) Ability to provide a fair, efficient and transparent securities market to the investors;

(c) Use of state-of-the-art electronic trading systems and technology;

(d) Dealing with an organisation which follows strict standards for trading & settlement at par with those available at the top international bourses, and constantly strives to move towards a global marketplace in the securities industry.

4.3 Clearing Members

As see in Chapter 1, the National Securities Clearing Corporation Ltd (NSCCL) handles the settlement of trades that are executed the NSE. They do this through *clearing members*.

A trading member may choose to become a clearing member.

Self Clearing Members clear and settle the trades executed by them only, either on their account or on account of their clients.

Trading Members cum Clearing Members can clear and settle their own trades as well as trades of other trading members.

Professional Clearing Members do not trade but only clear and settle trades executed by other trading members (TMs).

4.4 Membership Norms

Table 4.1: Eligibility Criteria for Membership-Corporates (Amount in Rs. Lakh)					
Particulars/ Segments	**CM**	**CM and F&O**	**WDM**	**CM and WDM**	**CM,WDM and F&O**
Minimum Paid-up capital	30	30	30	30	30
Net Worth	100	100 (Membership in CM segment and Trading/Trading and self clearing membership in F&O segment) 300 (Membership in CM segment and Trading and Clearing membership in F&O segment)	200	200	200 (Membership in WDM segment, CM segment and Trading/Trading and Self Clearing membership in F&O segment) 300 (Membership in WDM segment, CM segment and Trading and Clearing membership in F&O segment)
Interest Free Security Deposit with NSEIL	85	110	150	235	260
Interest Free Security Deposit with NSCCL	15	15 *	NIL	15	15 *
Collateral Security Deposit with NSCCL	25	25**	NIL	25	25**
Annual Subscription	1	1	1	2	2
Advance Minimum Transaction Charges for Futures Segment	NIL	1	NIL	NIL	1
Education	Two directors should be HSC. Dealers should also have passed approved certification	Two directors should be HSC. Dealers should also have passed approved certifications	Two directors should be HSC. Dealers should also have passed approved certification	Two directors should be HSC. Dealers should also have passed approved certifications	Two directors should be HSC. Dealers should also have passed approved certifications
Experience	----------Two years of experience in securities market----------				

*Additional IFSD of 25 lakhs with NSCCL is required for Trading and Clearing (TM-CM) and for Trading and Self clearing member (TM/SCM).

** Additional Collateral Security Deposit (CSD) of 25 lakhs with NSCCL is required for Trading and Clearing (TM-CM) and for Trading and Self clearing member (TM/SCM).

In addition, a member clearing for others is required to bring in IFSD of Rs. 2 lakh and CSD of Rs. 8 lakh per trading member he undertakes to clear in the F&O segment.

Persons or Institutions desirous of securing admission as trading members of NSE, may apply for membership for any one of the following segment groups:

(a) Wholesale Debt Market (WDM) Segment

(b) Capital Market (CM) segment

(c) Capital Market (CM) and Wholesale Debt Market (WDM) segment

(d) Capital Market (CM) and Futures & Options (F&O) segment

(e) Capital Market (CM), Futures & Options (F&O) segment and Wholesale Debt Market (WDM) segment

(f) Currency Derivatives (CD) segment with or without the above mentioned segments.

(g) Clearing Membership of National Securities Clearing Corporation Ltd. (NSCCL)

Trading members registered in F&O segment and CD segment are eligible to trade in the interest rate futures market.

The requirements for members who are corporates are summarized in Table 4.1.

The requirements for members who are individuals or partnerships are summarized in Table 4.2.

The net worth of the member, is to be calculated as a summation of Capital and free reserves less non allowable assets. Non allowable assets include fixed assets, pledged securities, member's card, non-allowable securities (unlisted securities), bad deliveries, doubtful debts and advances, prepaid expenses, intangible assets and 30% marketable securities.

Deposit requirements are of two types i.e. Interest Free Security Deposit (IFSD) and Collateral Security Deposit (CSD). IFSD has to be in liquid cash while CSD can be in cash or non-cash form. Cash component means cash, bank guarantees, fixed deposit receipts, units of money market mutual fund and gilt funds and any other form of collateral as may be prescribed from time to time. Non-cash component means all other forms of collateral deposits like deposit of approved list of demat securities and units of the other mutual funds and any other form of collateral as may be prescribed from time to time.

Net worth requirement for Professional Clearing members in F&O segment is Rs. 300 lakhs. Further, a Professional Clearing member needs to bring Interest Free Security Deposit (IFSD) of Rs. 25 lakhs with NSCCL and Collateral Security Deposit (CSD) of Rs. 25 lakh with NSCCL as deposits.

Table 4.2: Eligibility Criteria for Membership- Individuals/ Partnership Firms

(Amount in Rs. lakh)

Particulars	CM	CM and F&O	WDM	CM and WDM	CM,WDM and F&O
Net Worth	75	75 (Membership in CM segment and Trading membership in F&O segment) 100 (Membership in CM segment and Trading and Self clearing membership in the F&O segment) 300 (Membership in CM segment and Trading and Clearing membership in F&O segment)	200	200	200 (Membership in WDM segment, CM segment and Trading/Trading and Self Clearing membership in F&O segment) 300 (Membership in WDM segment,CM segment and Trading and clearing membership on F&O segment)
Interest Free Security Deposit (IFSD) with NSEIL	26.5	51.5	150	176.5	201.5
Interest Free Security Deposit (IFSD) with NSCCL	6	6 *	NIL	6	6*
Collateral Security Deposit (CSD) with NSCCL	17.5	17.5 **	NIL	17.5	17.5 **
Annual Subscription	0.5	0.5	1	1.5	1.5
Advance Minimum Transaction Charges for Futures Segment	NIL	1	NIL	NIL	1

*Additional IFSD of 25 lakh with NSCCL is required for Trading and Clearing Members (TM-CM) and for Trading and Self clearing member (TM/SCM).

** Additional Collateral Security Deposit (CSD) of 25 lakh with NSCCL is required for Trading and Clearing (TM-CM) and for Trading and Self clearing member (TM/SCM).

In addition to the eligibility criterion, there are certain professional requirements for clearing membership as described in Table 4.3.

Table 4.3: Requirements for Professional Clearing Membership

(Amount in Rs. lakh)

Particulars	CM Segment	F&O Segment	CM and F&O Segment
Eligibility	Trading Member of NSE/SEBI Registered Custodians/ Recognised Banks		
Net Worth	300	300	300
Interest Free Security Deposit (IFSD) *	25	25	34
Collateral Security Deposit (CSD)	25	25	50
Annual Subscription	2.5	Nil	2.5

*The Professional Clearing Member (PCM) is required to bring in IFSD of Rs. 2 lakh and CSD of Rs. 8 lakh per trading member whose trades he undertakes to clear in the F&O segment and IFSD of Rs. 6 lakh and CSD of Rs. 17.5 lakh (Rs. 9 lakh and Rs. 25 lakh respectively for corporate Members) per trading member in the CM segment.

The following Table 4.4 provides the eligibility criterion for trading membership and clearing membership for currency derivatives.

Table 4.4: Currency Derivatives- Corporates, Individuals and Firms

(Amount in Rs. Lakh)

Particulars	NSE Members		NCDEX Members		New Applicants		
	Trading Member-ship	Trading cum Clearing Member-ship	Trading Member-ship	Trading cum Clearing Member-ship	Trading Member-ship	Trading cum Clearing Member-ship	Profes-sional Clearing Member-ship
Networth	100	1000	100	1000	100	1000	1000
Interest Free Security Deposit with NSEIL	2	2	2	2	2	2	-
Collateral Security Deposit with NSEIL	8	8	10.5	13	13	18	-
Interest Free Security Deposit with NSCCL	-	25	-	25	-	25	25
Collateral Security Deposit with NSCCL	-	25	-	25	-	25	25

Table 4.4: Currency Derivatives- Corporates, Individuals and Firms (Amount in Rs. Lakh)				
Particulars	**NSE Members**	**NCDEX Members**	**New Applicants**	
Education	Two directors should be HSC. Dealers should also have passed SEBI approved National Institute of Securities Markets (NISM) Series I – Currency Derivatives Certification Examination			
Experience	---------- Two years of experience in securities market----------			
Track Record	The Directors should not be defaulters on any stock exchange. They must not be debarred by SEBI for being associated with capital market as intermediaries. They must be engaged solely in the business of securities and must not be engaged in any fund-based activity.			

In addition to the individuals, corporates and partnership firms, Banks are authorized by the Reserve Bank of India under section 10 of the Foreign Exchange Management Act, 1999 as 'AD Category - I bank' to become trading and clearing members of the currency futures market of the recognized stock exchanges, on their own account and on behalf of their clients, subject to minimum prudential requirements of minimum net worth of Rs. 500 crores, minimum CRAR of 10 per cent, net NPA not exceeding 3 per cent and net profit should have been made for last 3 years.

The AD Category - I banks which fulfill the prudential requirements are required to lay down detailed guidelines with the approval of their Boards for trading and clearing of currency futures contracts and management of risks. AD Category - I banks which do not meet the above minimum prudential requirements and AD Category - I banks which are Urban Co-operative banks or State Co-operative banks can participate in the currency futures market only as clients, subject to approval therefor, from the respective regulatory Departments of the Reserve Bank.

4.5 Trading Membership – Admission Procedure

Admission is a two-stage process. Applicants are required to go through an examination (a module of NCFM). This is followed by an interview with the Membership Recommendation committee.

At any point of time the applicant has to ensure that at least the sole proprietor/one of the designated partner/one of the designated director/compliance officer should have a valid certificate for at least one of the following NCFM Modules:

(a) Securities Market (Basic) Module

(b) Compliance Officer (Broker) Module

(c) Capital Market (Dealers) Module

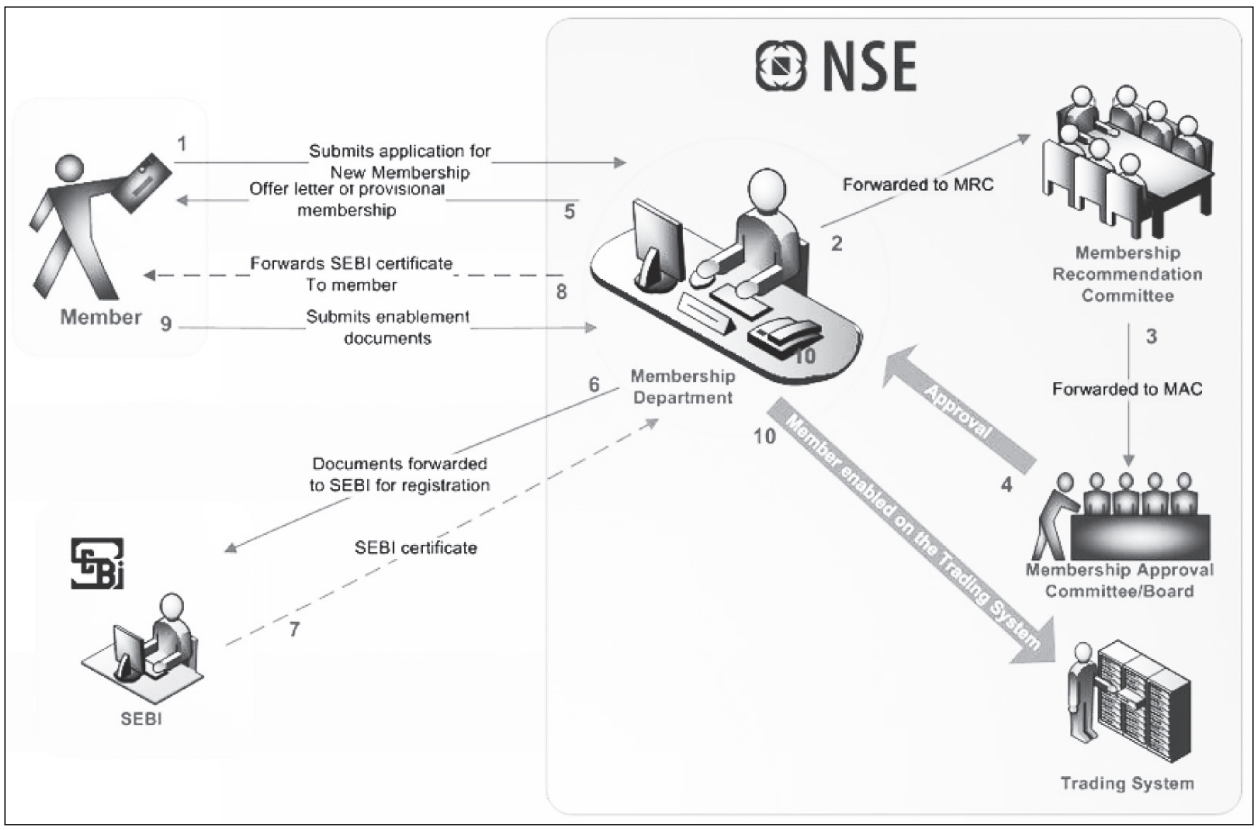
(d) Derivatives Market (Dealers) Module

The admission procedure for new membership is depicted in figure 4.1.

Applicants are required to submit application form, in the prescribed format along with other relevant documents to the exchange.

The application for new membership is then forwarded to Membership Recommendation Committee. The Membership Recommendation Committee (MRC) consists of seven persons from various disciplines. The MRC conducts interviews of the applicants for trading membership. In case of corporates, the dominant shareholder and designated directors; in case of individuals, the individual himself and in case of partnership firms – two designated partners have to appear for the interview. The purpose of the interview is to acquire information about their capability & commitment to carry on stock broking activities, financial standing and integrity.

Figure 4.1: Admission procedure for new membership at NSE



The MRC recommends the names for admission of trading members to the Membership Approval Committee (Sub-committee of Board of Directors)/Board of directors of the exchange.

The Board of Directors after taking into consideration the recommendations of the MRC either approves or rejects the applications.

On getting approval from the Board, an admission on a provisional basis is provided to the applicant subject to certain conditions like registration with SEBI, submission of relevant fees/

deposits and documents. The requirements to be complied with by the trading member for forwarding their application to SEBI are also specified.

The applicant then has to remit the prescribed membership deposits (as required by the demand advice attached to the provisional offer letter) within the time frame prescribed in the demand advice attached to the provisional offer letter. Then the documents are submitted to SEBI.

After satisfying itself as to compliance with respect to all the prescribed norms, SEBI grants a Registration Certificate in the name of the applicant.

Besides SEBI Registration, payment of fees/deposits and submission of relevant documents, the trading member has to satisfy all the formalities and requirements stipulated by the Exchange and NSCCL.

The dealers on CM segment are then required to clear the Capital Market (Dealers) Module of NCFM; dealers on Futures & Options Segment are required to clear the Derivatives Market (Dealers) Module of NCFM and dealers on Currency Derivatives segment are required to clear NISM (National Institute of Securities Market) Series I - Currency Derivatives Certification Examination. This is a pre-requisite without which user-ids are not issued.

After ensuring that all the formalities and requirements are complied, the Trading Member is enabled to trade on the NEAT system.

A trading member is fully responsible for the acts and omissions of its partners, authorised officials, attorneys, agents, authorised representatives and employees. If any such act, which is against the relevant rules and regulations, is committed or omitted by them, then the trading member is liable to the same penalty and to the same extent, as if that act or omission been done or omitted by itself.

4.6 Trading Membership – Surrender Procedure

Trading members can apply for surrender of their trading membership once admitted to the Exchange. This is permitted by the Exchange after certain conditions are fulfillled by the member, such as, clearing off all the dues to the Exchange and NSCCL, notifying all other TMs of the approval of surrender, obtaining 'No dues' certificate from SEBI, issuance of a public notification in leading dailies etc. The deposits of the trading members would be released by the Exchange/NSCCL after a prescribed lock-in period. There is, however, no lock-in period applicable in case of trading member, who is,

(a) Not SEBI registered

(b) SEBI registered but not enabled

(c) SEBI registered and enabled but not traded at all

Details of the norms and procedures related to the surrender of membership to the Exchange are prescribed as below:

(a) A trading member desirous of surrendering its membership of the Exchange is required to send its request in writing in the prescribed format.

(b) Before submission of an application for surrender of membership, the trading member is required to comply with all the pre-requisites for application of surrender in the prescribed format. Special cases are those for application for surrender of membership from a trading member,

(i) who has been suspended/ disciplinary action taken by the Exchange /SEBI

(ii) in respect of whom any investigation/ action consequent to a default has been initiated by the Exchange /SEBI,

(iii) who falls within the category of 'associates' as defined by SEBI,

(iv) who owes dues to the Exchange/ NSCCL,

(v) against whom claims by investors of value of Rs. 10 lakh or more are pending or any claim for any amount is pending for a period more than 6 months,

(vi) against whom any other claim /complaint is pending which, in the opinion of the Exchange/ NSCCL, needs to be resolved by the concerned trading member,

(vii) whose turnover fees liability to SEBI is still outstanding,

The Exchange has absolute discretion in dealing with such applications and if it decides to process/accept the surrender application of such trading member, it may impose additional terms and conditions as it may deem fit.

(c) No trading member, who has surrendered its trading membership, their partners (in case of partnership firm) and/ or dominant shareholders (in case of corporates) is eligible to be re-admitted to the trading membership of the Exchange in any form for a period of one year from the date of cessation of trading membership (i.e. from the date of cancellation of registration from SEBI).

(d) The application of surrender of trading membership is subject to fulfillment of certain conditions, such as submission of original SEBI registration certificate(s) on all segments on which the trading member is registered; submission of sub-broker registration certificate(s) of all the sub-brokers associated with the trading member for onward transmission to the SEBI for cancellation etc.

(e) The trading member should request the Exchange through their surrender application to dismantle and recover all the leased line(s)/ VSAT(s) and other equipments given to them at their dealing offices.

(f) A notice to public by way of a public notification in newspapers should be made by the

Exchange and certain time (from the date of public notification) is given to investors, public, etc. to lodge claims against the surrendering trading member.

(g) A letter is also sent to SEBI seeking pending dues, if any, from member.

(h) On the expiry of period for receipt of investor claims and on receipt of intimation of dues amount, if any, from SEBI, the total amount payable by the member should be appropriated against trading member's deposits available with the Exchange / NSCCL and the trading member will be intimated accordingly. In case the amount payable exceeds the deposits, the trading Member would be intimated to bring in the requisite amount within 21 days of intimation. Upon the failure of the member to do so within 21 days of intimation, the case shall be referred to the relevant authority for further action.

4.7 Trading Membership – Suspension & Expulsion

The Exchange may expel or suspend, fine under censure, warn, withdraw any of the membership rights of a trading member, if it is guilty of contravention, non-compliance, disobedience, disregard or evasion of any of the bye-laws, rules and regulations of the Exchange, or of any resolutions, orders, notices, directions or decisions or rulings of the Exchange or the relevant authority.

4.7.1 Suspension of Membership - Grounds

The following are some grounds for suspension or expulsion of membership:

(i) *Misconduct*

A trading member is deemed guilty of misconduct for any of the following or similar acts or omissions namely:

(a) Fraud or fraudulent act or if convicted of a criminal offence.

(b) Violation of the provisions of any statute governing the activities, business and operations of the Exchange.

(c) Improper conduct.

(d) Failure to submit to or abide by arbitration.

(e) Failure to testify or give information sought by the Exchange or any committee or any other person authorized on that behalf.

(f) Failure to submit special returns in such form as the relevant authority may from time to time prescribe.

(g) Failure to submit audited accounts.

(h) Failure to compare or submit accounts with defaulter.

(i) Failure to submit or make any false or misleading returns.

(j) Make vexatious, malicious or frivolous complaints.

(k) Failure to pay subscription fee, arbitration charges etc.

(ii) *Un-businesslike conduct*

A trading member is deemed guilty of un-businesslike conduct for any of the following or similar acts or omissions namely:

(a) Transaction or business dealings in fictitious names.

(b) Circulation of rumours.

(c) Any unfair dealing in securities which does not reflect the true market values.

(d) Market manipulation and rigging.

(e) Unwarrantable business which affects purchases or sales for its account or any account related to the trading member.

(f) If a trading member accepts less than a full and bona fide money payment in settlement of a debt due by another trading member arising out of a transaction in securities.

(g) Dishonoured cheque.

(h) Failure to carry out transactions with constituents.

(iii) *Unprofessional conduct*

A trading member is deemed guilty of unprofessional conduct for any of the following or similar acts or omissions namely:

(a) Business in securities in which dealings are not permitted

(b) Business for defaulting constituent who failed to carry out engagements relating to securities and is in default to another trading member

(c) Transacts in business with an insolvent without obtaining the consent of the relevant authority even if the individual has obtained his final discharge from an insolvency court

(d) Carrying out his business during his suspension period

(e) Business with suspended, expelled and defaulter trading members

(f) Business for employees of other trading members

(g) Business for Exchange employees if it makes a speculative transaction in which an employee of the Exchange is directly or indirectly interested

(h) If it advertises for business purposes or issues regularly circular or other business communications to persons other than its own constituents, trading members of the Exchange, banks and joint stock companies or publishes pamphlets, circular or any other literature or report or information relating to the stock markets with its name attached

(i) Evasion of margin requirements

(j) Evasion of brokerage charges

(k) Dealings with entities prohibited by SEBI to buy or sell or deal in securities market

4.7.2 Suspension of Business - Grounds

The Exchange can suspend the business of a trading member when it fails to provide the margin deposit and/or meets capital adequacy norms as provided in the Bye Laws, Rules and Regulations. The trading member shall remain suspended until he furnishes the necessary margin deposit or meet the capital adequacy requirements.

Further, the following are some grounds for suspension of business of the Trading Member, in part or whole:

(i) *Prejudicial business*

When the relevant authority finds that the trading member conducts business in a manner prejudicial to the Exchange by making purchases or sales of securities or offers to purchase or sell securities for the purpose of upsetting equilibrium of the market or bringing about a condition of demoralisation in which prices will not fairly reflect market values, or

(ii) *Unwarrantable business*

When in the opinion of the relevant authority the trading member engages in unwarrantable business or effects purchases or sales for its constituent's account or for any account in which it is directly or indirectly interested which purchases or sales are excessive in view of its constituent's or its own means and financial resources or in view of the market for such security, or

(iii) *Unsatisfactory financial condition*

When the relevant authority finds that the trading member is in a bad financial condition and it cannot be permitted to do business with safety to its creditors or the Exchange.

The suspension of business as above shall continue until the trading member has been allowed by the relevant authority to resume business. This may be done on its paying such deposit or on its doing such act or providing such thing as the relevant authority may require.

According to SEBI (Stock Brokers and Sub-Brokers) Regulations, 1992, a stockbroker is member of a stock exchange and is required to hold a certificate of registration from SEBI in order to buy, sell or deal in securities.

4.7.3 Suspension - Consequences

The suspension of a trading member has the following consequences:

(a) *Suspension of membership rights*

The suspended trading member shall, during the term of its suspension, be deprived of and excluded from all the rights and privileges of membership. This shall also include the right to attend or vote at any meeting of the general body of trading members of the relevant segment.

(b) *Rights of creditors unimpaired*

The suspension does not affect the rights of the trading members who are creditors of the suspended trading member.

(c) *Fulfillment of contracts*

The suspended trading members are bound to fulfill contracts outstanding at the time of its suspension.

(d) *Further business prohibited*

The suspended trading member should not, during the terms of its suspension, make any trade or transact any business with or through a trading member. With the permission of the relevant authority, however it can close the transactions outstanding at the time of its suspension.

(e) *Trading members not to deal with suspended trading member*

No trading member is allowed to transact business with a suspended trading member during the terms of its suspension, except with the prior permission of the relevant authority.

4.7.4 Expulsion - Consequences

The expulsion of a trading member has the following consequences:

(a) *Trading membership rights forfeited*

The expelled trading member shall forfeit to the Exchange its right of trading membership and all rights and privileges as a trading member of the Exchange including any right to the use of or any claim upon or any interest in any property or funds of the Exchange. But any liability of any such trading member to the Exchange or to any trading member of the Exchange shall continue and remain unaffected by its expulsion.

(b) *Office vacated*

The expulsion would create a vacancy in any office or position held by the expelled trading member.

(c) *Rights of creditors unimpaired*

The expulsion does not affect the rights of the trading members, who are creditors of the expelled trading member.

(d) *Fulfillment of contracts*

The expelled trading members are bound to fulfill transactions outstanding at the time of his expulsion and it may with the permission of the relevant authority close such outstanding transactions with or through a trading member.

(e) *Trading members not to deal with expelled trading member*

No trading member is allowed to transact business for or with or share brokerage

with the expelled trading member except with the previous permission of the relevant authority.

(f) *Consequences of declaration of defaulter to follow*

The provisions of pertaining to default and Protection Fund mentioned in the byelaws become applicable to the trading member expelled from the Exchange as if such trading member has been declared a defaulter.

4.7.5 Declaration of Defaulter

A trading member may be declared a defaulter by direction /circular/notification of the relevant authority of the trading segment if:

(a) he is unable to fulfill his obligations; or

(b) he admits or discloses his inability to fulfill or discharge his duties, obligations and liabilities; or

(c) he fails or is unable to pay within the specified time the damages and the money difference due on a closing-out effected against him under the bye laws, rules and regulations; or

(d) he fails to pay any sum due to the Exchange or to submit or deliver to the Exchange on the due date, delivery and receive orders, statement of differences and securities, balance sheet and such other clearing forms and other statements as the relevant authority may from time to time prescribe; or

(e) if he fails to pay or deliver to the defaulters' committee all monies, securities and other assets due to a trading member who has been declared a defaulter within such time of the declaration of default of such trading member as the relevant authority may direct; or

(f) if he fails to abide by the arbitration proceedings as laid down under the bye laws, rules and regulations.

Besides, if a trading member is either expelled or declared a defaulter by any other recognised stock exchange on which he is a member, or if the registration certificate is cancelled by SEBI, then the said trading member is expelled from the Exchange.

4.8 Authorised Persons

Trading members of the Exchange can appoint authorised persons in the Futures & Options and Currency Derivatives Segments. Authorised persons can be individuals, registered partnership firms, bodies corporate or companies defined under the Companies Act, 1956. An authorised person introduces clients to the trading member and receives remuneration/ commission/ compensation from the trading member and not from the clients.

The clients introduced by the authorised person should have a direct relationship with

the trading member i.e. the member-constituent agreement, know your client forms, risk disclosure document, etc. are executed directly between the client and the trading member. The authorised person is not allowed to have any trading relationship with the clients. The trading member should issue the contract notes and bills directly to the client i.e. the authorized person should not issue contract notes, confirmation memo and/or bills in their name.

The clients introduced by the authorised person are required to deliver securities and make payments directly in the trade name of the trading member (as appearing on the SEBI registration certificate). Similarly, the trading member should deliver securities and make payments directly in the name of the clients.

4.9 Sub-brokers

The Trading Members of the Exchange may appoint sub-brokers to act as agents of the concerned Trading Member for assisting investors in buying, selling or dealing in securities. A sub-broker is an important intermediary between the Trading Member and the client.

A sub-broker may be an individual, a partnership firm or a corporate. The applicant (in case of individual), directors (in case of corporate) or partners (in case of partnership firm) need to comply with the following requirements:

(a) They should not be less than 21 years of age;

(b) They should not have been convicted of any offence involving fraud or dishonesty;

(c) They should have at least passed 12th standard equivalent examination from an institution recognized by the Government;

(d) They should not have been debarred by SEBI

Sub-brokers are affiliated to the Trading Members, and are required to be registered with SEBI. A sub-broker is allowed to be associated with only one Trading Member of the Exchange.

The sub-broker is required to adhere to NSE's 'Know your Clients' (KYC) requirements. The Trading Member has to ensure the settlement of all its deals, even if the deals may have originated from its sub-broker.

In case the Trading Member or a sub-broker intends to cancel the registration as a sub-broker, the sub-broker is required to submit the original SEBI Registration certificate through their affiliated Trading Member. While applying for cancellation of registration, the affiliated Trading Member needs to give a public notification to this effect.

4.10 Broker-Client Relationship

4.10.1 Client Registration Documents

The Trading Member is required to enter into an agreement in the specified format provided by NSE with the client before accepting orders on latter's behalf. The agreement is executed on non-judicial stamp paper of adequate value, duly signed by both the parties on all the

pages. Copy of the agreement has to be kept with the TM permanently. The agreement should contain all the clauses mentioned in Uniform Documentary Requirement (UDR). Stock broker may incorporate any additional clauses in these documents provided these are not in conflict with any of the clauses in the model document, and also the rules, regulations, articles, byelaws, circulars, directives and guidelines. There should be segregation of mandatory and voluntary documents/clauses pertaining to client registration in separate docket (compilation of documents). In case of internet trading, in addition to clauses mentioned in UDR, the client has to mention clauses pertaining to internet trading.

Under "Know Your Client (KYC)" requirements, the Trading Member should seek information such as investor risk profile, financial profile, investor identification details, address details, income, PAN number, employment, age, investments experience and trading preference.

The Trading Member has to obtain a recent passport size photograph (photographs of partners/ whole time directors, individual promoters holding 5% or more, either directly or indirectly, in the shareholding of the company and of persons authorized to deal in securities, and of each of their clients in case of individual clients).

The Trading Member should also take proof of identification and address of the client. In-person verification should be done by the trading member's staff. Name & signature of the person doing the in-person verification, together with the stamp of Trading Member should be on the KYC form.

Under Member Constituent Agreement (MCA), trading members are required to make the constituent/clients aware of

(a) trading segment to which the Trading Member is admitted,

(b) particulars of SEBI registration number,

(c) employee primarily responsible for the constituent's affairs,

(d) the precise nature of the trading member's liability for business to be conducted,

(e) basic risks involved in trading on the Exchange (equity and other instruments) including any limitations on the liability and the capacity in which the trading member acts.

In order to assess the risk involved in trading, the Trading Member is required to issue Risk Disclosure Document (RDD) in such format, as may be prescribed by the Exchange from time to time, and should obtain the same from his constituents, duly signed.

Execution of client registration form, MCA and RDD is optional in case of institutional clients.

A stock-broker should not deal knowingly, directly or indirectly, with a client who defaults to another stock-broker. There is no limit on the number of clients for a TM.

Copy of the client registration documents is required to be sent to the clients. Trading member must ensure periodic review of client's financial information & client database.

4.10.2 Unique Client Code (UCC)

SEBI has made it mandatory for all Trading Members/ brokers to use unique client codes for all clients. Brokers are required to collect and maintain the Permanent Account Number (PAN) allotted by Income Tax Department for all their clients.

Brokers should verify the documents with respect to the UCC and retain a copy of the document. They are also required to provide the PAN and UCC of their clients to the stock exchanges/ clearing corporations and have these details updated before placing orders for the clients. The stock exchanges are also required to maintain a database of client details submitted by brokers.

4.10.3 Client Margins

Members should have a prudent system of risk management to protect themselves from client default. Margins are an important element of such a system. The policy of risk management addressing the margin requirements should be well documented and be made accessible to the clients and the stock exchanges.

In capital market segment, however, the quantum of these margins, the form and the mode of collection are left to the discretion of the members. The margin so collected is kept separately in the client bank account/ client beneficiary account. In case of default, they are utilized for making payment to the clearing corporation for margin and settlement with respect to that client.

4.10.4 Execution of Orders

Where the constituent requires an order to be placed, or any of his order to be modified or cancelled after the order has entered the system but has not been traded, the Trading Member may, if it so desires, ask for the instruction in writing. The Trading Member should accordingly provide the constituent with the relevant order confirmation/ modification / cancellation slip or copy thereof.

Similarly, the Trading Member may, if it so desires, obtain in writing, the delivery and payment requirement in any instructions of an order that it receives from the constituent.

Where a trading member receives a request for order modification or order cancellation from the constituent, it should duly bring it to their notice that if the total order results in a trade in the meantime, the requests for modification or cancellation cannot be executed.

4.10.5 Contract Note

Contract note is a confirmation of trade(s) done on a particular day for and on behalf of a client.

A stock-broker should issue a contract note to his clients for trades (purchase/ sale of securities). The contract note should contain name and address (registered office address as well as dealing office address) of the Trading Member, the SEBI registration number of

the Trading Member, details of trade viz. order number, trade number, order time, trade time, security name, quantity, trade price, brokerage, settlement number and details of other levies.

The Trading Member is required to preserve the duplicate copy of the contract notes issued for a minimum of five years. The TM should ensure that:

(a) Contract note is issued to a client within 24 hours and should be signed by the trading member or by an authorized signatory trading member;

(b) Contract notes are in the prescribed format;

(c) Stamp duty is paid;

(d) All statutory levies are shown separately in the contract note.

4.10.6 Payments / Deliveries of Securities

Every Trading Member should make payments to his clients or deliver the securities purchased within one working day of pay-out unless the client has requested otherwise.

4.10.7 Brokerage

The maximum brokerage chargeable by the Trading Member in respect of trades effected in the securities admitted to dealing on the CM segment of the Exchange is fixed at 2.5% of the contract price, exclusive of statutory levies. This maximum brokerage is inclusive of sub-brokerage.

The brokerage should be indicated separately from the price, in the contract note. The TM may not share brokerage with a person who is a TM or in employment of another TM.

Example:

If a client has sold 10,000 shares of a scrip @ Rs. 50, what is the maximum brokerage that the client can be charged?

Maximum brokerage = brokerage rate*value of the transaction

= 2.5 %*(10000 shares*Rs. 50)

= Rs. 12,500

4.10.8 Segregation of Bank Accounts

The Trading Member should maintain separate bank accounts for the client's funds and the member's own funds.

Funds should be transferred from the client account to the clearing account for the purpose of funds pay-in obligations on behalf of the clients and vice-versa in case of funds pay-out.

No payment for a transaction in which the Trading Member is taking position as a principal, is allowed to be made from the client's account.

4.10.9 Segregation of Demat (beneficiary) Accounts

The Trading Members should keep the dematerialised securities of constituents in a separate beneficiary account, distinct from the beneficiary account maintained for holding their own dematerialised securities.

No delivery towards the own transactions of the Trading Members is allowed to be made from the account meant for constituents. For this purpose, every Trading Member is required to open a beneficiary account in the name of the Trading Member exclusively for the securities of the constituents (to be referred to as "constituents' beneficiary account").

A trading member may keep one consolidated constituents' beneficiary account for all its constituents or different accounts for each of its constituents as it may deem fit.

4.11 Investor Service Cell & Arbitration

Investor complaints received against the Trading Members / companies in respect of claims/ disputes for transactions executed on the Exchange are handled by the Investor Service Cell (ISC).

The complaints are forwarded to the Trading Members for resolution and seeking clarifications. The ISC follows-up with the Trading Members and makes efforts to resolve the complaint expeditiously.

In certain cases, on account of conflicting claims made by the investor and the Trading Member, when it is not possible to administratively resolve the complaint, investors are advised to take recourse to the arbitration mechanism prescribed by the Exchange.

Arbitration, which is a quasi judicial process, is an alternate dispute resolution mechanism prescribed under the Arbitration and Conciliation Act, 1996. The Exchange bye-laws prescribe the provisions in respect of arbitration and the procedure therein has been prescribed in the regulations. The reference to arbitration should be filed within six months from the date when the dispute arose. The time taken by the ISC is excluded by the arbitrator, while considering the issue of limitation.

4.12 Code of Advertisement

Trading members of the Exchange while issuing advertisements in the media have to comply with the Code of Advertisement prescribed by the Exchange. In pursuance of that, a copy of an advertisement has to be submitted to the Exchange to get a prior approval before its issue in the publication/media. Trading members not complying with the Code of Advertisement may have to face disciplinary proceedings.

SEBI has advised the stock exchanges to ensure that their brokers/ sub-brokers do not advertise their business, including in their internet sites, by subsidiaries, group companies etc., in prohibition of code of conduct . The code of conduct in the regulations require a stock broker/ sub-broker not to advertise his business publicly unless permitted by the stock exchange and not to resort to unfair means of inducing clients from other stock brokers.

Chapter 5: Regulatory Framework[1]

Various activities in the securities market in India are regulated, in a coordinated manner by four regulators, namely, Department of Economic Affairs (DEA) of the Ministry of Finance, Ministry of Company Affairs, Securities and Exchange Board of India (SEBI) and the Reserve Bank of India (RBI).

The regulators seek to ensure that the market participants behave in the desired manner, so that the securities market continues to be a major source of finance for industry and government, and the interests of investors are protected.

A High Level Coordination Committee on Financial Markets, headed by the Governor, Reserve Bank of India coordinates on jurisdiction overlaps between the regulators.

Given its dynamic nature, the market keeps throwing up new exigencies, and the need for quick regulatory actions. This is achieved through the exercise of delegated legislation by the regulators. Depending on the circumstances, the regulators issue notifications, circulars and guidelines, which are to be complied with, by the market participants.

The Government has framed rules under the Securities Contract (Regulation) Act SC(R)A, SEBI Act and the Depositories Act. SEBI has framed regulations under the SEBI Act and the Depositories Act for registration and regulation of all market intermediaries, for prevention of unfair trade practices, insider trading, etc. Self-regulatory organizations (SROs) like stock exchanges have also laid down their rules and regulations for market participants.

The regulatory and supervisory framework of the securities market in India is being progressively strengthened through various legislative and administrative measures and is consistent with the best international benchmarks, such as, standards prescribed by the International Organisation of Securities Commissions (IOSCO).

The Union Government is in the process of setting up a Financial Stability & Development Council (FSDC) to strengthen and institutionalize the mechanism for maintaining financial stability, and to create an institutional mechanism that can coordinate and oversee the reform and development agenda for the financial markets as a whole.

5.1 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 and 2007. It now governs the trading of securities in India.

[1]This chapter only touches upon the broad regulatory framework for the Indian securities markets, giving a flavour of various acts, rules and regulations that have a bearing on the functioning of the markets. For greater details, it is recommended that original acts, rules and regulations may be referred to in case detailed information is desired.

The term "*securities*" has been defined in the amended SC(R)A under 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
- 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 a recognized stock exchange, in accordance with the rules and bye–laws of such stock exchanges.

5.2 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.

5.3 SEBI (Intermediaries) Regulations, 2008

One of the main functions of SEBI is to register and regulate the functioning of various types of intermediaries and persons associated with securities market in a manner as to ensure smooth functioning of the markets and protection of interests of the investors.

These intermediaries, as detailed in the SEBI Act are: stock-brokers, sub- broker, share transfer agents, bankers to an issue, trustees of trust deed, registrars to an issue, merchant bankers, underwriters, portfolio managers, investment advisers, depositories, participants, custodians of securities, foreign institutional investors, credit rating agencies, asset management companies, clearing members of a clearing corporation, trading member of a derivative segment of a stock exchange, collective investment schemes, venture capital funds, mutual funds, and any other intermediary associated with the securities market.

SEBI had issued regulations governing the registration and regulatory framework for each of these intermediaries. However, given the fact that many requirements and obligations of most intermediaries are common, SEBI has consolidated these requirements and issued the SEBI (Intermediaries) Regulations, 2008. These regulations were notified on May 26, 2009. These regulations apply to all the intermediaries mentioned above, except foreign institutional investors, foreign venture capital investors, mutual funds, collective investment schemes and venture capital funds.

The salient features of the Regulations are as under:

a) The SEBI Regulations put in place a comprehensive regulation which is applicable to all intermediaries. The common requirements such as grant of registration, general obligations, common code of conduct, common procedure for action in case of default and miscellaneous provisions are applicable for all intermediaries.

b) The registration process has been simplified. An applicant can file application in the prescribed format along with additional information as required under the relevant regulations along with the requisite fees. The existing intermediaries may, within the prescribed time, file the disclosure in the specified form. The disclosures are required to be made public by uploading the information on the website specified by SEBI. The information of commercial confidence and private information furnished to SEBI shall be treated confidential. In the event intermediary wishes to operate in a capacity as an intermediary in a new category, such person may only file the additional shortened forms disclosing the specific requirements of the new category as per the relevant regulations.

c) The *Fit and Proper* criteria have been modified to make it principle based. The common code of conduct has been specified at one place.

d) The registration granted to intermediaries has been made permanent unless surrendered by the intermediary or suspended or cancelled in accordance with these regulations.

e) Procedure for action in case of default and manner of suspension or cancellation of certificate has been simplified to shorten the time usually faced by the parties without compromising with the right of reasonable opportunity to be heard. Surrender of certificate has been enabled without going through lengthy procedures.

f) While common requirements will be governed by the new regulations, the intermediary-specific requirements continue to be as per the relevant regulations applicable to individual intermediaries. The relevant regulations are amended from time to time to provide for the specific requirements.

5.4 SEBI (Prohibition of Insider Trading) Regulations, 1992

The malpractice of 'insider trading' affects the innocent investors. In simple terms 'insider trading' means selling or buying in securities on the basis of price sensitive unpublished information of a listed corporate that, if published, could lead to a fall or rise in the prices of shares of the corporate.

To tackle the problem of insider trading, SEBI issued the SEBI (Insider Trading) Regulations 1992. These regulations were further made stringent through amendments in February 2002 and they were notified as the SEBI (Insider Trading) (Amendment) Regulations 2002.

5.4.1 Definitions

The important definitions used in the regulations are:

(i) *Dealing in securities* means an act of subscribing, buying, selling or agreeing to subscribe, buy, sell or deal in any securities by any person either as principal or agent.

(ii) *Insider* means any person who, is or was connected with the company or is deemed to have been connected with the company, and who is reasonably expected to have access to unpublished price sensitive information in respect of securities of a company, or who has received or has had access to such unpublished price sensitive information.

(iii) *A connected person* means any person who:

(a) is a director, as defined in clause (13) of section 2 of the Companies Act, 1956, of a company, or is deemed to be a director of that company by virtue of sub-clause (10) of section 307 of that Act, or

(b) occupies the position as an officer or an employee of the company or holds a position involving a professional or business relationship between himself and the company,

whether temporary or permanent, and who may reasonably be expected to have an access to unpublished price sensitive information in relation to that company.

(iv) A person is *deemed to be a connected person* if such a person:

(a) is a company under the same management or group or any subsidiary company thereof within the meaning of section (1B) of section 370, or sub-section (11) of section 372, of the Companies Act, 1956 or sub-clause (g) of section 2 of the Monopolies and Restrictive Trade Practices Act, 1969 as the case may be; or

(b) is an intermediary as specified in section 12 of the SEBI Act, 1992, Investment company, Trustee Company, Asset Management Company or an employee or director thereof or an official of a stock exchange or of clearing house or corporation;

(c) is a merchant banker, share transfer agent, registrar to an issue, debenture trustee, broker, portfolio manager, investment advisor, sub-broker, investment company or an employee thereof, or, is a member of the board of trustees of a mutual fund or a member of the board of directors of the asset management company of a mutual fund or is an employee thereof who have a fiduciary relationship with the company;

(d) is a member of the board of directors, or an employee, of a public financial institution as defined in section 4A of the Companies Act, 1956;

(e) is an official or an employee of a self regulatory organisation recognised or authorised by the Board of a regulatory body;

(f) is a relative of any of the aforementioned persons;

(g) is a banker of the company.

(h) is relative of the connected person.

(v) *Price sensitive information* means any information which is related directly or indirectly to a company and which, if published, is likely to materially affect the price of securities of a company. It includes only such information which, if published, is likely to materially affect the price of securities of a company. The following are deemed to be price sensitive information:

(a) periodic financial results of the company;

(b) intended declaration of dividends (both interim and final);

(c) issue of securities or buy-back of securities;

(d) any major expansion plans or execution of new projects;

(e) amalgamation, mergers or takeovers;

(f) disposal of the whole or substantial part of the undertaking;

(g) significant changes in policies, plans or operations of the company.

(vi) *Unpublished information* means information which is not published by the company or

its agents and is not specific in nature. However, speculative reports in print or electronic media are not considered as published information.

5.4.2 Prohibition on Dealing, Communicating or Counseling (Chapter II)

Under this regulation, no insider should:

(a) either on his own behalf or on behalf of any other person, deal in securities of a company listed on any stock exchange when in possession of any unpublished price sensitive information;

(b) communicate, counsel or procure, directly or indirectly, any unpublished price sensitive information to any person who, while in possession of such unpublished price sensitive information, should not deal in securities. This is however, not applicable to any communication required in the ordinary course of business or profession or employment or under any law.

The regulations require that no company should deal in the securities of another company or associate of that other company while in possession of any unpublished price sensitive information.

5.4.3 Investigation

If SEBI suspects any person of having violated the provisions of insider regulation, it may make inquiries with such person or with the stock exchanges, mutual funds, other persons associated with the securities market, intermediaries and self-regulatory organisation in the securities market. Based on this, it will form a prima facie opinion as to whether there is any violation of insider regulations.

Where SEBI forms a prima facie opinion that it is necessary to investigate and inspect the books of accounts, either documents and records of an insider or the stock exchanges, mutual funds, other persons associated with the securities market, intermediaries and self-regulatory organisation in the securities market, it may appoint an investigating authority for the purpose.

The investigating authority has to submit its report to SEBI, after completion of investigations in accordance with the provisions of the regulations.

After considering the report, SEBI is required to communicate its findings to the suspected person and seek a reply from such person. Such suspected person is required to reply to the findings within 21 days to SEBI. After receipt of the reply, SEBI may take such measures to safeguard and protect the interest of investors, securities market and for due compliance with the insider trading regulations.

SEBI also has powers to appoint an auditor to investigate into the books of accounts or the affairs of the insider or the stock exchanges, mutual funds, other persons associated with the securities market, intermediaries and self-regulatory organisation in the securities market.

5.4.4 Disclosures and Internal Procedure for Prevention of Insider Trading (Chapter IV)

All listed companies and organisations associated with securities markets such as intermediaries, asset management company, trustees of mutual funds, self-regulatory organisations recognised by SEBI, recognised stock exchanges, clearing house or corporations, public financial institutions and professional firms such as auditors, accountancy firms, law firms, analysts, consultants, etc., assisting or advising listed companies, are required to frame a code of internal procedures and conduct as per the prescribed format provided in SEBI (Prohibition of Insider Trading) Regulations without diluting it any manner and ensure compliance of the same.

The regulations require certain disclosures to be made by directors, officers and substantial shareholders in listed companies. These are:

(i) Initial Disclosure:

(a) Any person who holds more than 5% shares or voting rights in any listed company should disclose to the company in prescribed form, the number of shares or voting rights held by such person, on becoming such holder, within 2 working days of:

(i) the receipt of intimation of allotment of shares; or

(ii) the acquisition of shares or voting rights, as the case may be.

(b) Any person who is a director or officer of a listed company should disclose to the company in prescribed form, the number of shares or voting rights held by such person, within 2 working days of becoming a director or officer of the company.

(ii) Continual Disclosure

(a) Any person who holds more than 5% shares or voting rights in any listed company should disclose to the company in prescribed form the number of shares or voting rights held and change in shareholding or voting rights, even if such change results in shareholding falling below 5%, if there has been change in such holdings from the last disclosure and such change exceeds 2% of total shareholding or voting rights in the company.

(b) Any person who is a director or officer of a listed company, should disclose to the company in prescribed form, the total number of shares or voting rights held and change in shareholding or voting rights, if there has been a change in such holdings from the last disclosure made and the change exceeds Rs. 5 lakh in value or 25,000 shares or 1% of total shareholding or voting rights, whichever is lower. The disclosure mentioned above should be made within 2 working days of:

(i) the receipt of intimation of allotment of shares, or

(ii) the acquisition or sale of shares or voting rights, as the case may be.

(iii) Disclosure by Company to Stock Exchanges

Every listed company, within two days of receipt, should disclose to all stock exchanges on which the company is listed, the information relating to continual and initial disclosure given above. The disclosures required under this regulation may also be made through electronic filing in accordance with the system devised by the stock exchanges.

Further, the SEBI Act, which inter-alia, prescribes the penalty for insider trading (Section 15G), was amended in 2002 to increase the penalty for insider trading to Rs 25 crore or three times the amount of profits made out of insider trading, whichever is higher.

5.5 SEBI (Prohibition of fraudulent and Unfair Trade Practices re lating to securities market) Regulations, 2003

The SEBI (Prohibition of Fraudulent and Unfair Trade Practices relating to the Securities Market) Regulations, 2003 enable SEBI to investigate into cases of market manipulation and fraudulent and unfair trade practices. The regulations specifically prohibit market manipulation, misleading statements to induce sale or purchase of securities, unfair trade practices relating to securities.

5.5.1 Definitions

The important terms defined under the regulations are:

(i) *Fraud* includes any act, expression, omission or concealment committed, whether in a deceitful manner or not, by a person or by any other person or his agent while dealing in securities in order to induce another person with his connivance or his agent to deal in securities, whether or not there is any wrongful gain or avoidance of any loss, and should also include:

(a) a knowing misrepresentation of the truth or concealment of material fact in order that another person may act to his detriment;

(b) a suggestion as to a fact which is not true by one who does not believe it to be true;

(c) an active concealment of a fact by one having knowledge or belief of the fact;

(d) a promise made without any intention of performing it;

(e) a representation made in a reckless and careless manner whether it be true or false;

(f) any such act or omission as any other law specifically declares to be fraudulent;

(g) deceptive behaviour by a person depriving another of informed consent or full participation;

(h) a false statement made without reasonable ground for believing to be true;

(i) the act of an issuer of securities giving out misinformation that affects the market price of the security, resulting in investors being effectively misled even though they did not rely on the statement itself or anything derived from it other than the market price.

The term "fraudulent" should be construed accordingly. Nothing contained in this clause is applicable to any general comments made in good faith in regard to the economic policy of the Government; the economic situation of the country; trends in the securities market; any other matter of a like nature.

(ii) *Dealing in Securities* is defined to include an act of buying, selling or subscribing pursuant to any issue of any securities, or agreeing to buy, sell or subscribe to any issue of any securities, or otherwise transacting in any way in any security by any person as principal, agent or intermediary as defined under the SEBI Act.

5.5.2 Prohibition of Certain Dealings in Securities

The regulation provides that no person should directly or indirectly:

(a) buy, sell or otherwise deal in securities in a fraudulent manner;

(b) use or employ, in connection with issue, purchase or sale of any security listed or proposed to be listed in a recognised stock exchange, any manipulative or deceptive device or contrivance in contravention of the provisions of the Act or the rules or the regulations made thereunder;

(c) employ any device, scheme or artifice to defraud in connection with dealing in or issue of securities which are listed or proposed to be listed on a recognised stock exchange;

(d) engage in any act, practice, course of business which operates or would operate as fraud or deceit upon any person in connection with any dealing in or issue of securities which are listed or proposed to be listed on a recognised stock exchange in contravention of the act, rules and regulations.

5.5.3 Prohibition of Manipulative, Fraudulent and Unfair Trade Practices

The Regulation provides that no person should indulge in a fraudulent or an unfair trade practice in securities. Any dealing in securities is deemed to be fraudulent or an unfair trade practice if it involves fraud and may include all or any of the following:

(a) indulging in an act which creates false or misleading appearance of trading in the securities market;

(b) dealing in a security not intended to effect transfer of beneficial ownership but intended to operate only as a device to inflate, depress or cause fluctuations in the price of such security for wrongful gain or avoidance of loss;

(c) advancing or agreeing to advance any money to any person thereby inducing any other person to offer to buy any security in any issue only with the intention of securing the minimum subscription to such issue;

(d) paying, offering or agreeing to pay or offer, directly or indirectly, to any person any money or money's worth for inducing such person for dealing in any security with the object of inflating, depressing, maintaining or causing fluctuation in the price of such security;

(e) any act or omission amounting to manipulation of the price of a security;

(f) publishing or causing to publish or reporting or causing to report by a person dealing in securities any information which is not true or which he does not believe to be true prior to or in the course of dealing in securities.

(g) entering into a transaction in securities without intention of performing it or without intention of change in ownership of such security.

(h) selling, dealing or pledging of stolen or counterfeit security whether in physical or dematerialized form.

(i) an intermediary promising a certain price in respect of buying or selling of a security to a client and waiting till a discrepancy arises in the price of such security and retaining the difference in prices as profit for himself.

(j) an intermediary providing his clients with such information relating to a security as cannot be verified by the clients before their dealing in such security.

(k) an advertisement that is misleading or that contains information in a distorted manner and which may influence the decision of the investors.

(l) an intermediary reporting trading transactions to his clients entered into on their behalf in an inflated manner in order to increase his commission and brokerage.

(m) an intermediary not disclosing to his client transactions entered into on his behalf including taking an option position.

(n) circular transactions in respect of a security entered into between intermediaries in order to increase commission to provide a false appearance of trading in such security or to inflate, depress or cause fluctuations in the price of such security.

(o) encouraging the clients by an intermediary to deal in securities solely with the object of enhancing his brokerage or commission.

(p) an intermediary predating or otherwise falsifying records such as contract notes.

(q) an intermediary buying or selling securities in advance of a substantial client order or whereby a futures or option position is taken about an impending transaction in the same or related futures or options contract.

(r) planting false or misleading news which may induce sale or purchase of securities.

5.6 The Depositories Act, 1996

The paper-based ownership and transfer of securities was a major drawback of the Indian securities markets since it often resulted in delay in settlement and transfer of securities, leading to 'bad delivery', theft, forgery etc. The rapid growth in number and volume of transactions in the securities markets further highlighted the limitations of handling securities in the physical/ paper mode. As a result, in line with the developments in the securities industry worldwide the paper-based settlement and clearing system was replaced with depository system or scripless trading system. This transition was facilitated by the Depositories Act, 1996.

This Act provides for the establishment of depositories in securities with the objective of ensuring free transferability of securities with speed, accuracy and security by:

(a) making securities of public limited companies freely transferable subject to certain exceptions;

(b) dematerialising the securities in the depository mode; and

(c) providing for maintenance of ownership records in a book entry form. In order to streamline the settlement process, the Act envisages transfer of ownership of securities electronically by book entry without making the securities move from person to person.

The Act has made the securities of all public limited companies freely transferable, restricting the company's right to use discretion in effecting the transfer of securities, and the transfer deed and other procedural requirements under the Companies Act have been dispensed with.

5.6.1 Definitions

The terms used in the Act are defined as under:

(a) *Beneficial owner* means a person whose name is recorded as such with a depository.

(b) *Depository* means a company, formed and registered under the Companies Act, 1956 and which has been granted a certificate of registration under sub-section (1A) of section 12 of the SEBI Act, 1992.

(c) *Issuer* means any person making an issue of securities.

(d) *Participant* means a person registered as such under sub-section (1A) of section 12 of the SEBI Act, 1992.

(e) *Registered owner* means a depository whose name is entered as such in the register of the issuer.

5.6.2 Key Provisions

No depository can act as a depository unless it obtains a certificate of commencement of business from the SEBI Board.

The Depositories Act, defines the rights and obligations of depositories, participants, issuers and beneficial owners which are mentioned below:

(i) Agreement between Depository and Participant: A depository is required to enter into an agreement in the specified format with one or more participants as its agent.

(ii) Services of Depository: Any person, through a participant, may enter into an agreement, in such form as may be specified by the bye-laws, with any depository for availing its services.

(iii) Surrender of Certificate of Security: Any person who has entered into an agreement with a depository should surrender the certificate of security, for which he seeks to avail the services of a depository, to the issuer in such manner as may be specified by the regulations.

The issuer, on receipt of certificate of security, should cancel the certificate of security and substitute in its records the name of the depository as a registered owner in respect of that security and inform the depository accordingly.

A depository should, on receipt of information enter the name of the person in its records, as the beneficial owner in respect of that security and inform the investor accordingly.

(iv) Registration of Transfer of Securities with Depository; On receipt of intimation from a participant, the depository is required to register the transfer of security in the name of the transferee. If a beneficial owner or a transferee of any security seeks to have custody of such security, the depository should inform the issuer accordingly.

(v) Options to Receive Security Certificate or Hold Securities with Depository: Every person subscribing to securities offered by an issuer should have the option either to receive the security certificates or hold securities with a depository. Where a person opts to hold a security with a depository, the issuer should intimate such depository the details of allotment of the security, and on receipt of such information the depository should enter in its records the name of the allottee as the beneficial owner of that security.

(vi) Securities in Depositories to be in Fungible Form: All securities held by a depository should be in dematerialised and be in fungible form.

(vii) Rights of Depositories and Beneficial Owner: A depository is deemed to be the registered owner for the purpose of effecting transfer of ownership of security on behalf of a beneficial owner. The depository as a registered owner does not have any voting rights or any other rights in respect of securities held by it. The beneficial owner is entitled to all the rights and benefits and is subjected to all the liabilities in respect of his securities held by a depository.

(viii) Pledge or Hypothecation of Securities held in a Depository: A beneficial owner may with the previous approval of the depository create a pledge or hypothecation in

respect of a security owned by him through a depository. Every beneficial owner is required to give intimation of such pledge or hypothecation to the depository and accordingly the depository makes entries in its records. Any entry in the records of a depository would act as an evidence of a pledge or hypothecation.

(ix) Furnishing of Information and Records by Depository and Issuer: Every depository should furnish to the issuer information about the transfer of securities in the name of beneficial owners at such intervals and in such manner as may be specified by the bye-laws. Every issuer should make available to the depository copies of the relevant records in respect of securities held by such depository.

(x) Option to Opt out in Respect of any Security: If a beneficial owner seeks to opt out of a depository in respect of any security, he should inform the depository accordingly. After receiving the information, the depository is required to make appropriate entries in its records and inform the issuer. Within thirty days of the receipt of intimation from the depository and on fulfillment of such conditions and payment of such fees as may be specified by the regulations, the issuer is required to issue the certificate of securities to the beneficial owner or the transferee, as the case may be.

(xi) Depository to Indemnify Loss in certain cases: In case of any loss caused to the beneficial owner due to the negligence of the depository or the participant, the depository has to indemnify the beneficial owner. Where the loss due to the negligence of the participant is indemnified by the depository, the depository has the right to recover the same from such participant.

5.7 Indian Contract Act, 1872

In the securities markets, the SCRA governs the contracts for or relating to the purchase or sale of securities. However, the provisions of the Indian Contract Act, 1872 also have a bearing on these securities' contracts as this is a general Act which governs the rights of parties in a contract and the effects thereof.

Following are some important terms/definitions used in the Indian Contract Act:

(i) *Contract*: According to section 2(h) of the Indian Contract Act, 1872, a contract is an agreement enforceable by law. Therefore, there has to be an agreement to create a contract and secondly, it has to satisfy certain requirements mentioned in section 10 of the Act, i.e., the agreement has to be between parties competent to contract, with their free consent, for a lawful object and with lawful consideration, and it should not have been expressly declared as void agreement.

(ii) *Standard Form Contracts*: With an enormous increase in commercial transactions, the concept of Standard Form Contracts has come into existence. Various business

organisations like insurance companies, airways, securities market regulator, other businessman etc. generally get the terms of the contract printed on a standard form and the other side is simply required to agree to the same, or sometimes to sign in token of his having agreed to the terms of the contract so drafted.

A standard form contract is a pre-established record of legal terms regularly used by a business entity or firm in transactions with customers. The record specifies the legal terms governing the relationship between the firm and another party. The firm requires the other party to accept the record without amendment and without expecting the other party to know or understand its terms. A Standard Form Contract is effective upon acceptance.

(iii) *Agency Contract:* An agent is a person employed to do any act for another or to represent another in dealings with third persons, as per section 182 of the Indian Contract Act, 1872. The person for whom such act is done, or who is so represented, is called the *Principal*. Principal is bound by the acts done by an agent or the contracts entered into by him on behalf of the principal in the same manner, as if the acts had been done or the contracts had been entered into by the principal himself, in person.

An *agent* has a dual capacity: one, he serves as a connecting link between his principal and the third person, and second, he can have a contractual relationship with his principal.

An agent, having an authority to do an act, has authority to do every lawful thing which is necessary in order to do such act. An agent having authority to carry on a business, has authority to do every lawful thing necessary for the purpose, or usually done in the course, of conducting such business.

(iv) *Sub-agent*: A sub-agent is a person employed by, and acting under the control of, the original agent in the business of the agency. Though the general rule is against delegation of authority by an agent or the appointment of a sub-agent, there could be such an appointment in exceptional situations recognised by law.

Thus, when any act does not need personal performance by the agent himself, or the principal agrees to the appointment of a sub-agent, or the ordinary custom of trade permits the same, or the nature of the business of agency so warrants, nature of the agency so warrants, a sub-agent may be validly appointed by an agent.

When a sub-agent has been properly appointed the position of various parties is as under:

(a) The principal is, so far as regards third persons, represented by the sub-agent, and is bound by and responsible for his acts, as if he were an agent originally appointed by the principal.

(b) The agent is responsible to the principal for the acts of the sub-agent.

(c) The sub-agent is responsible for his acts to the agent, but not to the principal except in case of fraud or willful wrong.

5.8 Income Tax Act, 1961

Some of the important definitions related to Income Tax Act are as follows:

(i) *Domestic Company* means an Indian company, or any other company which, in respect of its income liable to tax under this act, has made the prescribed arrangements for the declaration and payment, within India, of the dividends (including dividends on preference shares) payable out of such income, as per Section 2 (22A).

(ii) Dividend, according to Section 2(22) includes:

(a) any distribution by a company of accumulated profits, whether capitalised or not, if such distribution entails the release by the company to its shareholders of all or any part of the assets of the company;

(b) any distribution to its shareholders by a company of debentures, debenture-stock, or deposit certificates in any form, whether with or without interest, and any distribution to its preference shareholders of shares by way of bonus, to the extent to which the company possesses accumulated profits, whether capitalised or not;

(c) any distribution made to the shareholders of a company on its liquidation, to the extent to which the distribution is attributable to the accumulated profits of the company immediately before its liquidation, whether capitalised or not;

(d) any distribution to its shareholders by a company on the reduction of its capital, to the extent to which the company possesses accumulated profits which arose after the end of the previous year ending next before the 1st day of April, 1933, whether such accumulated profits have been capitalised or not;

(e) any payment by a company, not being a company in which the public are substantially interested, of any sum (whether as representing a part of the assets of the company or otherwise) made after the 31st May, 1987, by way of advance or loan to a shareholder, being a person who is the beneficial owner of shares (not being shares entitled to a fixed rate of dividend whether with or without a right to participate in profits) holding not less than ten per cent of the voting power, or to any concern in which such shareholder is a member or a partner and in which he has a substantial interest (hereafter in this clause referred to as the said concern) or any payment by any such company on behalf, or for the individual benefit, of any such shareholder, to the extent to which the company in either case possesses accumulated profits;

But 'dividend' does not include:

(a) a distribution made in accordance with sub-clause (c) or sub-clause (d) in respect of any share issued for full cash consideration, where the holder of the shares is not entitled in the event of liquidation to participate in the surplus assets;

(b) a distribution made in accordance with sub-clause (c) or sub-clause (d) in so far as such distribution is attributable to the capitalised profits of the company representing

bonus shares allotted to its equity shareholders after the 31st day of March, 1964 (and before the 1st day of April, 1965);

(c) any advance or loan made to a shareholder (or the said concern) by a company in the ordinary course of its business, where the lending of money is a substantial part of the business of the company;

(d) any dividend paid by a company which is set off by the company against the whole or any part of any sum previously paid by it and treated as a dividend within the meaning of sub-clause (e), to the extent to which it is so set off;

(e) any payment made by a company on purchase of its own shares from a shareholder in accordance with the provisions of section 77A of the Companies Act, 1956.

(f) any distribution of shares pursuant to a demerger by the resulting company to the shareholders of the demerged company (whether or not there is a reduction of capital in the demerged company).

(iii) *Dividend Income* (Section 8): For the purposes of inclusion in the total income of an assessee:

(a) any dividend declared by a company or distributed or paid by it within the meaning of sub-clause (a) or sub-clause (b) or sub-clause (c) or sub-clause (d) or sub-clause (e) of clause (22) of Section 2, should be deemed to be the income of the previous year in which it is so declared, distributed or paid, as the case may be;

(b) any interim dividend should be deemed to be the income of the previous year, in which the amount of such dividend is unconditionally made available by the company to the member who is entitled to it.

(iv) *Interest on Securities* (Clause 28B of Section 2) means:

(a) interest on any security of the Central Government or a State Government,

(b) interest on debentures or other securities for money issued by or on behalf of a local authority or a company or a corporation established by a Central, State or provincial Act.

(v) *Capital Asset*

(a) Long term capital asset means a capital asset which is not a short term capital asset, as per Clause 29A of Section 2.

(b) Short term capital asset means a capital asset held by an assessee for not more than thirty-six months* immediately preceding the date of its transfer, (Clause 42A of Section 2)

[* twelve months in the case of a share held in a company or any other security listed in a recognised stock exchange in India or a unit of the Unit Trust of India established under the Unit Trust of India Act, 1963 or a unit of a Mutual Fund specified under clause (23D) of section 10 or a zero coupon bond]

(vi) *Capital Gains (Section 45)*

Any profits or gains arising from the transfer of a capital asset effected in the previous year should, save as otherwise provided in sections (54, 54B, 54D, 54E, 54EA, 54EB, 54F, 54G and 54H), be chargeable to income-tax under the head 'Capital gains', and should be deemed to be the income of the previous year in which the transfer took place.

Where any person has had at any time during previous year any beneficial interest in any securities, then any profits or gains arising from transfer made by the depository or participant of such beneficial interest in respect of securities should be chargeable to income-tax as the income of the beneficial owner of the previous year in which such transfer took place and should not be regarded as income of the depository who is deemed to be registered owner of securities by virtue of sub-section (1) of section 10 of the Depositories Act, 1996, and for the purposes of section 48 and proviso to clause (42A) of section 2, the cost of acquisition and the period of holding of any securities should be determined on the basis of the *first-in-first-out* method.

Types of Capital Gains

1. Long term Capital Gain means capital gain arising from the transfer of a long term capital asset.
2. Short term Capital Gain means capital gain arising from the transfer of a short term capital asset.

PAN compulsory for Securities transaction

The Income-tax (Eighth Amendment) Rules, 2002 made it mandatory for a person to quote permanent account numbers (PAN), issued by the income tax department, for securities transactions of over Rs. 1 lakh.

Tax on long-term capital gains (Section 112)

Where the total income of an assessee includes any income, arising from the transfer of a long-term capital asset, which is chargeable under the head 'Capital gains', the tax payable by the assessee on the total income should be the aggregate of:

(i) in the case of an individual or a Hindu Undivided Family, being a resident:

  (a) the amount of income-tax payable on the total income as reduced by the amount of such long-term capital gains, had the total income as so reduced been his total income; and

  (b) the amount of income-tax calculated on such long-term capital gains at the rate of twenty per cent:

(ii) in the case of a domestic company:

  (a) the amount of income-tax payable on the total income as reduced by the amount of such long-term capital gains, had the total income as so reduced been its total income; and

(b) the amount of income-tax calculated on such long-term capital gains at the rate of twenty per cent

(iii) in the case of a non-resident (not being a company) or a foreign company:

(a) the amount of income-tax payable on the total income as reduced by the amount of such long-term capital gains , had the total income as so reduced been its total income; and

(b) the amount of income-tax calculated on such long-term capital gains at the rate of twenty percent

(iv) in any other case of a resident:

(a) the amount of income-tax payable on the total income as reduced by the amount of long-term capital gains, had the total income as so reduced been its total income; and

(b) the amount of income-tax calculated on such long-term capital gains at the rate of twenty per cent

5.9 Anti-Money Laundering

The Prevention of Money Laundering Act, 2002 was passed by Indian Parliament in the year 2002. It became effective from 1st July, 2005. The purpose was to establish the general framework for the fight against money laundering, terrorism, financial crimes and corruption.

SEBI has issued master circular ISD/AML/Cir-1/2008 on December 19, 2008 consolidating all the requirements/ obligations.

As per the provisions of the Act, every banking company, financial institution (which includes chit fund company, a co-operative bank, a housing finance institution and a non-banking financial company) and intermediary (which includes a stock-broker, sub-broker, share transfer agent, banker to an issue, trustee to a trust deed, registrar to an issue, merchant banker, underwriter, portfolio manager, investment adviser and any other intermediary associated with securities market and registered under section 12 of the Securities and Exchange Board of India Act, 1992) shall have to maintain a record of all the transactions; the nature and value of which has been prescribed in the Rules under the Prevention of Money Laundering Act (PMLA). Such transactions include:

- All cash transactions of the value of more than Rupees 10 lakh or its equivalent in foreign currency.
- All series of cash transactions integrally connected to each other which have been valued below Rupees 10 lakh or its equivalent in foreign currency where such series of transactions take place within one calendar month.
- All suspicious transactions whether or not made in cash and including, inter-alia, credits or debits into from any non-monetary account such as demat account, security account maintained by the registered intermediary.

For the purpose of suspicious transactions reporting, apart from 'transactions integrally connected', 'transactions remotely connected or related' should also be considered.

The senior management of a registered intermediary should be fully committed to establishing appropriate policies and procedures for the prevention of money laundering and terrorist financing and ensuring their effectiveness and compliance with all relevant legal and regulatory requirements. The Registered Intermediaries should:

(a) issue a statement of policies and procedures, on a group basis where applicable, for dealing with money laundering and terrorist financing reflecting the current statutory and regulatory requirements;

(b) ensure that the content of these Guidelines are understood by all staff members;

(c) regularly review the policies and procedures on prevention of money laundering and terrorist financing to ensure their effectiveness. Further in order to ensure effectiveness of policies and procedures, the person doing such a review should be different from the one who has framed such policies and procedures;

(d) adopt customer acceptance policies and procedures which are sensitive to the risk of money laundering and terrorist financing;

(e) undertake customer due diligence ("CDD") measures to an extent that is sensitive to the risk of money laundering and terrorist financing depending on the type of customer, business relationship or transaction; and

(f) develop staff members' awareness and vigilance to guard against money laundering and terrorist financing.

The customer due diligence ("CDD") measures comprise the following:

(a) Obtaining sufficient information in order to identify persons who beneficially own or control securities account. Whenever it is apparent that the securities acquired or maintained through an account are beneficially owned by a party other than the client, that party should be identified using client identification and verification procedures. The beneficial owner is the natural person or persons who ultimately own, control or influence a client and/or persons on whose behalf a transaction is being conducted. It also incorporates those persons who exercise ultimate effective control over a legal person or arrangement.

(b) Verify the customer's identity using reliable, independent source documents, data or information;

(c) Identify beneficial ownership and control, i.e. determine which individual(s) ultimately own(s) or control(s) the customer and/or the person on whose behalf a transaction is being conducted;

(d) Verify the identity of the beneficial owner of the customer and/or the person on whose behalf a transaction is being conducted, corroborating the information provided in relation to (c); and

(e) Conduct ongoing due diligence and scrutiny, i.e. perform ongoing scrutiny of the transactions and account throughout the course of the business relationship to ensure that the transactions being conducted are consistent with the registered intermediary's knowledge of the customer, its business and risk profile, taking into account, where necessary, the customer's source of funds.

It is generally recognized that certain customers may be of a higher or lower risk category depending on circumstances such as the customer's background, type of business relationship or transaction etc. As such, the registered intermediaries should apply each of the customer due diligence measures on a risk sensitive basis.

The following have been identified as Clients of Special Category (CSC):

a. Non resident clients
b. High net worth clients,
c. Trust, Charities, NGOs and organizations receiving donations
d. Companies having close family shareholdings or beneficial ownership
e. Politically exposed persons (PEP) of foreign origin
f. Current / Former Head of State, Current or Former Senior High profile politicians and connected persons (immediate family, Close advisors and companies in which such individuals have interest or significant influence)
g. Companies offering foreign exchange offerings
h. Clients in high risk countries (where existence / effectiveness of money laundering controls is suspect, where there is unusual banking secrecy, Countries active in narcotics production, Countries where corruption (as per Transparency International Corruption Perception Index) is highly prevalent, Countries against which government sanctions are applied, Countries reputed to be any of the following – Havens / sponsors of international terrorism, offshore financial centers, tax havens, countries where fraud is highly prevalent.
i. Non face to face clients
j. Clients with dubious reputation as per public information available etc.

The above mentioned list is only illustrative and the intermediary should exercise independent judgment to ascertain whether new clients should be classified as CSC or not.

Any suspicious transaction should be immediately notified to the Money Laundering Control Officer or any other designated officer within the intermediary. The notification may be done in the form of a detailed report with specific reference to the clients, transactions and the nature /reason of suspicion. However, it should be ensured that there is continuity in dealing with the client as normal until told otherwise and the client should not be told of the report/ suspicion. In exceptional circumstances, consent may not be given to continue to operate the account, and transactions may be suspended, in one or more jurisdictions concerned in the transaction, or other action taken.

PART 2: DERIVATIVES

Chapter 6: Introduction To Derivatives

6.1 What is a Derivative?

Suppose an investor owns a contract that entitles him to 5 grams of gold. The value of that contract would vary with the price of gold. Contracts of this nature are called *derivatives*. Gold, in this example, is referred to as *the underlying.* The derivative contract derives its value from the value of the underlying.

The underlying in a derivative contract could be a financial asset such as currency, stock and market index, an interest bearing security or a physical commodity. Today, around the world, derivative contracts are traded on electricity, weather, temperature and even volatility.

According to the Securities Contract Regulation Act, (1956) the term "derivative" includes:

- 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.

6.2 Kinds of Derivative Contracts

Derivatives comprise four basic contracts namely *Forwards, Futures, Options* and *Swaps.* Over the past couple of decades several exotic contracts have emerged. But these are largely variants of these basic contracts.

6.2.1 Forwards

Suppose Party A agrees to buy USD1,000 from Party B, 1 month down the line, at Rs. 47 = 1USD (US Dollar). This is a *forward contract*.

Forwards are promises to deliver an asset on a pre- determined date in future at a predetermined price. They are traded over the counter – OTC (i.e. outside the stock exchanges, directly between the two parties).

- Benefit is that they are customized according to the needs of the parties.
- Since these contracts do not fall under the purview of rules and regulations of an exchange, they generally suffer from counterparty risk i.e. the risk that one of the parties to the contract may not fulfill his or her obligation.

Forwards are highly popular on currencies and interest rates.

6.2.2 Futures

A futures contract (like a forward contract) is an agreement between two parties to buy or sell an asset at a certain time in future at a certain price. It is different from a forward contract, in that it is traded on an exchange. Thus, a future is a forward that is traded in an exchange. As a corollary:

- Futures are standardized contracts (not customized, as was seen for forwards)
- The exchange stands guarantee to all transactions. Thus, counter-party risk is largely eliminated.

Buyers of futures contracts are considered to have a long position, whereas, sellers are considered to have a short position.

Futures contracts are available on variety of commodities, currencies, interest rates, stocks and other tradable assets. They are highly popular on stock indices, interest rates and foreign exchange.

6.2.3 Options

Let us re-visit the earlier example of Party A and Party B doing a 1-month forward contract for USD1,000 at Rs. 47 = 1USD.

Variation 1

Suppose Part A, instead of being **obliged** to buy the dollars (which was the case in the forward contract), had the **right** to buy the dollars – but he was **not obliged** to buy them. Thus, 1 month down the line, Party A can choose, NOT to buy them. Such contracts are *option contracts.*

In this case, Party A, the buyer of USD, has the option (but Party B was committed. If Party A decided to buy the dollars, Party B was obliged to sell them at Rs. 47 = 1USD). Such contracts, where the buyer has the option, are called *call options*. In option terminology,

- Party A has *bought* the call option (to buy USD)
- Party B has *sold* (or *written*) the call option.

Variation 2

Suppose Part B, instead of being **obliged** to sell the dollars (which was the case in the forward contract), had the **right** to sell the dollars – but he was **not obliged** to sell them. Thus, 1 month down the line, Party B can choose, NOT to sell them Such contracts are also *option contracts.*

In this case, Party B, the seller of USD, has the option (but Party A was committed. If Party B decided to sell the dollars, Party A was obliged to buy them at Rs. 47 = 1USD). Such contracts, where the seller has the option, are called *put options*. In option terminology,

- Party B has *bought* the put option (to sell USD)
- Party A has *sold* (or *written*) the put option.

The party that buys an option is said to have a long position; the party that sells is said to have a short position.

It should be noted that:

- In the first two types of derivative contracts (forwards and futures), both the parties (buyer and seller) have an obligation i.e. the buyer needs to pay for the asset to the seller;

and the seller needs to deliver the asset to the buyer on the agreed date *(settlement date)*.

- In case of options, only the seller of the option (the option writer) is under an obligation and not the buyer of the option (the option purchaser).
    - o In a call option, the buyer of the option has the right to BUY the underlying
    - o In a put option, the buyer of the option has the right to SELL the underlying.

The option buyer may or may not *exercise* his right. In case the buyer of the option does exercise his right, the seller of the option must fulfill whatever is his obligation (for a call option, the option-seller has to deliver the asset to the buyer of the option; for a put option the option-seller has to receive the asset from the buyer of the option).

In the above cases, the option was to be exercised 1 month down the line i.e. on a specific date (settlement date, at the end of the contract period). Such options are known as *European option contracts*.

If in the above cases, suppose the option buyer {Party A (in the case of Variation 1) or Party B (in the case of Variation 2)} could exercise their option **anytime up to the expiry of the contract period.** This would be an *American option contract*.

Options are generally traded in an exchange.

6.2.4 Swaps

Swaps are private agreements between two parties to exchange cash flows in the future according to a prearranged formula. 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.

Suppose the buyer of a property (Party C) took a loan on floating rate basis (say, T-Bill Rate + 2%). This means that he expects interest rates in the market to go down (so that he too will have to pay less to service the loan).

If this interest view changes later – if he now expects interest rates in the market to go up, he is exposed to the commitment of having to pay more to service the loan. How can he protect himself from the increase in commitment?

He can find some other party (Party D), who is prepared to pay him, say T-Bill Rate + 2%, in return for a fixed payment of, say, 8%. The two parties can then enter into an interest rate swap (for an agreed principal amount (say, Rs. 10 crores), which does not change hands between the parties). Under this agreement, every year (or other frequency as may be mutually agreed):

o Party C will pay 8% of Rs. 10 crores to Party D

o Party D will pay T-Bill Rate + 2% on Rs. 10 crores to Party C.

Thus, Party C, who had an obligation to pay on floating basis to his financier, will receive floating (T-Bill + 2%) from Party D, and pay fixed (8%) to Party D. Effectively, he has converted his floating rate borrowing into a fixed rate borrowing. Thus, he is protected from future increases in interest rates; but he also loses on potential gains, if interest rates were to go down.

- *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.

6.3 OTC Derivatives & Exchange Traded Derivatives

Derivatives that trade on an exchange are called *exchange traded derivatives*, whereas privately negotiated derivative contracts are called *Over-the Counter (OTC) derivatives*. The OTC derivatives markets have the following features, unlike exchange-traded derivatives:

- The management of counter-party (credit) risk is decentralized and lies with the parties to the derivative contract.
- There are no formal centralized limits on individual positions, leverage, or margining.
- There are no formal rules for risk and burden-sharing.
- There are no formal rules or mechanisms for ensuring market stability and integrity, and for safeguarding the collective interests of market participants.
- 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.

The OTC derivatives have grown faster than the exchange-traded contracts in the recent years. Table 6.1 gives a bird's eye view of these contracts as available worldwide on several exchanges.

Table 6.1: Spectrum of Derivative Contracts Worldwide

Underlying Asset	Type of Derivative Contract				
	Exchange-traded futures	**Exchange-traded options**	**OTC swap**	**OTC forward**	**OTC option**
Equity	Index future / Stock future	Index option/ Stock option	Equity swap	Back to back repo agreement	Stock options / Warrants
Interest rate	Interest rate futures linked to MIBOR	Options on futures	Interest rate swaps	Forward rate agreement	Interest rate caps, floors & collars, Swaptions (option on a swap)

Underlying Asset	Type of Derivative Contract				
	Exchange-traded futures	Exchange-traded options	OTC swap	OTC forward	OTC option
Credit	Bond future	Option on Bond future	Credit default swap/ Total return swap	Repurchase agreement	Credit default option
Foreign exchange	Currency future	Option on currency future	Currency swap	Currency forward	Currency option

The above list is not exhaustive. Several new and innovative contracts have been launched over the past decade around the world, including option contracts on volatility indices.

6.4 Participants

The derivatives market is similar to any other financial market and has the 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, liabilities and portfolios.

- **Speculators**

  These are individuals who take a view on the future direction of the markets. They speculate on whether prices would rise or fall in future; accordingly, they 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.

6.5 Continuous Compounding

It is important to understand the principle of continuous compounding to get a feel on how derivatives are priced.

Suppose you place money in a bank fixed deposit at 10% p.a., compounded annually. This means that a principal of Rs. 1,000 will grow to Rs. 1,000 + 10% i.e. Rs. 1,100 in 1 year. It can be written as A = P X (1+r/t)nt

where, A is the amount to which the principal, P will grow in n years at annual interest rate of r, with a compounding frequency of t, where t is the number of time periods which is equivalent to a year.

For example, t = 1 for annual compounding, t = 4 for quarterly compounding, t = 365 for daily compounding

Thus, annual compounding in the above example, gives us

$$A = \text{Rs. } 1{,}000 \text{ X } (1 + 10\%/1)^{1}$$

$$= \text{Rs. } 1{,}100$$

The application of the formula and resulting variation in the amounts can be seen from the following table:

Compounding Frequency	**Principal (Rs.)**	**Rate of Interest**	**Time periods in a year**	**No. of years**	**n X t**	**Amount (Rs.)**
	P	R	t	n		A
Annually for 1 year	1,000	10%	1	1	1	1,100.000
Semi-annually for 1 year	1,000	10%	2	1	2	1,102.500
Quarterly for 1 year	1,000	10%	4	1	4	1,103.813
Monthly for 1 year	1,000	10%	12	1	12	1,104.713
Daily for 1 year	1,000	10%	365	1	365	1,105.156
Annually for 1 year	1,000	10%	1	2	2	1,210.000
Semi-annually for 1 year	1,000	10%	2	2	4	1,215.506
Quarterly for 1 year	1,000	10%	4	2	8	1,218.403
Monthly for 1 year	1,000	10%	12	2	24	1,220.391
Daily for 1 year	1,000	10%	365	2	730	1,221.369

The interest, in the case of bank deposit, may accrue to you on a day to day basis, but not minute to minute, or second to second i.e. the your interest earning will not change between 10 am and 4 pm! This is an example of interest being *discretely compounded.*

Share prices trade in the market during fractions of a second. Therefore, your returns depend on what point in time you trade. In such situations, discrete compounding is considered erroneous. Therefore, *continuous compounding* is used. This is given by the formula $A = P \text{ X } e^{rn}$

where, 'e' is exponential function which is equal to 2.71828.

If the bank deposit were continuously compounded for 2 years, the amount would be

$$A = \text{Rs. } 1{,}000 \text{ X } e^{(10\% \text{ X } 2)}$$

$$= \text{Rs. } 1{,}221.377$$

6.6 Why Derivatives?

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. 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. The enhanced trading volumes contribute to *liquidity in the underlying market.*
- 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 can become extremely difficult in these kinds 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 benefits 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.

Chapter 7: Equity Derivatives

7.1 Contract Structure

7.1.1 Nature of contract

Different kinds of derivative contracts are available in the markets. In equities, futures and options are the popularly used contracts.

Within options, puts and calls are different contracts.

7.1.2 Underlying

Derivatives can be constructed on any underlying asset. Within the Indian equity domain, two kinds of underlying are available:

- Stock Index e.g. S&P CNX Nifty – Related derivative products are Nifty Futures, Nifty Call Options and Nifty Put Options
- Individual Stocks e.g. Infosys – Related derivative products are Infosys Futures, Infosys Call Options and Infosys Put Options.

Futures and option contracts are available for every company whose stock has been admitted by the exchange for derivative trading.

7.1.3 Contract Period

Each of the products mentioned above is available for different contract periods. Typically, contracts on the NSE have one-month, two-month and three-month expiry cycles. The last Thursday of each month has been set as the date of expiry of contracts.

Thus, on September 22, 2010 there will be contracts that expire in September, October and November. The respective expiry dates would be September 30, 2010, October 28, 2010 and November 25, 2010 (last Thursdays of each month).

On September 30, 2010, when the September series of contracts expire, a new series of contracts is opened for December, which would expire on December 30, 2010.

Thus, for each of the contracts mentioned under the para 'underlying', there would be contracts that mature in 1 month, 2 months and 3 months.

The above should give an idea of the range of derivative possibilities. Let us now take a closer look at futures and options.

7.2 Futures

7.2.1 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**

  The period over which a contract trades (one-month, two-month and three-month expiry cycles, as discussed earlier)

- **Expiry date**

  The date on which the final settlement of the contract takes place.

- **Contract size / Contract Multiplier / Lot size**

  The amount of asset that has to be delivered under one contract. This is also called as the *lot size (eg. assume 1 Nifty Futures contract = 50, i.e. lot size = 50)* .

- **Basis**

  Basis is 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 interest that is paid to finance the asset less the income earned on the asset.

- **Initial margin**

  The amount that must be deposited in the margin account at the time a futures contract is first entered into.

- **Marking-to-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.

- **Maintenance margin**

  Investors are required to place margins with their trading members before they are allowed to trade. Based on marking-to-market, the investor would have notional profits or notional losses. Accordingly, the value of his margin available to support the investment position will go up or down.

If the balance in the margin account falls below the maintenance margin, the investor receives a *margin call* and is expected to top up the margin account to the initial margin level before trading commences on the next day. If the investor does not do so, the trading member is entitled to close out some of the investor's positions, so that the investor's position is in line with the margin available.

7.2.2 Pay-off Matrix

This is nothing but the profits and losses for an investor at various price points.

Futures contracts have linear or symmetrical payoffs i.e. the losses as well as profits for the buyer and the seller of a futures contract follow a straight line and are unlimited.

- **Buyer of Futures** (Long Futures)

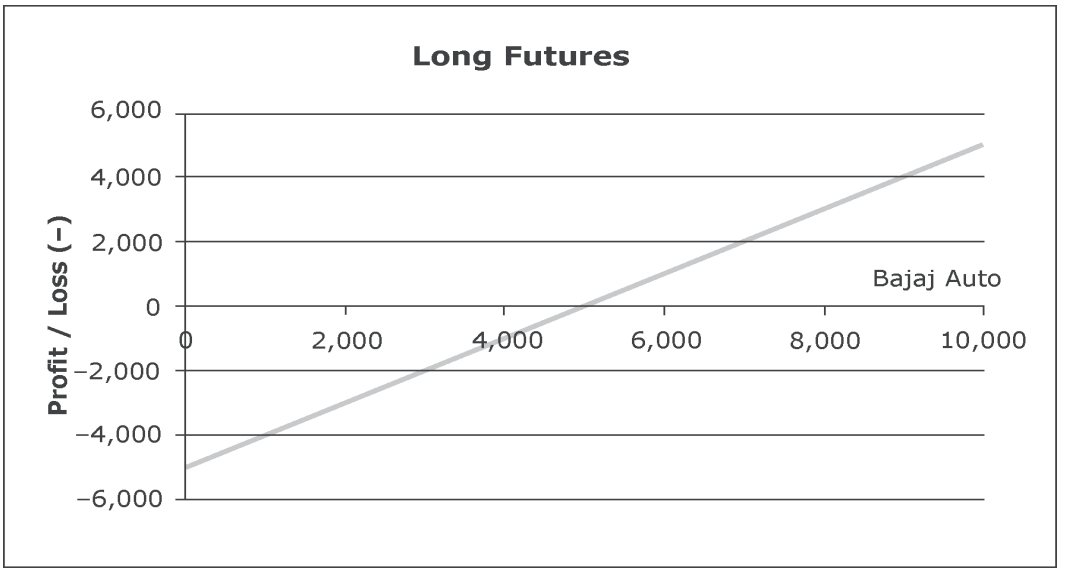
Suppose an investor bought Bajaj Auto Futures when Bajaj Auto shares in the spot market were trading at Rs. 5000.

o If later, Bajaj Auto shares were to go up, the investor will gain

o On the other hand, if Bajaj Auto shares were to fall, the investor will lose.

The pay-off matrix is shown in Figure [7.1].

Figure [7.1] Pay-off Matrix for Long Futures



When Bajaj Auto futures are at Rs. 5,000, the investor makes neither profits, nor losses.

If Bajaj Auto futures touch Rs. 7,000, the investor has a gain of Rs. 1,000.

If Bajaj Auto futures were to touch Rs. 4,000, the investor would have a loss of Rs. 1,000.

[In reality, the breakeven point for the investor would be more than Rs. 5,000, because of transaction costs. However, for simplicity, transaction cost is kept out of the discussion)

- **Seller of Futures** (Short Futures)

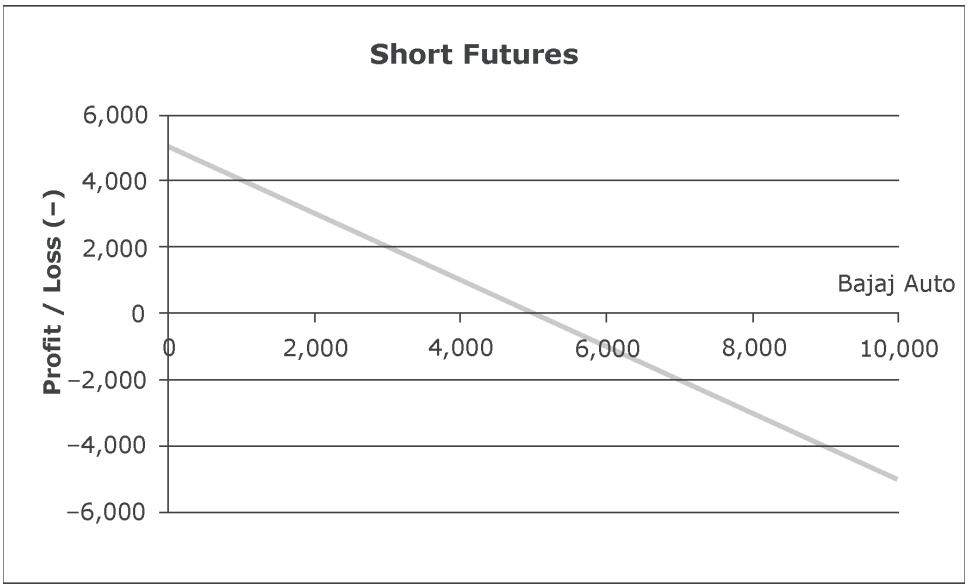
  Suppose an investor sold Bajaj Auto Futures when Bajaj Auto shares in the spot market were trading at Rs5000.

  o If later, Bajaj Auto shares were to go up, the investor will lose

  o On the other hand, if Bajaj Auto shares were to fall, the investor will gain.

  The pay-off matrix is shown in Figure [7.2].

Figure [7.2] Pay-off Matrix for Short Futures



When Bajaj Auto futures are at Rs. 5,000, the investor makes neither profits, nor losses.

If Bajaj Auto futures touch Rs. 7,000, the investor has a loss of Rs. 1,000.

If Bajaj Auto futures were to touch Rs. 4,000, the investor would have a gain of Rs. 1,000.

7.2.3 Pricing of Futures

Futures are priced on the basis of *cost of carry.*

By going in for futures, an investor is able to take the same exposure as in a spot transaction, but without having to pay the spot price. Thus, what he saves is the financing cost i.e. cost of carry.

- Higher the interest rate, higher the cost of carry
- Longer the contract period, higher the cost of carry

In a parity situation, the difference between the spot price and futures price would be equal to the cost of carry.

In the previous chapter, we discussed that in a continuous compounding model, $A = P \times e^{rn}$

Here, the parallel of P, the principal, is the Spot Price. Let us call it S.

Similarly, the parallel of A, the amount, is the Futures Price. Let us call it F.

Therefore, the pricing model for futures can be defined as

$$F = S \times e^{rn}$$

Suppose Bajaj Auto is trading in the spot market at Rs. 5,000 and financing is available at 10%.

A 1-month future on Bajaj Auto would be priced at

$$F = \text{Rs. } 5{,}000 \times e^{(10\% \times 30/365)}$$

$$= \text{Rs. } 5{,}041.27$$

A 2-month future on Bajaj Auto would be priced at

$$F = \text{Rs. } 5{,}000 \times e^{(10\% \times 60/365)}$$

$$= \text{Rs. } 5{,}082.87$$

In practice, contracts have their lot sizes. Suppose the lot size for Bajaj Auto futures is 50 shares. This means that each Futures contract in Bajaj Auto would have an underlying of 50 shares.

In the above example, each futures contract in the market would therefore be priced at 50 X Rs. 5,082.87 i.e. Rs. 254,144.

The above calculations hold good, if Bajaj Auto does not declare a dividend during the contract period.

If an investor holds an equity shares on a day when the share is entitled to a dividend from the company, then the investor would receive that dividend. The effective cost of carry would therefore be the financing cost less the dividend.

Suppose, in the above example, a dividend of Rs. 25 per share is payable during the contract period, say 20 days into the contract. This can be continuously compounded for the balance 40 days (60 day contract less 20 days into the contract when dividend will be received). The resulting value, which represents the continuously compounded dividend income, can be reduced from the Futures price given above. Thus, the 2-month future on Bajaj Auto, with the expected dividend, would be priced at,

$$F = \text{Rs. } 5{,}000 \times e^{(10\% \times 60/365)} - \text{Rs. } 25 \times e^{(10\% \times 40/365)}$$

$$= \text{Rs. } 5{,}082.87 - \text{Rs. } 25.41$$

$$= \text{Rs. } 5{,}057.46$$

7.2.4 Convergence of Spot and Futures

As the contract approaches its expiry, the spot price and futures price would converge i.e. the *basis* (Futures price minus Spot price) would become zero.

This can be seen pictorially in Figure [7.3].

Figure [7.3] Basis during Contract Period

7.2.5 Applications of Futures

- **Risk Management: Long Security, Sell Futures**

  Suppose an investor holds the shares of a company. He sees the value of his security falling from Rs. 450 to Rs. 390.

  In the absence of stock futures, he would either suffer the discomfort of a price fall or sell the security in anticipation of a market upheaval.

  With stock futures, he can minimize his price risk. All he needs to do is enter into an offsetting stock futures position. In this case, he can sell futures on the stock.

  Assume that the spot price of the security which he holds is Rs. 390. Two-month futures cost him Rs. 402. For this he pays an initial margin.

  Now if the price of the security falls any further, he will suffer losses on the security he holds. However, the losses he suffers on the security, will be offset by the profits he makes on his short futures position.

  For instance, if the price of his security falls to Rs. 350. The fall in the price of the security will result in a fall in the price of futures. Futures will now trade at a price lower than the price at which he entered into a short futures position. Hence his short futures position will start making profits. The loss of Rs. 40 incurred on the security he holds, will be made up by the profits made on his short futures position.

- **Speculation: Bullish on Security, buy Futures**

  Take the case of a speculator who is bullish on a security. He believes that a particular security that trades at Rs. 1,000 is undervalued and expects its price to go up in the next two-three months. How can he trade based on this belief?

  In the absence of stock futures, he would have to buy the security and hold on to it. Assume that he buys 100 shares, which cost him one lakh rupees. His hunch proves correct and two months later the security closes at Rs. 1,010. He makes a profit of Rs. 1,000 on an investment of Rs. 100,000 for a period of two months. This works out to an annual return of (Rs. 1,000 ÷ Rs. 100,000) X (12 ÷ 2) i.e. 6 percent.

  Today a speculator can take exactly the same position on the security by using futures contracts. Suppose the stock trades at Rs. 1,000 and two-month futures on the stock trade at Rs. 1,006.

  Just for the sake of comparison, assume that the minimum contract value is Rs100,000. He buys stock futures for the 100 underlying shares, for which he pays a margin of Rs. 20,000.

  Two months later the security closes at Rs. 1,010. On the day of expiration, the futures price converges to the spot price and he makes a profit of Rs. 400

– but, on an investment of Rs. 20,000. This works out to an annual return of (Rs400 ÷ Rs20,000) X (12 ÷ 2) i.e. 12 percent.

The leverage that futures provide, makes it an attractive option for speculators.

- **Speculation: Bearish on Security, Sell Futures**

  Take the case of a speculator who is bearish on a security. He believes that a particular security that trades at Rs. 1,000 is overvalued and expects its price to go up in the next two-three months. How can he trade based on this belief?

  In the absence of stock futures, it is difficult to benefit from this belief.

  Today a speculator can take a short position on the security by using futures contracts. Suppose the stock trades at Rs. 1,000 and two-month futures on the stock trade at Rs. 1,005.

  Just for the sake of comparison, assume that the minimum contract value is Rs. 100,000. He sells stock futures for the 100 underlying shares, for which he pays a small margin.

  Two months later the security closes at Rs. 990. On the day of expiration, the futures price converges to the spot price and he makes a profit of Rs. 15 per share on 100 shares i.e. Rs. 1,500.

  Thus, the speculater is able to benefit from his bearish view.

- **Arbitrage: Over-priced Futures – Buy Spot, Sell Futures**

  As we discussed earlier, the cost-of-carry ensures that the futures price stay in tune with the spot price. Whenever the futures price deviates substantially from its fair value, arbitrage opportunities arise.

  If you notice that futures on a security that you have been observing seem overpriced, how can you cash in on this opportunity to earn riskless profits?

  Suppose ABC Ltd. trades at Rs. 1000. One-month ABC futures trade at Rs. 1025 and seem overpriced. As an arbitrageur, you can make riskless profit by entering into the following set of transactions.

  1. On day one, borrow funds, buy the security on the cash/spot market at Rs. 1,000.
  2. Simultaneously, sell the futures on the security at Rs. 1,025.
  3. Take delivery of the security purchased and hold the security for a month.
  4. On the futures expiration date, the spot and the futures price converge. Now unwind the position.
  5. Say the security closes at Rs. 1015. Sell the security.

6. Futures position expires with profit of Rs. 10.
7. The result is a riskless profit of Rs. 15 on the spot position and Rs. 10 on the futures position.
8. Return the borrowed funds.

If the cost of borrowing funds to buy the security is less than the arbitrage profit possible, it makes sense for you to arbitrage. In the real world, one has to build in the transactions costs into the arbitrage strategy.

- **Arbitrage: Under-priced Futures – Buy Futures, Sell Spot**

Suppose you notice that the futures on a security you hold seem underpriced. How can you cash in on this opportunity to earn riskless profits?

For instance, ABC Ltd. trades at Rs. 1,000. One-month ABC futures trade at Rs. 965 and seem underpriced.

As an arbitrageur, you can make riskless profit by entering into the following set of transactions.

1. On day one, sell the security in the cash/spot market at Rs. 1,000.
2. Make delivery of the security.
3. Simultaneously, buy the futures on the security at Rs. 965.
4. On the futures expiration date, the spot and the futures price converge. Now unwind the position.

   Say the security closes at Rs. 975. Buy back the security.
6. The futures position expires with a profit of Rs. 10.
7. The result is a riskless profit of Rs. 25 on the spot position and Rs. 10 on the futures position.

If the returns you get by investing in riskless instruments is more than the return from the arbitrage trades, it makes sense for you to arbitrage. This is termed as *reverse-cash-and-carry arbitrage*. It is this arbitrage activity that ensures that the spot and futures prices stay in line with the cost-of-carry.

As we can see, exploiting arbitrage involves trading on the spot market. As more and more players in the market develop the knowledge and skills to do cash-and-carry and reverse cash-and-carry, we will see increased volumes and lower spreads in both the cash as well as the derivatives market.

- **Risk Management: Selling Index Futures**

On March 12, 2010, an investor buys 3,100 shares of Hindustan Lever Limited (HLL) @ Rs. 290 per share (approximate portfolio value of Rs. 9,00,000). However, the

investor fears that the market will fall and thus needs to hedge. He uses Nifty March Futures to hedge.

- HLL trades as Rs. 290
- Nifty index is at 4,100
- March Nifty futures are trading at Rs. 4,110
- The beta of HLL is 1.13.

To hedge, the investor needs to sell [Rs. 9,00,000 * 1.13] i.e. Rs. 10,17,000 worth of Nifty futures (10,17,000/4110 = 250 Nifty Futures approx. or 3 Nifty contracts assuming lot size is 50)

On March 19, 2010, suppose the market falls.

- March Nifty futures is trading at Rs. 3,915
- HLL trades at Rs. 275 (prices do not move exactly as per their Beta. Beta is only a pointer to the direction and magnitude of likely movement)

Thus, the investor's loss in HLL would Rs. 46,500 (Rs. 15 X 3100). The investor's portfolio value now drops to Rs. 8,53,500 from Rs. 9,00,000.

However, the investor's March Nifty futures position gains by Rs. 48,750 (Rs. 195 X 250). This increases the portfolio value to Rs. 9,02,250 (Rs. 8,53,500 + Rs. 48,750).

Thus, the investor does not face any loss in the portfolio. Without an exposure to Nifty Futures, he would have faced a loss of Rs. 46,500. Hedging:

- Prevents losses despite fall in the value of the underlying shares
- Helps investors to continue to hold the shares, while taking care of intermittent losses
- Can be done by anyone with an exposure to an underlying asset class.

Warning

Hedging involves costs and the outcome may not always be favourable. If prices move in the reverse direction, then instead of compensating for losses, the hedge may magnify the loss. Therefore the strength of the beta relationship has to be studied deeply, and the hedge needs to be constructed intelligently.

Thus, futures can be used for various risk management, arbitrage and speculative purposes.

7.3 Options

7.3.1 Terminology

- **Index option**

  An option with an index as the underlying. They can be European or American. They

are always cash settled i.e. at the end of the contract period, profits / losses are determined and settled in cash.

- **Stock option**

  An option with an individual stock as the underlying. They give the holder the right to buy or sell shares at the specified price. Currently, in India, stock options too are cash settled.

- **Call option**

  It gives the holder the right but not the obligation to buy an asset, on or by a certain date, for a certain price.

- **Put option**

  It gives the holder the right but not the obligation to sell an asset, on or by a certain date, for a certain price.

- **Option price/premium**

  The price which the option buyer pays to the option seller.

- **Buyer of an option**

  The buyer of an option is the one, who, by paying the option premium, buys the right but not the obligation to exercise his option on the seller/writer.

- **Writer of an option**

  The writer of a call/put option is the one, who, receives the option premium and is thereby obliged to sell/buy the asset if the option buyer exercises his right.

- **Expiration date**

  The date specified in the options contract is known as the expiration date, the exercise date, the strike price date or the maturity.

- **Strike price**

  The price specified in the options contract is known as the strike price or the exercise price.

- **American options**

  These can be exercised at any time upto the expiration date. Most exchange-traded options are American.

- **European options**

  These can be exercised only on the expiration date. European options are easier to analyze than American options. Properties of an American option are frequently deduced from those of its European counterpart.

- **In-the-money option**

  An in-the-money (ITM) option would lead to a positive cash flow to the holder if it were exercised immediately.

  - A call option on the index is said to be in-the-money when the current index stands at a level higher than the strike price [i.e. spot price (St) > strike price (k)].

    If the index is much higher than the strike price, the call is said to be deep ITM.

  - A put is said to be ITM if the index is below the strike price.

- **At-the-money option**

  An at-the-money (ATM) option would lead to zero cash flow if it were exercised immediately.

  An option on the index is at-the-money when the current index equals the strike price [i.e. spot price (St) = strike price (k)].

- **Out-of-the-money option**

  An out-of-the-money (OTM) option would lead to a negative cash flow if it were exercised immediately.

  - A call option on the index is out-of-the-money when the current index stands at a level which is less than the strike price [i.e. spot price (St) < strike price (k)].

    If the index is much lower than the strike price, the call is said to be deep OTM.

  - In the case of a put, the put is OTM if the index is above the strike price.

- **Intrinsic value of an option**

  The option premium has two components - intrinsic value and time value.

  - Intrinsic value of an option at a given time is the amount the holder of the option will get if he exercises the option at that time.
    - The intrinsic value of a call is Max[0, (St — K)]. This means that the intrinsic value of a call is the greater of 0 or (St — K).
    - The intrinsic value of a put is Max[0, K — St]. This means that the intrinsic value of a put is the greater of 0 or (K — St).
  - The time value of an option is the difference between its premium and its intrinsic value. Both calls and puts have time value.

The longer the time to expiration, the greater is an option's time value, all else equal. At expiration, an option should have no time value.

7.3.2 Futures & Options

A comparision of the two is presented in Table [7.1].

Table 7.1: Comparison between Futures and Options

Futures	Options
Exchange traded, with novation	Same as futures.
Exchange defines the product	Same as futures.
Price is zero, strike price moves	Strike price is fixed, price moves.
Price is zero	Price is always positive.
Linear payoff	Nonlinear payoff.
Both long and short at risk	Only short at risk.

More generally, options offer "non-linear payoffs" whereas futures only have "linear payoffs". By combining futures and options, a wide variety of innovative and useful payoff structures can be created.

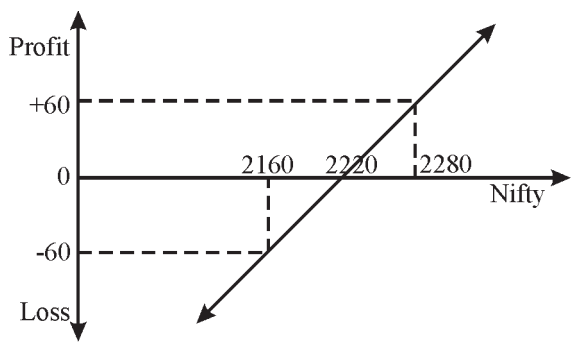
7.3.3 Pay-off Matrix

Option contracts have non-linear or asymmetrical payoffs i.e. the losses and profits for the buyer and the seller of an options contract do not follow a straight line. One party (option buyer) to the contract can have unlimited upside, while limiting its downside (to the option premium); losses of the other party (option seller) can be unlimited, for a limited upside (option premium).

- **Going Long on an Asset**

  An investor buys the underlying asset, Nifty for instance, for Rs. 2220, and sells it at a future date at an unknown price, St. Once it is purchased, the investor is said to be "long" the asset. Figure [7.4] shows the payoff for a long position on the Nifty.

Figure [7.4]: Payoff for investor who is Long Nifty at 2220

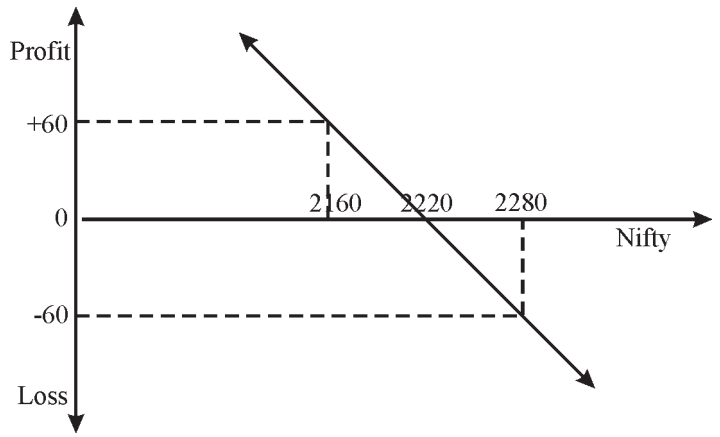


The investor bought the index at Rs. 2220. If the index goes up (to say, 2280) there is a profit of Rs. 60; if the index goes down (to say, 2160), he suffers loss of Rs. 60.

- **Going Short on an Asset**

  An investor shorts (i.e. sells an asset that he does not own) the underlying asset, Nifty for instance, for Rs. 2220, and buys it at a future date at an unknown price, St. Once it is sold, the investor is said to be "short" the asset. Figure [7.5] shows the payoff for a short position on the Nifty.

Figure [7.5]: Payoff for investor who is Short Nifty at 2220



The investor sold the index at Rs. 2220. If the index goes up (to say, 2280) there is a loss of Rs. 60; if the index goes down (to say, 2160), he earns a profit of Rs. 60.

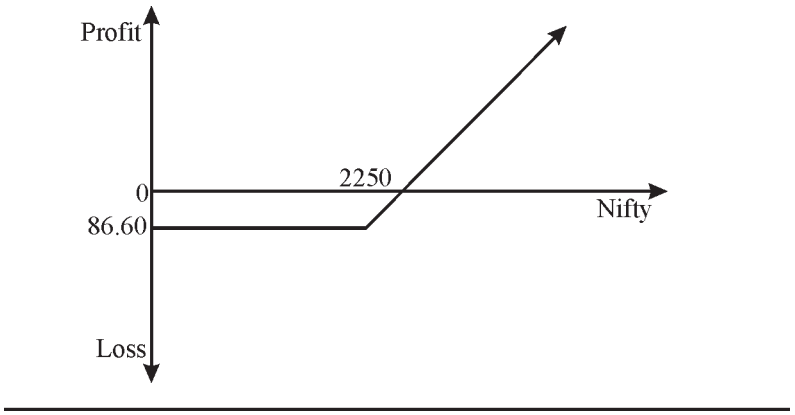
- **Going Long on a Call Option**

  A call option gives the buyer the right to buy the underlying asset at the strike price specified in the option. The profit/loss that the buyer makes on the option depends on the spot price of the underlying.

  - If upon expiration, the spot price exceeds the strike price, he makes a profit. Higher the spot price, more is the profit.
  - If the spot price of the underlying is less than the strike price, the option expires un-exercised. The loss in this case is the premium paid for buying the option.

  Figure [7.6] gives the payoff for the buyer of a three month call option (often referred to as long call) with a strike price of Rs. 2250 bought at a premium of Rs. 86.60.

Figure [7.6]: Payoff for buyer of call option



As can be seen:

- o As the spot Nifty rises, the call option is in-the-money.
- o If upon expiration, Nifty closes above the strike price of Rs. 2250, the buyer would exercise his option and profit to the extent of the difference between the Nifty-close and the strike price.

  The profits possible on this option are potentially unlimited.
- o However, if Nifty falls below the strike price of Rs. 2250, he lets the option expire.

The losses are limited to the extent of the premium paid for buying the option.

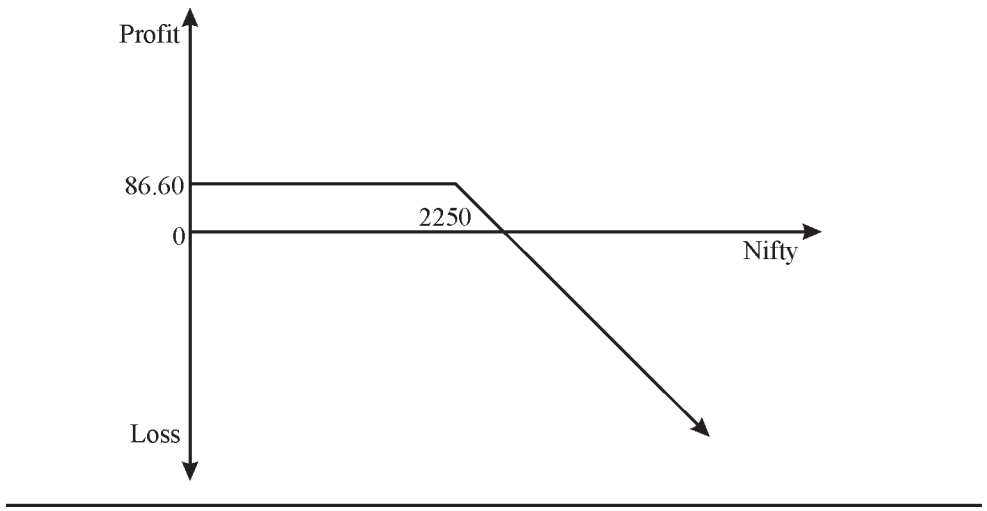
- **Going Short on a Call Option**

A call option gives the buyer the right to buy the underlying asset at the strike price specified in the option. For selling the option, the writer of the option charges a premium. The profit/loss that the buyer makes on the option depends on the spot price of the underlying. Whatever is the buyer's profit is the seller's loss.

- o If upon expiration, the spot price exceeds the strike price, the buyer will exercise the option on the writer. Hence as the spot price increases the writer of the option starts making losses. Higher the spot price, more are the losses.
- o If upon expiration, the spot price of the underlying is less than the strike price, the buyer lets his option expire un-exercised. The writer gets to keep the premium.

  Figure [7.7] gives the payoff for the writer of a three month call option (often referred to as short call) with a strike price of Rs. 2250 sold at a premium of Rs. 86.60.

Figure [7.7]: Payoff for writer of call option



It can be seen that:

- As the spot Nifty rises, the call option is in-the-money and the writer starts making losses.
- If upon expiration, Nifty closes above the strike price of Rs. 2250, the buyer would exercise his option on the writer, who would suffer a loss to the extent of the difference between the Nifty-close and the strike price.
- The loss that can be incurred by the writer of the option is potentially unlimited, whereas the maximum profit is limited to the extent of the up-front option premium of Rs. 86.60 charged by him.

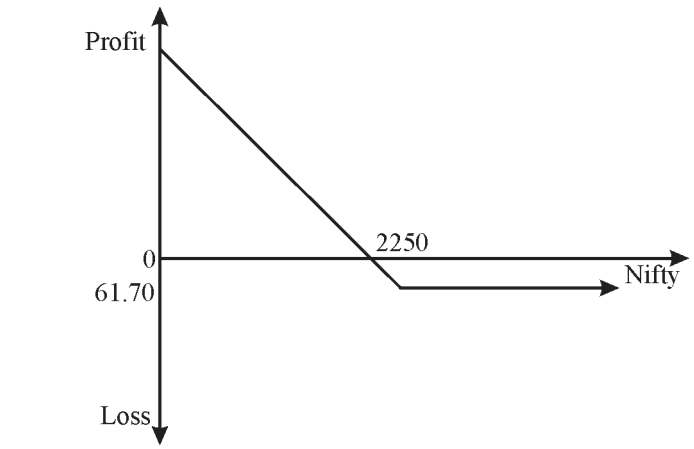
- **Going long on a Put Option**

A put option gives the buyer the right to sell the underlying asset at the strike price specified in the option. The profit/loss that the buyer makes on the option depends on the spot price of the underlying.

- If upon expiration, the spot price is below the strike price, there is a profit. Lower the spot price more is the profit.
- If the spot price of the underlying is higher than the strike price, the option expires un-exercised. His loss in this case is the premium he paid for buying the option.

Figure [7.8] gives the payoff for the buyer of a three month put option (often referred to as long put) with a strike price of Rs. 2250 bought at a premium of Rs. 61.70.

Figure [7.8]: Payoff for buyer of put option



The figure shows that:

- o As the spot Nifty falls, the put option is in-the-money.
- o If upon expiration, Nifty closes below the strike price of Rs. 2250, the buyer would exercise his option and profit to the extent of the difference between the strike price and Nifty-close.

  Lower the spot price more is the profit. The profits possible on this option can be as high as the strike price.
- o However if Nifty rises above the strike price of Rs. 2250, the option expires worthless.

The losses are limited to the extent of the premium paid for buying the option.

- **Going Short on a Put Option**

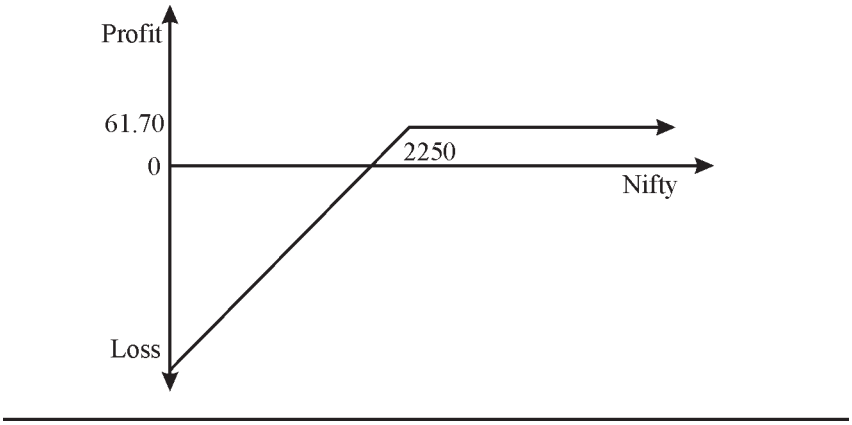
A put option gives the buyer the right to sell the underlying asset at the strike price specified in the option. For selling the option, the writer of the option charges a premium.

The profit/loss that the buyer makes on the option depends on the spot price of the underlying. Whatever is the buyer's profit is the seller's loss.

- o If upon expiration, the spot price happens to be below the strike price, the buyer will exercise the option on the writer.
- o If upon expiration the spot price of the underlying is more than the strike price, the buyer lets his option go un-exercised and the writer gets to keep the premium.

  Figure [7.9] gives the payoff for the writer of a three month put option (often referred to as short put) with a strike price of Rs. 2250 sold at a premium of Rs. 61.70.

Figure [7.9]: Payoff for writer of put option



It can be seen that:

- As the spot Nifty falls, the put option is in-the-money and the writer starts making losses.
- If upon expiration, Nifty closes below the strike price of Rs. 2250, the buyer would exercise his option on the writer, who would suffer a loss to the extent of the difference between the strike price and Nifty-close.
- The loss that can be incurred by the writer of the option is to maximum extent of the strike price (Since the worst that can happen is that the asset price can fall to zero).
- The maximum profit is limited to the extent of the up-front option premium of Rs.61.70 charged by him.

7.3.4 Pricing of Options

As with any free market, it is the supply and demand in the secondary market that drives the price of an option.

There are various models which help us get close to the true price of an option. Most popular among them are the binomial option pricing model and the much celebrated Black-Scholes model.

Today most calculators and spread-sheets come with a built-in Black-Scholes options pricing formula. Therefore, to price options, we don't really need to memorize the formula. All we need to know is the variables that go into the model.

The Variables

Option prices are affected by six factors. These are Spot Price (S), Strike price (X), Volatility (σ) of spot price, Time for expiration of contract (T), risk free rate of return (r) and Dividend on the asset (D).

- The price of a call option rises with rise in spot price, as, due to rise in prices the option becomes more likely to be exercised.

Price of a call option however falls with the rise in strike price as the payoff (S-X) falls.

The opposite is true for the price of put options.

- The rise in volatility levels of the stock price however leads to increase in price of both call and put options.
- The option price is higher for an option which has a longer period to expire. Option prices tend to fall as contracts are close to expiry. This is because, longer the term of an option, higher is the likelihood or probability that it would be exercised.

  It should be noted that the time factor is applicable only for American options and not European types.
- The rise in risk free rate tends to increase the value of call options and decrease the value of put options.
- Similarly price of a call option is negatively related with size of anticipated dividends.
- Price of put option is positively related with size of anticipated dividends.

  All option contracts have price limits. This implies that one would pay a definite maximum or a definite minimum price for acquiring an option. The limits can be defined as follows:
- The maximum price of a call option can be the price of underlying asset. In case of stocks a call option on it can never be larger than its spot price.

  This is true for both European and American call options.
- The minimum price for a European call option would always be the difference in the spot price (S) and present value of the strike price (x). Symbolically it can be written as equal to S - Xe –rt. Here X has been discounted at the risk free rate.

  This is true only for European options.
- The maximum price for a put option can never be more than the present value of the strike price X (discounted at risk free rate r).

  This is true for both types of options European and American.
- The minimum price of the European put option would always be equal to difference between present value of strike price and the spot price of the asset. This can be symbolically expressed as Xe –rt –S.

  For the sake of simplicity the above relationships have been written for options on non-dividend paying stocks. In practice, a minor adjustment is done is the formulae to calculate the price limits for options on dividend paying stocks.

The Black Scholes Merton Model of Option Pricing (BSO)

This model of option pricing was first mentioned in articles "The Pricing of Options and Corporate Liabilities" by F. Black and M. Scholes, published in the Journal of Political Economy and "Theory of Rational Option Pricing" by R. C. Merton in Bell Journal of Economics and Management Science.

It was later considered a major breakthrough in the area of option pricing and had a tremendous influence on the way traders price and hedge the options.

The model is based on the premise that stock price changes are random in nature but log normally distributed and that technical analysis does not matter.

According to the BSO model the option price and the stock price depend on the same underlying source of uncertainty and we can form a portfolio consisting of the stock and the option, which eliminates this source of uncertainty. Such a portfolio is instantaneously riskless and must instantaneously earn the risk-free rate.

The result of this analysis was the Black-Scholes differential equation which is given as (without proof).

$$\frac{\partial f}{\partial t} + rS\,\frac{\partial f}{\partial S} + \tfrac{1}{2}\,\sigma^2 S^2\,\frac{\partial f}{\partial S^2} = rf$$

Here S is stock price, t is term of the option (time to maturity), r the risk free rate, and σ the volatility of stock price.

The Black-Scholes formulas for the prices of European calls and puts with strike price X on a non-dividend paying stock are the roots of the differential equation (without proof):

$$C = SN(d_1) - Xe^{-rT}N(d_2)$$

$$P = Xe^{-rT}N(-d_2) - SN(-d_1)$$

$$\text{where } d_1 = \frac{1n\frac{S}{X} + (r + \sigma^2/2)T}{\sigma\sqrt{T}}$$

$$\text{and } d_2 = d_1 - \sigma\sqrt{T}$$

- N(x) is the cumulative distribution function for a standardized normal distribution.
- The expression N(d2) is the probability that the option will be exercised in a risk neutral world, so that N(d2) is the strike price times the probability that the strike price will be paid.
- The expression S0N(d1)ert is the expected value of a variable that equals ST if ST>X and is 0 otherwise in a risk neutral world. Here ST is the spot price at time T and X is the strike price.

- σ (sigma), a measure of volatility, is the annualized standard deviation of continuously compounded returns on the underlying. When daily sigma is given, they need to be converted into annualized sigma.
- Sigma annual = sigma daily × √Number of trading days per year. On an average there are 250 trading days in a year.
- X is the exercise price, S the spot price and T the time to expiration measured in years.
- When S becomes very large a call option is almost certain to be exercised.
- It also becomes similar to a forward contract with a delivery price K. Thus the call option price will be $c = S - Xe^{-r}T$
- As S becomes very large both N(d1) and N(d2) are both close to 1.0.
- Similarly the put option price will be 0 as N(-d1) and N (-d2) will be close to 0.
- Similarly when σ approaches zero d1 and d2 tend to infinity so that N(d1) and N(d2) tend to 1.0 and the value of call option is: $c = S - X e^{-r T}$

Thus the call price will always be the max ($S - X e^{-r T}$,0).

The Black Scholes model uses continuous compounding, which was discussed earlier. One need not remember the formulae or equation as several option price calculators are available freely (in spreadsheet formats also).

The Greeks

Each Greek letter measures a different dimension to the risk in an option position. These are used by traders who have sold options in the market. Aim of traders is to manage the Greeks in order to manage their overall portfolio.

There are five Greeks used for hedging portfolios of options with underlying assets (index or individual stocks). These are denoted by delta, theta, gamma, vega and rho each represented by Greek letters Δ, Θ, Γ, ν and ρ.

- **Delta (Δ)**

  In general, delta (Δ) of a portfolio is the change in value of the portfolio with respect to a small change in price of the underlying asset. Delta of an option, on the other hand, is the rate of change of the option price with respect to price of the underlying asset.

  It is the slope of the curve that relates the option price to the price of the underlying asset. Suppose the Δ of a call option on a stock is 0.5. This means that when the stock price changes by one, the option price changes by about 0.5, or 50% of the change in the stock price.

  Figure [7.10] shows the delta of a stock option.

Expressed differently, it is the change in the price of call option per unit change in the spot price of the underlying asset. $\Delta = \partial C/\partial S$.

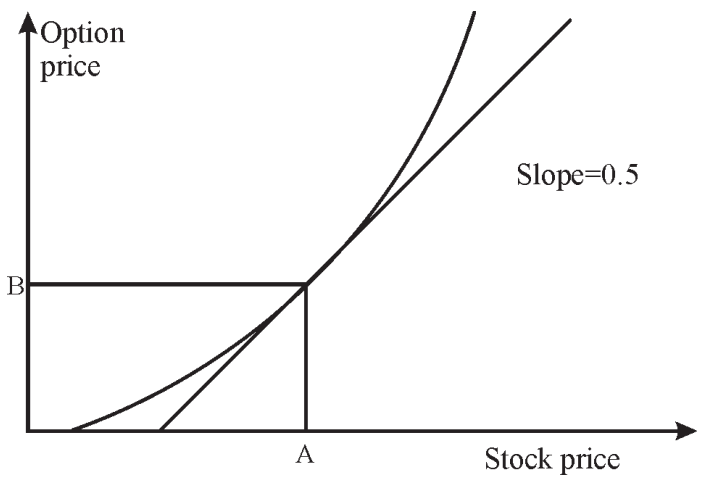
The delta of a European call on a stock paying dividends at rate q, is $N(d_1)e^{-qT}$.

The delta of a European put is $e^{-qT}[N(d_1) - 1]$.

The Δ of a call is always positive and the Δ of a put is always negative.

As the stock price (underlying asset) changes delta of the option also changes. In order to maintain delta at the same level, a given number of stocks (underlying asset) need to be bought or sold in the market. Maintaining delta at the same level is known as *delta neutrality* or *delta hedging*.

Figure [7.10] Δ as slope



- **Gamma (Γ)**

  Γ is the rate of change of the option's Delta Δ with respect to the price of the underlying asset. In other words, it is the second derivative of the option price with respect to price of the underlying asset.

- **Theta (Θ)**

  Θ of a portfolio of options, is the rate of change of the value of the portfolio with respect to the passage of time, with all else remaining the same.

  Θ is also referred to as the time decay of the portfolio.

  Θ is the change in the portfolio value when one day passes with all else remaining the same. We can either measure Θ "per calendar day" or "per trading day".

  To obtain the per calendar day, the formula for Theta must be divided by 365; to obtain Theta per trading day, it must be divided by 250.

- **Vega (ν)**

  The vega of a portfolio of derivatives is the rate of change in the value of the portfolio with respect to volatility of the underlying asset.

- If it is high in absolute terms, the portfolio's value is very sensitive to small changes in volatility.
- If it is low in absolute terms, volatility changes have relatively little impact on the value of the portfolio.

o **Rho(ρ)**

The ρ of a portfolio of options is the rate of change of the value of the portfolio with respect to the interest rate. It measures the sensitivity of the value of a portfolio to interest rates.

7.3.5 Applications of Options

All the strategies that can be implemented using stock futures can also be implemented using index options.

- **Risk Management: Long Security, Buy Puts**

  Owners of stocks or equity portfolios often experience discomfort about the overall stock market movement. As an owner of stocks or an equity portfolio, sometimes one may have a view that stock prices will fall in the near future. At other times one may witness massive volatility. The union budget is a common and reliable source of such volatility: market volatility is always enhanced for one week before and two weeks after a budget. Many investors simply do not want the fluctuations of these three weeks. One way to protect your portfolio from potential downside due to a market drop is to buy insurance using put options.

  Index and stock options are a cheap and can be easily implemented to seek insurance from the market ups and downs. The idea is simple. To protect the value of your portfolio from falling below a particular level, buy the right number of put options with the right strike price.

  o If you are only concerned about the value of a particular stock that you hold, buy put options on that stock.

    When the stock price falls your stock will lose value and the put options bought by you will gain, effectively ensuring that the total value of your stock plus put does not fall below a particular level. This level depends on the strike price of the stock options chosen by you.

  o If you are concerned about the overall portfolio, buy put options on the index.

    When the index falls, your portfolio will lose value and the put options bought by you will gain, effectively ensuring that the value of your portfolio does not fall below a particular level. This level depends on the strike price of the index options chosen by you.

Portfolio insurance using put options is of particular interest to mutual funds who already own well-diversified portfolios. By buying puts, the fund can limit its downside in case of a market fall.

- **Speculation: Bullish on Security, Buy Call or Sell Put**

There are times when investors believe that security prices are going to rise. How does one implement a trading strategy to benefit from an upward movement in the underlying security? Using options there are two ways one can do this:

1. Buy call options; or
2. Sell put options

Call Buying Strategy

We have already seen the payoff of a call option. The downside to the buyer of the call option is limited to the option premium he pays for buying the option. His upside however is potentially unlimited.

Suppose you have a hunch that the price of a particular security is going to rise in a month. Your hunch proves correct and the price does indeed rise; it is this upside that you cash in on. However, if your hunch proves to be wrong, and the security price plunges down, what you lose is only the option premium.

Having decided to buy a call, which one should you buy?

Let us take a look at call options with different strike prices. Assume that the current price level is Rs. 1,250, risk-free rate is 12% per year and volatility of the underlying security is 30%. The following options are available:

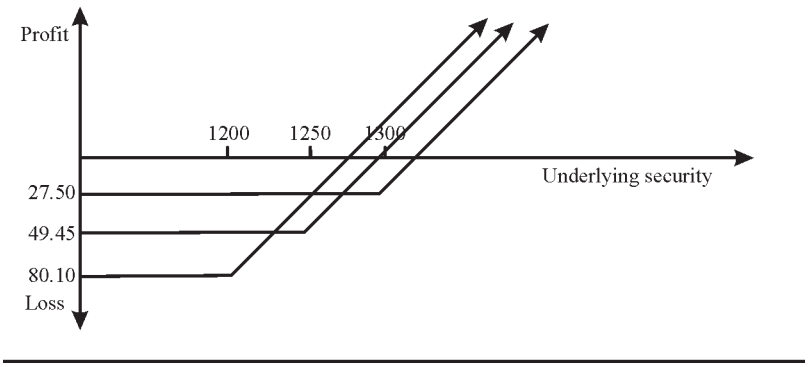
1. A one month call with a strike price of Rs. 1,200.
2. A one month call with a strike price of Rs. 1,225.
3. A one month call with a strike price of Rs. 1,250.
4. A one month call with a strike price of Rs. 1,275.
5. A one month call with a strike price of Rs. 1,300.

The premia for the options is shown in Table [7.2].

Table[7.2] Call and Put Premia – Underlying at 1,250

Underlying	Strike price of option	Call Premium (Rs.)	Put Premium (Rs.)
1250	1200	80.10	18.15
1250	1225	63.65	26.50
1250	1250	49.45	37.00
1250	1275	37.50	49.80
1250	1300	27.50	64.80

Figure [7.11]: Payoff for buyer of call options at various strike prices



The in-the-money option with a strike price of Rs. 1200 has the highest premium of Rs. 80.10 whereas the out-of-the-money option with a strike price of 1300 has the lowest premium of Rs. 27.50. Out of the five one-month calls trading in the market:

- The call with a strike price of Rs. 1200 is deep in-the-money and hence trades at a higher premium.
- The call with a strike price of Rs. 1275 is out-of-the-money and trades at a low premium.
- The call with a strike price of Rs. 1300 is deep-out-of-money. Its execution depends on the unlikely event that the price of underlying will rise by more than 50 points on the expiration date. Hence buying this call is basically like buying a lottery. There is a small probability that it may be in-the-money by expiration in which case the buyer will profit.

In the more likely event of the call expiring out-of-the-money, the buyer simply loses the small premium amount of Rs. 27.50.

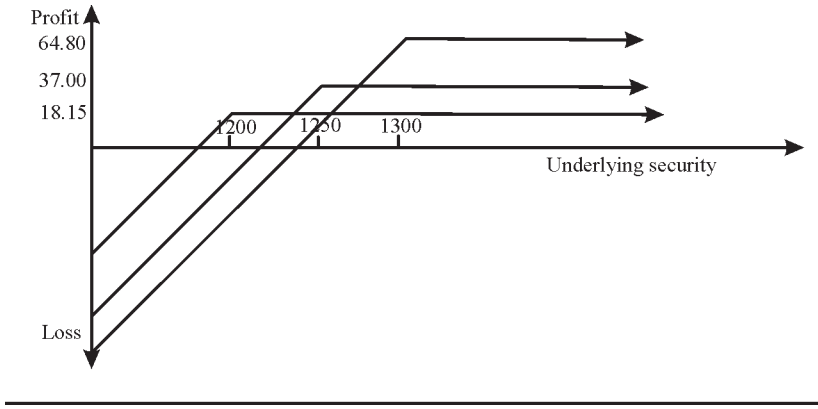
Which of these options you choose largely depends on how strongly you feel about the likelihood of the upward movement in the price, and how much you are willing to lose should this upward movement not come about.

Put Selling Strategy

As a person who wants to speculate on the hunch that prices may rise, you can also choose to sell or write puts.

As the writer of puts, you face a limited upside and an unlimited downside. If prices do rise, the buyer of the put will let the option expire and you will earn the premium. If however your hunch about an upward movement proves to be wrong and prices actually fall, then your losses directly increase with the falling price level.

Figure [7.12]: Payoff for writer of put options at various strike prices



The in-the-money option with a strike price of Rs. 1,300 fetches the highest premium of Rs. 64.80 whereas the out-of-the-money option with a strike price of Rs. 1200 has the lowest premium of Rs. 18.15. Out of the five one-month puts trading in the market:

- The put with a strike price of Rs. 1,300 is deep in-the-money and trades at a higher premium than the at-the-money put at a strike price of Rs. 1,250.
- The put with a strike price of Rs. 1,200 is deep out-of-the-money and will only be exercised in the unlikely event that underlying falls by 50 points on the expiration date.

If, for instance, the price of the underlying falls to Rs. 1,230; you have sold a put with an exercise of Rs. 1,300. The buyer of the put will exercise the option and you will end up losing Rs. 70. Taking into account the premium earned by you, when you sold the put (Rs. 64.80 as seen in Table[7.2]), the net loss on the trade is Rs. 5.20.

Which of these puts should you write? This largely depends on how strongly you feel about the likelihood of the upward movement in the prices of the underlying. If you write an at-the-money put, the option premium earned by you will be higher than if you write an out-of-the-money put. However the chances of an at-the-money put being exercised on you are higher as well.

- **Speculation: Bearish on Security, Sell Call or Buy Put**

Do you sometimes think that the market is going to drop? Could you make a profit by adopting a position on the market? Due to poor corporate results, or the instability of the government, many people feel that the stocks prices would go down. How does one implement a trading strategy to benefit from a downward movement in the market?

Today, using options, you have two choices:

1. Sell call options; or
2. Buy put options

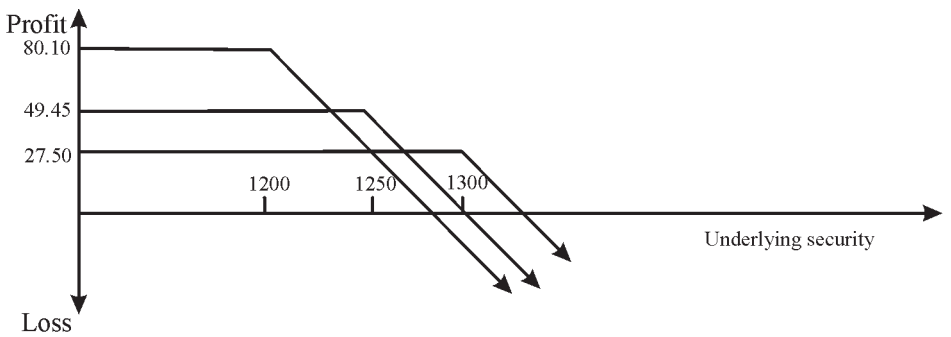
Call Selling Strategy

We have already seen the payoff of a call option. The upside to the writer of the call option is limited to the option premium he receives upfront for writing the option. His downside however is potentially unlimited.

Suppose you have a hunch that the price of a particular security is going to fall in a month. Your hunch proves correct and it does indeed fall; it is this downside that you cash in on. When the price falls, the buyer of the call lets the call expire and you get to keep the premium. However, if your hunch proves to be wrong and the market soars up instead, what you lose is directly proportional to the rise in the price of the security.

The pay-offs for the seller of call options, based on the premia show in Table [7.2], are shown in Figure [7.13].

Figure [7.13]: Payoff for seller of call option at various strike prices



Which of these calls should you write? This largely depends on how strongly you feel about the likelihood of the downward movement in the prices of the underlying. If you write an at-the-money call, the option premium earned by you will be higher than if you write an out-of-the-money call. However the chances of an at-the-money call being exercised on you are higher as well.

Put Buying Strategy

As a person who wants to speculate on the hunch that the market may fall, you can also buy puts.

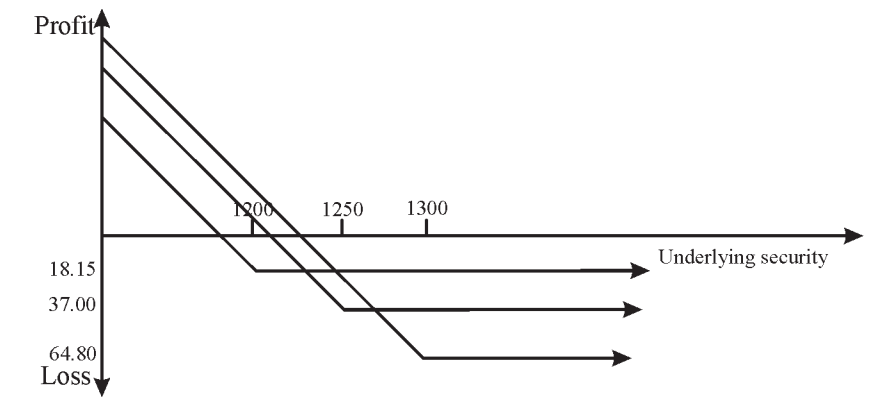
As the buyer of puts you face an unlimited upside but a limited downside. If the price does fall, you profit to the extent the price falls below the strike price of the put purchased by you. If however your hunch about a downward movement in the

market proves to be wrong and the price actually rises, all you lose is the option premium.

If, for instance, the security price rises to Rs. 1300; you've bought a put with an exercise of Rs. 1250. You simply let the put expire. If however the price does fall to say Rs. 1225 on expiration date, you make a neat profit of Rs. 25.

The pay-offs for the buyer of put options, based on the premia show in Table [7.2], are shown in Figure [7.14].

Figure [7.14]: Payoff for buyer of put option at various strike prices



The in-the-money option has the highest premium of Rs.64.80 whereas the out-of-the-money option has the lowest premium of Rs. 18.50.

Which of the 5 put options mentioned in Table [7.2] you buy, largely depends on how strongly you feel about the likelihood of the downward movement of prices and how much you are willing to lose should this downward movement not come about.

- **Bull Spread: Buy Call, Sell another Call**

  There are times when you think the market is going to rise over the next two months. However in the event that the market does not rise, you would like to limit your downside.

  One way you could do this is by entering into a spread. A spread trading strategy involves taking a position in two or more options of the same type, that is, two or more calls or two or more puts. A spread that is designed to profit if the price goes up is called a *bull spread*.

  How does one go about doing this? This is basically done utilizing two call options having the same expiration date, but different exercise prices. The buyer of a bull spread

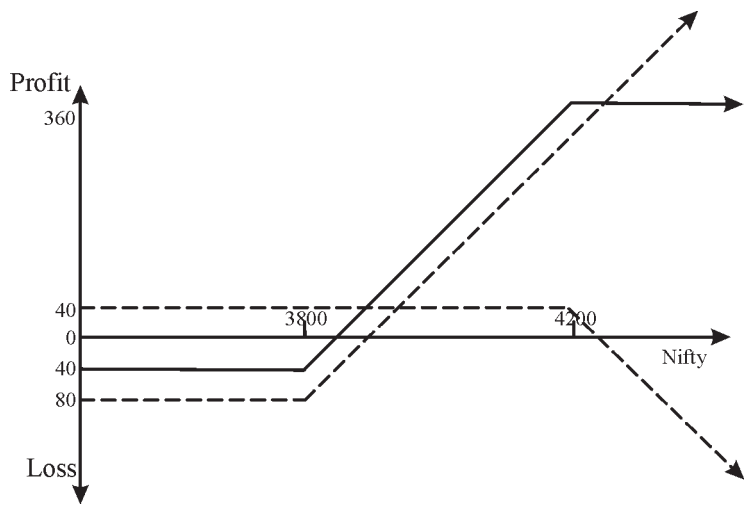
  - o Buys a call with an exercise price below the current index level and
  - o Sells a call option with an exercise price above the current index level.

The trade is a spread because it involves buying one option and selling a related option. The spread is a bull spread because the trader hopes to profit from a rise in the index.

The figure [7.15] shows the profits/losses for a bull spread as follows:

- Buys a call with an exercise price of Rs. 3,800 – paying a premium of Rs. 80 (Dotted line, going upwards).
- Sells a call option with an exercise price of Rs. 4,200 – receiving a premium of Rs. 40 (Dotted line, going downwards).

Figure [7.15]: Payoff for a bull spread created using call options



The payoff from the combination of the 2 calls is shown by the non-dotted line that starts flat, slopes upwards and then becomes flat again. As can be seen,

- The cost of setting up the spread is Rs. 40 which is the difference between the call premium paid and the call premium received. The downside on the position is limited to this amount.
- As the index moves above 3800, the position starts making profits (cutting losses) until the index reaches Rs. 4200.
- Beyond Rs. 4200, the profits made on the long call position get offset by the losses made on the short call position and hence the maximum profit on this spread is made if the index on the expiration day closes at Rs. 4200.
- Hence the payoff on this spread lies between -40 to 360.

Compared to buying the underlying asset itself, the bull spread with call options limits the trader's risk, but the bull spread also limits the profit potential.

Somebody who thinks the index is going to rise, but not above Rs. 4200 would buy this spread. Hence he does not want to stop with buying a call at Rs. 3800 and

paying a premium of Rs. 80 for an unlimited upside he believes will not happen. So he sells a call for the upside beyond Rs. 4200, for which he receives a premium of Rs. 40. The first call bought, protects him from losing unlimited money in the second call written.

In short, the bull spread limits both the upside potential as well as the downside risk. Table [7.3] gives the profit/loss incurred on a spread position as the index changes.

Table [7.3]: Expiration day cash flows for a Bull spread using two-month calls

Nifty	Buy Jan 3800 Call	Sell Jan 4200 Call	Cash Flow (Rs.)	Profit & Loss (Rs.)
3700	0	0	0	-40
3750	0	0	0	-40
3800	0	0	0	-40
3850	+50	0	50	+10
3900	+100	0	100	+60
3950	+150	0	150	+110
4000	+200	0	200	+160
4050	+250	0	250	+210
4100	+300	0	300	+260
4150	+350	0	350	+310
4200	+400	0	400	+360
4250	+450	-50	400	+360
4300	+500	-100	400	+360

Broadly, we can have three types of bull spreads:

1. Both calls initially out-of-the-money.
2. One call initially in-the-money and one call initially out-of-the-money, and
3. Both calls initially in-the-money.

The decision about which of the three spreads to undertake depends upon how much risk the investor is willing to take. The most aggressive bull spreads are of type 1. They cost very little to set up, but have a very small probability of giving a high payoff.

- **Bear Spread: Sell Call, Buy another Call**

There are times when you think the market is going to fall over the next two months. However in the event that the market does not fall, you would like to limit your downside. A spread that is designed to profit if the price goes down is called a *bear spread*.

This is basically done utilizing two call options having the same expiration date, but

different exercise prices. In a bear spread, the strike price of the option purchased is greater than the strike price of the option sold. The buyer of a bear spread

- Buys a call with an exercise price above the current index level and
- Sells a call option with an exercise price below the current index level.

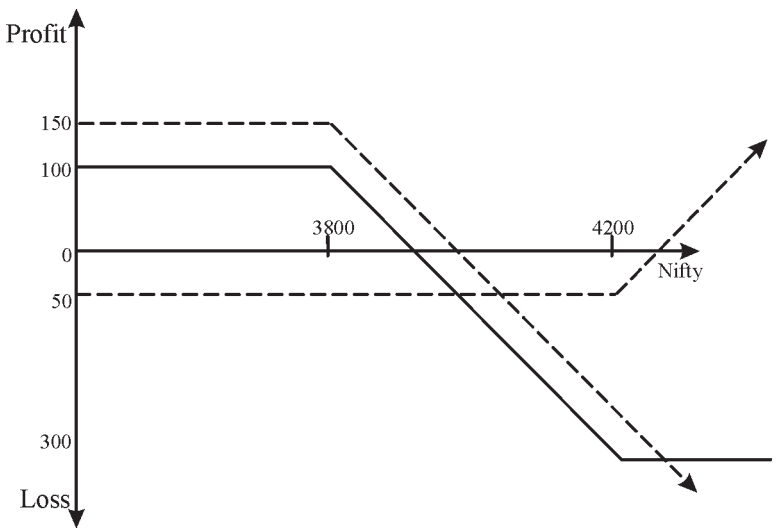
The trade is a spread because it involves buying one option and selling a related option. The spread is a bear spread because the trader hopes to profit from a fall in the index.

A bear spread created using calls involves initial cash inflow since the price of the call sold is greater than the price of the call purchased. Table [7.3] gives the profit/ loss incurred on a spread position as the index changes.

The figure [7.15] shows the profits/losses for a bear spread as follows:

- Buys a call with an exercise price of Rs. 4,200 – paying a premium of Rs. 50 (Dotted line, going upwards).
- Sells a call option with an exercise price of Rs. 3,800 – receiving a premium of Rs. 150 (Dotted line, going downwards).

Figure [7.15]: Payoff for a bear spread created using call options



The payoff from the combination of the 2 calls is shown by the non-dotted line that starts flat, slopes downwards and then becomes flat again. As can be seen,

- The net inflow of setting up the spread is Rs. 100 which is the difference between the call premium paid and the call premium received. The upside on the position is limited to this amount.
- As the index moves above 3,800, the position starts losing money (cutting profits) until the index reaches 4,200. At this point, the loss is 4,200 minus 3,800 i.e. 400. But there was a net inflow of Rs. 100 on account of premium Therefore, the net loss is Rs. 300.

- Beyond 4200, the profits made on the long call position get offset by the losses made on the short call position
- Hence the payoff on this spread lies between -300 to 100.

Compared to selling the index itself, the bear spread with call options limits the trader's risk, but it also limits the profit potential. In short, it limits both the upside potential as well as the downside risk.

Table [7.4] gives the profit/loss incurred on a spread position as the index changes.

Table [7.4]: Expiration day cash flows for a Bear spread using two-month calls

Nifty	Buy Jan 4200 Call	Sell Jan 3800 Call	Cash Flow	Profit & Loss (Rs.)
3700	0	0	0	+100
3750	0	0	0	+100
3800	0	0	0	+100
3850	0	-50	-50	+50
3900	0	-100	-100	0
3950	0	-150	-150	-50
4000	0	-200	-200	-100
4050	0	-250	-250	-150
4100	0	-300	-300	-200
4150	0	-350	-350	-250
4200	0	-400	-400	-300
4250	+50	-450	-400	-300
4300	+100	-500	-400	-300

Broadly we can have three types of bear spreads:

1. Both calls initially out-of-the-money.
2. One call initially in-the-money and one call initially out-of-the-money, and
3. Both calls initially in-the-money.

The decision about which of the three spreads to undertake depends upon how much risk the investor is willing to take. The most aggressive bear spreads are of type 1. They cost very little to set up, but have a very small probability of giving a high payoff. As we move from type 1 to type 2 and from type 2 to type 3, the spreads become more conservative and cost higher to set up. Bear spreads can also be created by buying a put with a high strike price and selling a put with a low strike price.

Chapter 8: Interest Rate Derivatives

8.1 Fixed & Floating Interest Rate

Most investors maintain some money as fixed deposits with banks. A bank giving, 7% (say) per annum interest on a deposit of 3 (say) years, is an example of a *fixed interest rate*. Whatever may be the interest rate scenario in the market, the bank would keep paying interest at 7% p.a. to the depositer.

Similarly, a debenture giving 9% (say) p.a. payable semi-annually for 5 (say) years, is an example of *fixed interest rate*.

As an alternative, the bank accepting the deposit or company issuing a debenture may offer to pay interest that is linked to some other interest benchmark in the market place, say, yield on Government of India's 5-year securities. The interest may be structured as 5-year Government of India Yield + 2%. This is an example of *floating interest rate*. The interest that would be paid over regularly to the investor has two components:

- *Base* – In this case, the 5-Year Government of India yield. At the time of each interest payment, the bank or company would find out the yield at which 5-year securities of Government of India are trading in the market. That becomes the base rate that is paid over to investors.
- *Spread* – In this case, 2%. An investor would receive this spread in addition to the base.

While the base keeps fluctuating, in line with the market, the spread is a constant. Thus, an investor effectively receives an interest rate which is in line with the market – he receives more when 5-year Government of India yields go up' he receives less when the yields go down.

8.2 Debt Securities Valuation

An investor buying a debt security is essentially buying into its future cash flows, which may be in the form of interest and principal repayment. Therefore, he would be prepared to pay a price, which is equivalent to the present value of those future cash flows.

Valuation of debt securities entails the following stages:

- Determine the future cash flows expected from that security, along with their respective dates. The nature of those cash flows viz. principal or interest does not make a difference.
- Find out the present value of each of those cash flows, through the process of discounting (discussed in the next section).
- Summation of each of those present values is the value of the debt security today.

8.3 Discounting

In a previous chapter, the concept of compounding was introduced. The related formula was:

$$A = P \times (1+r/t)^{nt}$$

where, A is the amount to which the principal, P will grow in n years at annual interest rate of r, with a compounding frequency of t, where t is the number of time periods which would constitute a year.

Compounding is the process of determining the amount (future value) from the principal (present value). Discounting is the reverse viz. determining the present value from its future value. For the purpose, the formula can be re-written as

$$P = A \div (1+r/t)^{nt}$$

The present value of an amount of Rs. 1,100 receivable 1 year down the line, assuming yield at 10% p.a. with annual compounding can be calculated as:

$$P = \text{Rs. } 1{,}100 \div (1 + 10\%/1)^{(1X1)}$$
$$= \text{Rs. } 1{,}100 \div 1.1$$
$$= \text{Rs. } 1{,}000$$

The present value of an amount of Rs. 1,210 receivable 2 years down the line, assuming yield at 10% p.a. with annual compounding can be calculated as:

$$P = \text{Rs. } 1{,}210 \div (1 + 10\%/1)^{(2X1)}$$
$$= \text{Rs. } 1{,}210 \div 1.21$$
$$= \text{Rs. } 1{,}000$$

A security that will mature in 2 years, offers interest of 10% p.a. on a face value of Rs. 1,000. Similar securities are now available in the market at 9% p.a. The security can be priced in today's market (at 9% yield) as follows:

Year	Expected Cash flow	Present Value Calculation	Present Value
1	Rs. 100 (interest)	Rs. 100 ÷ (1 + 9%/1)(1X1)	Rs. 91.74
2	Rs. 100 (interest) + Rs. 1,000 (principal)	Rs. 1,100 ÷ (1 + 9%/1)(2X1)	Rs. 925.85

The price of the security would be the total of the 2 present values viz. Rs. 91.74 + Rs. 925.85 i.e. Rs. 1,017.59

An investor who buys this security today at Rs. 1,017.59, and receives Rs. 100 at the end of 1 year, and a further Rs. 1,100 at the end of 2 years, would earn an effective yield of 9%.

8.4 Price Risk

In the above example, the face value of the security was Rs. 1,000. However, its market value has now become Rs. 1,017.59 i.e. it has appreciated in value. This appreciation is on account

of the fact that the coupon of 10% payable on the instrument is better than the prevailing yield of 9%, available in the market for such securities.

What would happen, if the prevailing yield for such securities were 11% in the market? It stands to logic that the coupon of 10% payable on the instrument is below the market benchmark. Therefore, its value in the market ought to be lesser than Rs. 1,000. If you repeat the same calculations as earlier, but at a 11% yield (instead of 9%), you will find the appropriate price to be Rs. 982.88. This means that an investor who buys this security today at Rs. 982.88, and receives Rs. 100 at the end of 1 year, and a further Rs. 1,100 at the end of 2 years, would earn an effective yield of 11%.

Thus, debt securities would appreciate in value (if interest rates in the market go down) or depreciate in value (if interest rates in the market were to go up). Such fluctuation in value of debt securities, in line with interest rates in the market, is the *price risk* inherent in such debt securities (which offer a fixed rate of interest).

The price risk is largely eliminated in debt securities that offer floating interest rate. Since the securities themselves pay more interest (on account of higher base) if the yields in the market go up, the market does not reduce its price; similarly, if yields in the market go down, the security will pay less interest (on account of lower base) and therefore its market price will not appreciate. Thus, floating interest structure protects a debt security's valuation from fluctuations in yield in the market place.

8.5 Duration & Modified Duration

In the earlier example, if the security were a 3-year security (instead of 2 years), the instrument would have appreciated (if yields in the market were to go down) or depreciated (if yields in the market were to go up) a lot more. This is because the investor would benefit (or suffer) the relative superiority (or inferiority) of the interest coupon as compared to the prevailing yields in the market, for a longer number of years.

Related to such sensitivity of security prices to changes in yield in the market place, are two concepts – *duration* and *modified duration*.

Duration is nothing but the weighted average time period over which the bond is repaid. In the earlier example, the total amount receivable on the bond is Rs. 100 (1 year) + Rs. 1,100 (2 years) i.e. Rs. 1,200. The weighted average time period of repayment can be calculated as (1 X 100/1200) + (2 X 1100/1200) i.e.1.9 years.

The duration is 1.9 years. This value, divided by (1 + yield) gives its *modified duration*. Here, we know that originally the yield was 10% (when the price of the security was Rs. 1,000). Thus, modified duration = duration ÷ (1+10%) = 1.7. This implies, that if the yields in the market were to go up (or go down) by 1%, the price of this security would appreciate (or depreciate) by 1.7%.

This can be cross-checked with the values calculated earlier. When yields in the market went down by 1%, the price of the security changed from Rs. 1,000 to Rs. 1,017.59. The change was 17.59 ÷ 1,000 i.e. 1.759%

Similarly, when yields in the market went up by 1%, the price of the security changed from Rs. 1,000 to Rs. 982.88. The change was 17.12 ÷ 1,000 i.e. 1.712%.

Thus. the sensitivity of security prices to changes in yield in the market place is measured by its modified duration.

8.6 Yield to Maturity

In the earlier examples, the price of the debt security was calculated, given its future cash flows and the prevailing yield in the market. As a corollary, if the future cash flows and the current price are known, then its yield can be determined.

Drawing on the previous example, suppose the future cash flows on a debt security are expected to be Rs. 100 on October 3, 2011 and Rs. 1,100 on October 3, 2012. The security is trading in the market, today, October 4, 2010 at Rs. 982.875. What yield would an investor earn, if he buys the instrument?

The cash flows can be put down in a sequence in a MS Excel spreadsheet as follows. From the investor's point of view, the price he would pay is negative, the cash flows he would receive in future are positive.

04-10-2010	-982.87
03-10-2011	100
03-10-2012	1100

The yield can be easily calculated by typing the following function in a cell in the spreadsheet

=xirr(select range of cells in 2nd column, select range of cells in 1st column)

On pressing return, the cell will show a value of 11.00%, which is the yield on the instrument. It is also called YTM viz. Yield to Maturity.

8.7 Interest Rate Futures - Underlying Concepts

An Interest Rate Futures contract is an agreement to buy or sell a debt instrument on a specified future date at a price that is fixed today.

Exchange traded interest rate futures are standardized contracts based on a notional coupon bearing Government of India security. The contracts are physically settled by delivering *deliverable grade securities*. A few important concepts underlying interest rate futures in India are given below:

- **Accrued interest**

  Accrued interest is the interest amount accrued from last coupon payment date up to the day prior to the *settlement date* (i.e. the date the trade will be settled with the counter party). It is calculated using 30/360 day count convention which assumes each month has a period of 30 days; the year has 360 days.

- **Conversion Factor**

  The coupon offered varies from security to security. For interest rate futures, 7% with semi-annual compounding is taken as a base. The conversion factor is the number that would equate the deliverable security (per rupee of principal), to yield 7% with semi-annual compounding.

- **Invoice Price**

  It is the price paid by the long position holder of the contract (buyer of the interest rate futures) to short position holder (seller of interest rate futures) on settlement of contract.

  Invoice price = (Futures Settlement price * Conversion factor of the delivered bond) + Accrued Interest.

- **Cheapest to Deliver (CTD) Bond**

  The bond which can be bought at cheapest price from underlying bond market and delivered against expiring futures contract is called the CTD bond. It is the bond where difference between *"Quoted price of Bond – (Futures Settlement Price * Conversion Factor)"* is the most beneficial to seller. The concept is illustrated in Table [8.1].

Table [8.1] CTD Bond

Security	Futures Settlement Price *	Quoted Price of Bond * (A)	Conversion Factor (CF)	Futures Price X CF (B)	Difference (A - B)
7.46 2017	100	102.74	1.0270	102.70	0.04
6.05 2019	100	95.64	0.9360	93.60	2.04
6.35 2020	100	96.09	0.9529	95.29	0.80
7.94 2021	100	104.63	1.0734	107.34	-2.71
8.35 2022	100	107.02	1.1113	111.13	-4.11
6.30 2023	**100**	**89.75**	**0.9395**	**93.95**	**-4.20**

* Assumed

The last mentioned bond is the CTD.

8.8 Interest Rate Futures on NSE

Interest Rate Futures contract offers market participants a standardized product which they can use conveniently for taking a view of the future direction of the market, hedging and creating income strategies.

Trading on NSE takes place via NEAT plus and NOW (NEAT on Web) systems through which large numbers of trading terminals have direct access to the market.

Electronic trading platform of NSE ensures transparency of prices, volumes and trade data. Trading standardized contracts results in a concentration of order flows, thus ensuring market liquidity. NSE presently offers futures contracts on 10 Year Notional Coupon-bearing Government of India (GOI) security (10YGS7) and 91-day Government of India (GOI) Treasury Bill.

Due to widened scope of collateral acceptance by NSE, participants can take advantage of leverage by investing in futures contract. Also participants can benefit by using a single collateral pool for both currency and interest rate futures trading.

Trades are settled through India's only 'AAA' rated clearing corporation, the National Securities Clearing Corporation Limited (NSCCL), which acts as a central counterparty to all trades and guarantees financial settlement.

The risk of counterparty default is eliminated due to novation of trades by NSCCL.

8.9 Hedging through Interest Rate Futures

Just as equity futures change in value in line with the underlying (equity share price), the interest rate futures too change in value in line with the underlying (debt security price).

Suppose a party expects interest rates to go up. If this materializes, debt securities will lose value. The party's debt investment portfolio will therefore depreciate.

When debt securities lose value, interest rate futures too will lose value. Therefore, if the party chooses to short (i.e. sell) interest rate futures, it can buy back the futures later, at a lower price and book a profit. This profit will make up for the losses on the debt investment portfolio. Thus, the party is able to hedge its debt investment position by going short on interest rate futures.

8.10 Reducing Portfolio Maturity through Interest Rate Futures

As seen earlier, longer the maturity (and modified duration), more would be the impact on security prices, arising out of a change in interest rates. An investor expecting an increase in interest rates would therefore like to reduce his portfolio maturity.

The below formula denotes the approximate number of contracts which needs to be entered into to achieve the desired duration

Approximate number of contracts

$= \{(D_T - D_t) \text{ X } P_t\} \div (D_{CTD} \text{ X } P_{CTD}) \text{ X CF of CTD Bond}$

Where,

D_T = Target duration of portfolio

D_t = Initial duration of portfolio

P_t = Initial market value of portfolio

D_{CTD} = The duration of cheapest to deliver bond

P_{CTD} = The value of cheapest to deliver Bond (Price * contract multiplier)

8.11 Speculation through Interest Rate Futures

As seen earlier, an increase in interest rates will lead to debt security prices as well as interest rate futures losing value. How would a party speculate, assuming it expects interest rates to go up.

The party can choose to short (i.e sell) interest rate futures. Subsequently, when the futures lose value, these can be bought back to earn a profit for the party.

8.12 Calendar Spread Trading through Interest Rate Futures

The magnitude of change in value of interest rate futures can be different for different time periods. A *Calendar Spread*, also known as an *inter-delivery spread*, helps in benefiting from such differences. It entails the simultaneous purchase of one delivery month and the sale of another delivery month of a given futures contract of the same underlying on the same exchange. For instance, buying a September 2010 contract and simultaneously selling a December 2010 contract. A market participant can profit (or lose out) as the price difference between the two contracts widens or narrows.

8.13 Cash & Futures Arbitrage through Interest Rate Futures

This can be achieved through the following sequence of steps:

- Purchase the cheapest to deliver bond
- Take short position in IRF contract
- Finance the bond purchase at the current borrowing rate from the market.
- Give the intention of delivery to the exchange
- Deliver the bond and receive the invoice price.
- Repay the cash amount borrowed to purchase the bond.

Thus, without taking an additional risk, the party can earn riskless profits.

Chapter 9: Currency Derivatives

9.1 Introduction to Exchange Rate

Almost all domestic transactions in India are handled in Indian National Rupees (INR). When transactions are done between someone in India (say, Infosys) and someone abroad (say, Microsoft), the role of foreign currency comes in. The more actively traded currencies in the global financial markets are USD (US Dollar), EUR (Euro), JPY (Japanese Yen) and GBP (Pound Sterling).

The value of a currency in terms of another currency is its *exchange rate*. The two currencies, whose exchange rate is being considered, are a *currency pair.* In a currency pair, the first currency is referred to as the *base currency* and the other currency is referred to as the 'counter/ terms/ quote' currency.

Table [9.1] is an extract of select exchange rates from the point of view of Indian rupees. The data is downloaded from www.x-rates.com

Table[9.1] Exchange Rates

Currency	1 INR	in INR
American Dollar	0.0221436	45.1597
British Pound	0.0139812	71.5244
Euro	0.0164514	60.785
Japanese Yen	1.86263	0.536875
Singapore Dollar	0.0292473	34.1912
Swiss Franc	0.0218344	45.7994

Downloaded from http://www.x-rates.com September 28, 2010

The first row, for instance, can be interpreted as the value of 1 INR = 0.0221436 USD / 1 USD = INR 45.1597.

Exchange rates are highly volatile. If the exchange rate moves to 1 USD = INR45.20, the USD is said to have appreciated / strengthened. Conversely, the INR has depreciated / weakened. This is because more INR has to be paid for buying 1 unit of the USD.

9.2 Exchange Rate Policy

9.2.1 Fixed Exchange Rate

Here, the value of a country's currency is pegged at a fixed ratio to some other currency or basket of currencies or any other such base. Thus, the government of the country determines the value of its currency. For example, many countries in the middle east have pegged the value of their currency to the USD.

9.2.2 Floating Exchange Rate

Here, the value of a country's currency is determined by the market forces of demand and supply. When there is more buying for a currency (say, USD), its value appreciates. When more people come to the market to sell USD, its value depreciates.

The choice of exchange rate regime is linked to the economic structure of the country, its macro-economic policy framework, as well as regulations on capital account convertibility.

India follows a system of *managed float*. The rupee's value floats based on demand and supply. However, the RBI seeks to keep the value within a corridor i.e. it manages the float to keep the value of the rupee within a range. The objective is to ensure that the physical economy of the country is not disrupted by extreme movements in exchange rate.

9.3 Foreign Currency Quotes

One ascertains the value of a country's currency with respect to other currencies through the *foreign currency quotes.* The quotes are generally in USD, the most actively traded currency globally.

A quote where USD is the base currency is referred to as a 'direct quote' (e.g. 1 USD = INR 50.0000); a quote where USD is referred to as the terms currency is an 'indirect quote' (e.g. 1 INR = 0.02 USD).

Every country's currency is quoted in terms of USD. Therefore, using the USD as an intermediate currency, it is possible to determine the value of any currency with respect to any other currency.

For example, if 1 USD= INR 50 and 1 GBP = 1.6 USD, then it can be said that 1 GBP = INR 1.6 X 50 i.e. INR 80.

A quote which is not denoted in USD is called a *cross*. For example, 1 GBP = INR 80.

9.4 Tick Size

This is minimum price differential at which traders can enter bids and offers. For example, the Currency Futures contracts traded at the NSE have a tick size of Rs. 0.0025.

So, if the prevailing futures price is Rs48.5000, the minimum permissible price movement can cause the new price to be:

either Rs. 48.5000 minus Rs. 0.0025 i.e. Rs. 48.4975;

or Rs. 48.5000 plus Rs. 0.0025 i.e. Rs. 48.5025

9.5 Spread

Spread is the difference between *bid price* (the price at which a dealer is willing to buy a foreign currency) and *ask price* (the price at which a dealer is willing to sell a foreign currency). It is also called *dealer's margin.*

The quote for bid will be lower than ask, which means the amount to be paid in counter-currency to acquire a base currency will be higher than the amount of counter currency that one can receive by selling a base currency.

For example, a bid-ask quote for USD:INR of Rs. 47.8000 – Rs. 48.1000 means that the dealer is willing to buy USD by paying Rs. 47.8000 and sell USD at a price of Rs. 48.1000. The spread is Rs. 48.1000 minus Rs. 47.8000 i.e. Rs. 0.3000.

9.6 Forward / Futures Rate

The concept of forward and futures was seen in the context of equities. The same is true of currencies too, except that the underlying here is a currency, not an equity share.

Just as equity shares yield a dividend, currencies yield interest. Different currencies offer different interest rates, based on their inherent strengths and country's economic policy choices. The forward / futures rate can be determined from the spot rate, using continuous compounding for interest, as follows:

$$F = S \times e^{(r_h - r_f)XT}$$

Where,

F = Future currency rate

S = Spot currency rate

e = 2.71828

r_h = interest rate applicable for home currency

r_f = interest rate applicable for foreign currency

T = time to maturity (in years).

For example, we saw earlier that 1USD = INR 45.1597. This is the spot rate.

Suppose 1-year interest rate is 8% for INR (r_h) and 2% for USD (r_f).

$F = 45.1597 \times 2.71828^{(0.08 - 0.02)X1}$

$= 47.9522$

Here, the foreign interest is lower than the domestic rate, i.e. rf < rh. Therefore, value of F is greater than S. The value of F shall increase further as time T increases.

If the foreign interest were higher than the domestic rate, i.e. rf > rh, then, value of F would be lower than S. The value of F will decrease further as time T increases.

9.7 Hedging through Currency Futures

9.7.1 Long Hedge

Consider an automobile manufacturer who needs to import steel. There is a commitment to pay, say, USD1mn after 1 year.

Taking the earlier example, the spot rate is USD 1 = INR 45.1597; 1 year futures is at USD 1 = INR 47.9522.

The company has 2 options –

- *No Hedge*

  If there is no hedge, the company would need to pay whatever is the spot rate, 1 year down the line.

  - If the spot rate 1 year down the line is USD 1 = INR 50, then the company will need to pay INR50mn, for buying the requisite USD.
  - If the spot rate 1 year down the line is USD 1 = INR 45, then the company will need to pay INR45mn, for buying the requisite USD.

  Thus, the company is exposed to the risk of not knowing in advance, the cost of the steel that would go into its automobiles.

- *Hedge through Currency Futures*

  Suppose the company bought currency futures at USD 1 = INR 47.9522. The futures contract would earn a profit or incur a loss depending on the spot rate when the contract matures:

  - If the spot rate 1 year down the line is USD 1 = INR 50, then the currency futures contracts would gain (INR 50 minus INR 47.9522) X 1mn i.e. INR2,047,800.

    The company would pay USD 1 mn X INR 50 i.e. INR 50,000,000 for the import, but receive INR2,047,800 as profit on the currency futures. Thus, the effective cost of the steel for the company would be INR50,000,000 minus INR2,047,800 i.e. INR47,952,200.
  - If the spot rate 1 year down the line is USD 1 = INR 45, then the currency futures contracts would lose (INR 47.9522 minus INR 45) X 1mn i.e. INR2,952,200.

The company would pay USD 1 mn X INR 45 i.e. INR 45,000,000 for the import; and a further INR2,952,200 towards loss on the currency futures. Thus, the effective cost of the steel for the company would be INR45,000,000 plus INR2,952,200 i.e. INR47,952,200.

Thus, irrespective of what is the spot rate 1 year down the line, the company knows its steel cost would be INR47,952,200.

9.7.2 Short Hedge

Now, consider the position of a software exporter from India that expects to receive USD1mn, 1 year down the line.

The company has 2 options –

- *No Hedge*

  If there is no hedge, the company would receive whatever is the spot rate, 1 year down the line.

- If the spot rate 1 year down the line is USD 1 = INR 50, then the company will receive INR50mn, for selling its USD1mn.
- If the spot rate 1 year down the line is USD 1 = INR 45, then the company will receive INR45mn, for selling its USD1mn.

Thus, the company is exposed to the risk of not knowing in advance, how many rupees it will receive for its revenue of USD1mn.

- *Hedge through Currency Futures*

  Suppose the company sold currency futures at USD 1 = INR 47.9522. The futures contract would earn a profit or incur a loss depending on the spot rate when the contract matures:

  - If the spot rate 1 year down the line is USD 1 = INR 50, then the currency futures contracts would lose (INR 50 minus INR 47.9522) X 1mn i.e. INR2,047,800.

    The company would receive USD 1 mn X INR 50 i.e. INR 50,000,000 for the export trade, but pay INR2,047,800 as loss on the currency futures. Thus, the effective cost of the steel for the company would be INR50,000,000 minus INR2,047,800 i.e. INR47,952,200.
  - If the spot rate 1 year down the line is USD 1 = INR 45, then the currency futures contracts would gain (INR 47.9522 minus INR 45) X 1mn i.e. INR2,952,200.

    The company would receive USD 1 mn X INR 45 i.e. INR 45,000,000 for the sale of USD1mn through the export trade; and a further INR2,952,200 towards gain on the currency futures. Thus, the recovery in rupees towards revenue for the company would be INR45,000,000 plus INR2,952,200 i.e. INR47,952,200.

  Thus, irrespective of what is the spot rate 1 year down the line, the company knows it will receive INR47,952,200 towards sale of USD1mn.

9.8 Speculation through Currency Futures

A speculater who believes a currency is likely to go strong, can go long on (i.e. buy) the currency through currency futures. As seen in the earlier example, if the currency does go strong, then the speculater will earn a profit on the futures transaction. If the currency does not go strong, the speculater will lose money.

Similarly, a speculater who believes a currency is likely to weaken, can go short on (i.e. sell) the currency through currency futures. If the currency does weaken, the futures contract will gain in value. If the currency, on the other hand, goes strong, the speculater will lose money on the contract.

9.9 Contract Specifications

The National Stock Exchange allows currency futures in USD, Euro, JPY and GBP. The contract specifications are listed in Table [9.2]:

Table [9.2]: Contract Specifications for Currency Futures in NSE

Symbol		USDINR	EURINR	GBPINR	JPYINR
Market Type		N	N	N	N
Instrument Type		FUTCUR	FUTCUR	FUTCUR	FUTCUR
Unit of trading		1 - 1 unit denotes 1000 USD.	1 - 1 unit denotes 1000 EURO.	1 - 1 unit denotes 1000 POUND STERLING.	1 - 1 unit denotes 100000 JAPANESE YEN.
Underlying / Order Quotation		The exchange rate in Indian Rupees for US Dollars	The exchange rate in Indian Rupees for Euro.	The exchange rate in Indian Rupees for Pound Sterling.	The exchange rate in Indian Rupees for 100 Japanese Yen.
Tick size		Rs.0.25 paise or INR 0.0025			
Trading hours		Monday to Friday **9:00 a.m. to 5:00 p.m.**			
Contract trading cycle		12 month trading cycle.			
Last trading day		Two working days prior to the last business day of the expiry month at 12 noon.			
Final settlement day		Last working day (excluding Saturdays) of the expiry month. The last working day will be the same as that for Interbank Settlements in Mumbai.			
Quantity Freeze		10,001 or greater			
Base price		Theoretical price on the 1st day of the contract.	Theoretical price on the 1st day of the contract.	Theoretical price on the 1st day of the contract.	Theoretical price on the 1st day of the contract.
		On all other days, DSP of the contract.	On all other days, DSP of the contract.	On all other days, DSP of the contract.	On all other days, DSP of the contract.
Price	**Tenure upto**	+/-3 % of base price.			

operating range	**6 months**				
	Tenure greater than 6 months	+/- 5% of base price.			
Position limits	**Clients**	higher of 6% of total open interest or USD 10 million	higher of 6% of total open interest or EURO 5 million	higher of 6% of total open interest or GBP 5 million	higher of 6% of total open interest or JPY 200 million
	Trading Members	higher of 15% of the total open interest or USD 50 million	higher of 15% of the total open interest or EURO 25 million	higher of 15% of the total open interest or GBP 25 million	higher of 15% of the total open interest or JPY 1000 million
	Banks	higher of 15% of the total open interest or USD 100 million	higher of 15% of the total open interest or EURO 50 million	higher of 15% of the total open interest or GBP 50 million	higher of 15% of the total open interest or JPY 2000 million
Initial margin		SPAN Based Margin			
Extreme loss margin		1% of MTM value of gross open position	0.3% of MTM value of gross open position	0.5% of MTM value of gross open position	0.7% of MTM value of gross open position
Calendar spreads		Rs.400 for spread of 1 month	Rs.700 for spread of 1 month	Rs.1500 for spread of 1 month	Rs.600 for spread of 1 month
		Rs.500 for spread of 2 months	Rs.1000 for spread of 2 months	Rs.1800 for spread of 2 months	Rs.1000 for spread of 2 months
		Rs.800 for spread of 3 months	Rs.1500 for spread of 3 months and more	Rs.2000 for spread of 3 months and more	Rs.1500 for spread of 3 months and more
		Rs.1000 for spread of 4 months and more			
Settlement		**Daily settlement** : T + 1 **Final settlement** : T + 2			

Mode of settlement	Cash settled in Indian Rupees			
Daily settlement price (DSP)	Calculated on the basis of the last half an hour weighted average price.			
Final settlement price (FSP)	RBI reference rate	RBI reference rate	Exchange rate published by RBI in its Press Release captioned RBI reference Rate for US$ and Euro	Exchange rate published by RBI in its Press Release captioned RBI reference Rate for US$ and Euro

9.10 Membership

As with the capital market segment, clearing and settlement of the Currency Derivatives segment of the National Stock Exchange is done through National Securities Clearing Corporation Ltd. Members are admitted in the segment in any of the following forms:

- Only Trading Member
- Trading Member cum Clearing Member
- Professional Clearing Member

9.11 Participation

Participation in currency futures segment is restricted to 'persons resident in India' (as defined in Foreign Exchange Management Act, 1999). Therefore, NRIs and FIIs cannot participate in the segment.

Chapter 10: Derivatives–Regulatory Framework

Chapter [5] has already introduced the regulatory framework for securities market, which are equally applicable to derivatives. Capital adequacy and other norms regarding membership were discussed in Chapter [4]. The following are a few other aspects of regulation that are relevant for derivatives.

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 net worth for clearing members of the derivatives clearing corporation/house shall be Rs.300 Lakh. The net worth 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 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.

Chapter 11: Derivatives – Accounting

This chapter gives a brief overview of the process of accounting of derivative contracts namely, index futures, stock futures, index options and stock options. It would however be pertinent to keep oneself updated with the changes in accounting norms for derivatives by regularly cross checking the website of the Institute of Chartered Accountants of India (www.icai.org).

11.1 Accounting for Futures

The Institute of Chartered Accountants of India (ICAI) has issued guidance notes on accounting of index futures contracts from the view point of parties who enter into such futures contracts as buyers or sellers.

For other parties involved in the trading process, like brokers, trading members, clearing members and clearing corporations, a trade in equity index futures is similar to a trade in, say shares, and does not pose any peculiar accounting problems. Hence in this section we shall largely focus on the accounting treatment of equity index futures in the books of the client.

11.1.1 At Inception of Contract

Every client is required to pay to the trading member/clearing member, the initial margin determined by the clearing corporation as per the bye-laws/regulations of the exchange for entering into equity index futures contracts.

Following entry should be passed for the initial margin:

Initial margin - Equity index futures account dr

To Bank a/c
(being initial margin paid on purchase of equity index futures).

Additional margins, if any, should also be accounted for in the same manner.

It may be mentioned that at the time when the contract is entered into for purchase/sale of equity index futures, no entry is passed for recording the contract because no payment is made at that time except for the initial margin.

On the balance sheet date, the balance in the 'Initial margin - Equity index futures account' should be shown separately under the head 'current assets'.

In those cases where any amount has been paid in excess of the initial/additional margin, the excess should be disclosed separately as a deposit under the head 'current assets'.

In cases where instead of paying initial margin in cash, the client provides bank guarantees or lodges securities with the member, a disclosure should be made in the notes to the financial statements of the client.

11.1.2 At the time of Daily Settlement

Journal entry for payments made or received on account of daily settlement by the client would be made as follows:

Bank a/c Dr

To Mark-to-market margin - Equity index futures account

(being margin received on equity index futures)

Mark-to-market margin - Equity index futures account dr

To Bank a/c

(being margin paid on equity index futures)

The client may also deposit a lump sum amount with the broker/trading member in respect of mark-to-market margin money instead of receiving/paying mark-to-market margin money on daily basis. The amount so paid is in the nature of a deposit. Journal entry to be passed is:

Deposit for mark-to-market margin account Dr

To Bank a/c

(being deposit made for mark to market margin on equity index futures)

At the year-end, any balance in the "Deposit for mark-to-market margin account" should be shown as a deposit under the head "current assets".

11.1.3 Open Positions

Position left open on the balance sheet date must be accounted for. Debit/credit balance in the "mark-to-market margin - Equity index futures account", represents the net amount paid/ received on the basis of movement in the prices of index futures up to the balance sheet date.

Keeping in view 'prudence' as a consideration for preparation of financial statements, provision for anticipated loss, which may be equivalent to the net payment made to the broker (represented by the debit balance in the "mark-to-market margin - Equity index futures account") should be created by debiting the profit and loss account.

Net amount received (represented by credit balance in the "mark-to-market margin - Equity index futures account") being anticipated profit should be ignored and no credit for the same should be taken in the profit and loss account.

The debit balance in the said "mark-to-market margin - Equity index futures account", i.e., net payment made to the broker, may be shown under the head "current assets, loans and advances" in the balance sheet and the provision created there-against should be shown as a deduction therefrom.

On the other hand, the credit balance in the said account, i.e., the net amount received from the broker, should be shown as a current liability under the head "current liabilities and provisions in the balance sheet".

11.1.4 Final Settlement

At the expiry of a series of equity index futures, the profit/loss, on final settlement of the contracts in the series, should be calculated as the difference between final settlement price and contract prices of all the contracts in the series.

The profit/loss, so computed, should be recognized in the profit and loss account by corresponding debit/credit to "mark-to-market margin - Equity index futures account".

However, where a balance exists in the provision account created for anticipated loss, any loss arising on such settlement should be first charged to such provision account, to the extent of the balance available in the provision account, and the balance of loss, if any, should be charged to the profit and loss account.

Same accounting treatment should be made when a contract is squared-up by entering into a reverse contract. It appears that, at present, it is not feasible to identify the equity index futures contracts. Accordingly, if more than one contract in respect of the series of equity index futures contracts to which the squared-up contract pertains is outstanding at the time of the squaring of the contract, the contract price of the contract so squared-up should be determined using First-In, First-Out (FIFO) method for calculating profit/loss on squaring-up.

On the settlement of equity index futures contract, the initial margin paid in respect of the contract is released. Following entry to be passed:

Bank a/c Dr

To Initial margin - Equity index futures account

(being initial margin released and received on final settlement of equity index futures)

Where the money is not received, but continues as a deposit with the broker, 'Deposit for Margin a/c' will be debited, instead of the Bank a/c.

11.1.5 Default

When a client defaults in making payment in respect of a daily settlement, the contract is closed out. The amount not paid by the Client is adjusted against the initial margin.

In the books of the Client, following entry to be passed:

Mark-to-market - Equity index futures account Dr.

To Initial margin - Equity index futures account

(Being amount adjusted on closing out of equity index futures contract)

The amount of initial margin on the contract, in excess of the amount adjusted against the mark-to-market margin not paid, will be released. The accounting treatment in this regard will be the same as explained above.

In case, the amount to be paid on daily settlement exceeds the initial margin the excess is a

liability and should be shown as such under the head 'current liabilities and provisions', if it continues to exist on the balance sheet date.

The amount of profit or loss on the contract so closed out should be calculated and recognized in the profit and loss account in the manner dealt with above.

11.1.6 Disclosure Requirements

The amount of bank guarantee and book value as also the market value of securities lodged should be disclosed in respect of contracts having open positions at the year end, where initial margin money has been paid by way of bank guarantee and/or lodging of securities.

Total number of contracts entered and gross number of units of equity index futures traded (separately for buy/sell) should be disclosed in respect of each series of equity index futures.

The number of equity index futures contracts having open position, number of units of equity index futures pertaining to those contracts and the daily settlement price as of the balance sheet date should be disclosed separately for long and short positions, in respect of each series of equity index futures.

11.2 Accounting for Options

The Institute of Chartered Accountants of India issued guidance note on accounting for index options and stock options from the view point of the parties who enter into such contracts as buyers/holder or sellers/writers. Following are the guidelines for accounting treatment in case of **cash settled** index options and stock options:

11.2.1 At Inception of Contract

Buyer / Holder of Option

The buyer/holder of the option is not required to pay any margin. He is required to pay the premium. In his books, such premium would be accounted as follows:

Equity Index / Stock Option Premium Account Dr

To Bank a/c

(being premium paid on purchase of equity index / stock option)

Seller / Writer of Option

The seller/writer of the option is required to pay initial margin for entering into the option contract. Such initial margin paid would be accounted as follows:

Equity Index / Stock Option Margin Account Dr

To Bank a/c

(Being margin paid on equity index / stock options written)

In the balance sheet, such account should be shown separately under the head 'Current Assets'.

In the books of the seller/writer, the premium received from the buyer / holder should be accounted as follows:

Bank a/c Dr

To Equity Index / Stock Option Premium Account

(being premium received on sale of equity index / stock option)

11.2.2 At the time of Payment / Receipt of Margins

Payments made or received by the seller/writer for the margin should be accounted as follows:

Bank a/c Dr

To Equity Index / Stock Option Margin Account

(being margin received on equity index / stock option sold)

Equity Index / Stock Option Margin Account Dr

To Bank a/c

(being margin paid on equity index / stock option sold)

Sometimes, the client deposit a lump sum amount with the trading/clearing member in respect of the margin instead of paying/receiving margin on daily basis. In such case, the amount of margin paid/received from/into such accounts should be debited/credited to the 'Deposit for Margin Account' instead of bank a/c.

At the end of the year the balance in this account would be shown as deposit under 'Current Assets'.

11.2.3 Open Positions

The 'Equity Index Option Premium Account' and the 'Equity Stock Option Premium Account' should be shown under the head 'Current Assets' or 'Current Liabilities', as the case may be.

In the books of the buyer/holder, a provision should be made for the amount by which the premium paid for the option exceeds the premium prevailing on the balance sheet date. The provision so created should be credited to 'Provision for Loss on Equity Index Option Account' or the 'Provision for Loss on Equity Stock Options Account', as the case may be.

The provision made as above should be shown as deduction from 'Equity Index Option Premium' or 'Equity Stock Option Premium' which is shown under 'Current Assets'.

In the books of the seller/writer, the provision should be made for the amount by which premium prevailing on the balance sheet date exceeds the premium received for that option. This provision should be credited to 'Provision for Loss on Equity Index Option Account' or to the 'Provision for Loss on Equity Stock Option Account', as the case may be, with a corresponding debit to profit and loss account.

'Equity Index Options Premium Account' or 'Equity Stock Options Premium Account' and 'Provision for Loss on Equity Index Options Account' or 'Provision for Loss on Equity Stock Options Account' should be shown under 'Current Liabilities and Provisions'.

In case of any opening balance in the 'Provision for Loss on Equity Stock Options Account' or the 'Provision for Loss on Equity Index Options Account', the same should be adjusted against the provision required in the current year and the profit and loss account be debited/credited with the balance provision required to be made/excess provision written back.

11.2.4 Final Settlement

Buyer / Holder of Option

On exercise of the option, the buyer/holder will recognize premium as an expense and debit the profit and loss account by crediting 'Equity Index Option Premium Account' or 'Equity Stock Option Premium Account'.

Apart from the above, the buyer/holder will receive favorable difference, if any, between the final settlement price as on the exercise/expiry date and the strike price, which will be recognized as income.

Seller / Writer of Option

On exercise of the option, the seller/writer will recognize premium as an income and credit the profit and loss account by debiting 'Equity Index Option Premium Account' or 'Equity Stock Option Premium Account'.

Apart from the above, the seller/writer will pay the adverse difference, if any, between the final settlement price as on the exercise/expiry date and the strike price. Such payment will be recognized as a loss.

As soon as an option gets exercised, margin paid towards such option would be released by the exchange, which should be credited to 'Equity Index Option Margin Account' or to 'Equity Stock Option Margin Account', as the case may be, and the bank account will be debited.

11.2.5 Squaring off Open Positions

The difference between the premium paid and received on the squared off transactions should be transferred to the profit and loss account.

Following are the guidelines for accounting treatment in case of **delivery settled** index options and stock options:

- The accounting entries at the time of inception, payment/receipt of margin and open options at the balance sheet date will be the same as those in case of cash settled options.

- At the time of final settlement,
  - If an option expires un-exercised then the accounting entries will be the same as those in case of cash settled options.
  - If the option is exercised, then shares will be transferred in consideration for cash at the strike price.

- For a call option the buyer/holder will receive equity shares for which the call option was entered into.

  The buyer/holder should debit the relevant equity shares account and credit cash/bank.

- For a put option, the buyer/holder will deliver equity shares for which the put option was entered into.

  The buyer/holder should credit the relevant equity shares account and debit cash/bank.

- Similarly, for a call option the seller/writer will deliver equity shares for which the call option was entered into.

  The seller/writer should credit the relevant equity shares account and debit cash/bank.

- For a put option the seller/writer will receive equity shares for which the put option was entered into.

  The seller/writer should debit the relevant equity shares account and credit cash/bank.

  - In addition to this entry, the premium paid/received will be transferred to the profit and loss account, the accounting entries for which should be the same as those in case of cash settled options.

Chapter 12: Derivatives – Taxation

12.1 Taxation of Profit/Loss on derivative transaction in securities

Prior to Financial Year 2005–06, transactions in derivatives were considered as speculative transactions for the purpose of determination of tax liability under the Income-tax Act. This was in view of section 43(5) of the Income-tax Act which defined speculative transaction as a transaction in which a contract for purchase or sale of any commodity, including stocks and shares, is periodically or ultimately settled otherwise than by the actual delivery or transfer of the commodity or scrips.

However, such transactions entered into by hedgers and stock exchange members in course of jobbing or arbitrage activity were specifically excluded from the purview of definition of speculative transaction.

In view of the above provisions, most of the transactions entered into in derivatives by investors and speculators were considered as speculative transactions.

The tax provisions provided for differential treatment with respect to set off and carry forward of loss on such transactions. Loss on derivative transactions could be set off only against other speculative income and the same could not be set off against any other income. This resulted in payment of higher taxes by an assessee.

Finance Act, 2005 amended section 43(5) so as to exclude transactions in derivatives carried out in a "recognized stock exchange" for this purpose. This implies that income or loss on derivative transactions which are carried out in a "recognized stock exchange" is not taxed as speculative income or loss. Thus, loss on derivative transactions can be set off against any other income during the year. In case the same cannot be set off, it can be carried forward to subsequent assessment year and set off against any other income of the subsequent year.

Such losses can be carried forward for a period of 8 assessment years. It may also be noted that securities transaction tax paid on such transactions is eligible as deduction under Income-tax Act, 1961.

12.2 Securities Transaction Tax on derivatives transactions

As per Chapter VII of the Finance (No. 2) Act, 2004, Securities Transaction Tax (STT) is levied on all transactions of sale and/or purchase of equity shares and units of equity oriented fund and sale of derivatives entered into in a recognized stock exchange.

As per Finance Act 2008, the following STT rates are applicable w.e.f. 1st June, 2008 in relation to sale of a derivative, where the transaction of such sale in entered into in a recognized stock exchange.

Sl. No.	Taxable securities transaction	Rate	Payable by
1	Sale of an option in securities	0.017%	Seller
2.	Sale of an option in securities, where option is exercised	0.125%	Purchaser
3.	Sale of a futures in securities	0.017%	Seller

Example

Mr. A. sells a futures contract of M/s. XYZ Ltd. (Lot Size: 1000) expiring on 29-Sep-2005 for Rs300. The spot price of the share is Rs290. The securities transaction tax thereon would be calculated as follows:

1. Total futures contract value = 1000 x Rs300 = Rs3,00,000

2. Securities transaction tax payable thereon at 0.017% = Rs3,00,000 x 0.017% = Rs 51.

Note: No tax on such a transaction is payable by the buyer of the futures contract.

PART 3: MUTUAL FUNDS

Chapter 13: Introduction To Mutual Funds

13.1 Role

Mutual Funds are an important channel for money to flow from investors to the financial markets. They collect money from investors through various *mutual fund schemes.* Every scheme has:

- An *investment objective* e.g. The objective of the scheme is to generate capital appreciation from a portfolio of predominantly equity and equity related securities;
- An *investment strategy* e.g. The scheme will invest in stocks, which, in the opinion of the Investment Manager, are available in the market at a significant discount to their intrinsic value.
- An *investment pattern* e.g. The scheme will generally invest up to 90% of its funds in equity and equity linked instruments; the balance will be in debt and money market instruments.

The investor gets a good idea about the risk profile of every scheme, on the basis of these parameters. He can accordingly decide to invest or disinvest or stay away from a mutual fund scheme, in line with his risk appetite.

Schemes offer units to investors, for the first time, through a *new fund offering (NFO).* The holding of investors in a scheme is quantified in *units*. An investor transacting with a mutual fund scheme, will be buying or selling its units.

Considering the importance of mutual funds to retail investors, they are tightly regulated. The applicable regulations are SEBI (Mutual Fund Regulations), 1996.

13.2 Scheme Types

Every scheme has its distinctiveness, driven by its investment objective, strategy and pattern. The schemes can be grouped into categories, based on various parameters, as follows:

13.2.1 Nature of Investments

Equity Schemes

These invest largely in equity and equity related securities. Amongst equity schemes, those that invest in a diverse range of industries (sectors) are called *diversified equity schemes*. Schemes that invest in only equities of a specific sector, say banking, are called *sector funds*.

Schemes may also choose to invest as per a theme. These are *thematic funds.* For example, a scheme may invest in equities of companies where real estate has an important role. These may span several sectors, such as real estate, retail, education etc. Thus, thematic funds have a more diversified portfolio than sector funds, but have less diversity than diversified equity funds.

The government approves certain equity schemes, for the purpose of offering investors benefits under Section 80C of the Income Tax Act. These are *Equity Linked Savings Schemes (ELSS).*

Some equity schemes take opposite positions in different market segments, such that a return is earned while remaining risk neutral. For example, invest in shares of Infosys (in the cash market) and sell Infosys futures (in the futures and options market) to maintain the risk neutrality. Such schemes are called *arbitrage funds.*

Debt Schemes / Income Schemes

These invest primarily in debt and debt related securities. There are different kinds of debt schemes. Those that invest in only Government Securities are called *Gilt Schemes.* Debt schemes that invest in a mix of government securities and non-government securities are called *diversified debt schemes.* Some debt schemes invest in only short term debt securities, which will mature within a year. These are called *money market schemes* or *liquid schemes.* The tenor of investments of liquid schemes is increasingly going even shorter, to 6 months.

Fixed maturity plan (FMP) is a kind of debt scheme, where the fund invests in debt securities whose maturity matches the maturity of the scheme. Thus, irrespective of the debt market scenario, on maturity, the scheme knows how much it is likely to recover from its investment portfolio (from the issuer on maturity of the instrument). This brings an element of predictability to the returns that an investor in the scheme may earn.

Floating rate funds or *floaters* invest in floating rate instruments. Such a portfolio construction minimizes the fluctuation in value of the units.

Non-government debt securities are generally rated by credit rating institutions like Crisil, ICRA, Credit Analysis & Research Ltd (CARE) and Duff & Phelps. Schemes that invest largely in securities of poor credit rating are called *junk bond schemes.*

Balanced Schemes / Hybrid Schemes

Balanced schemes invest in a mix of debt and equity securities. In order to enjoy tax benefits that are available to equity schemes, many balanced schemes operate with around 65% of the portfolio in equity securities, and the balance in debt securities.

Monthly Income Plan (MIP) is a variation of balanced schemes, where a significant component of the portfolio, say 80%, is in debt, the balance being in equities. The equity component is expected to boost the normal return in the core debt portfolio.

Another variant is a *Capital Protected Scheme*, which seeks to protect the investor's capital through adequate investment in safe zero-coupon debt securities (ideally government securities) whose maturity is in synch with the maturity of the scheme. For example, suppose the scheme is to mature in 5 years. Further, let us say, government security of Rs. 80 will mature to Rs. 100 in 5 years. If investors invest Rs. 10 crores in the scheme, the scheme

will buy Rs. 8 crores of zero coupon debt securities. The balance is invested in equity shares. Thus, irrespective of the equity market performance, the debt portfolio will mature to Rs. 10 crores, which can be paid to investors. The investor's capital is thus protected, even if the equity investment ends up as a dead loss.

13.2.2 Investment Style

Active Schemes / Managed Schemes

These are schemes where the fund manager has flexibility in choice of securities, within the investment universe defined for the scheme. Thus, a fund manager in a diversified equity scheme can buy any equity share; a fund manager in a technology sector fund can buy the securities of any company in the technology sector. The objective is to deliver a return that is better than what is generally available in the market i.e. *beating the benchmark.*

Most schemes in the market are active schemes.

Passive Schemes / Index Schemes

Unlike active schemes, which seek to beat the benchmark, passive schemes seek to *mirror the benchmark*. When the scheme is launched, an index in the market is identified as a benchmark. The benchmark for a diversified equity scheme may be the S&P CNX Nifty. Such a scheme will maintain a portfolio which would have the same stocks as in the S&P CNX Nifty; even the proportion of each stock in the value of the scheme portfolio will be the same as the weightage of the stock in the S&P CNX Nifty.

Through such mirroring of the portfolio, the scheme seeks to ensure returns that mirror the returns generated in the benchmark index. Thus, an investor in the scheme can earn the benchmark returns, without being exposed to the risk of poor portfolio choices (stock selection) by the fund manager.

Despite the best efforts by the fund manager to track the returns in the benchmark, gaps can come up, on account of various reasons:

- The fund manager may maintain some cash in the portfolio. The composition of the index does not include a cash component.
- Managing the scheme entails running costs, which will pull down the overall return from the scheme. For this reason, and also because fund managers have limited role in managing such schemes, the running costs of index schemes are extremely low.
- There may be timing differences between the investors' money coming into the scheme, and the scheme, in turn, investing in the market.

The gap between the return actually earned by an index scheme, as compared to its benchmark index return, is its *tracking error*.

13.2.3 Structure of Scheme

Open-ended Schemes

Some schemes are open for investors to enter and exit at any time. While investors come and go, the scheme remains open indefinitely. Such schemes are called *open-ended schemes.*

When an investor enters an existing open-ended scheme, the scheme is said to *sell* new units to the investor. An existing investor wanting to exit the open-ended scheme is said to offer his units for *re-purchase.* The counter-party for such sale and repurchase transactions by the investors, is the scheme itself. Therefore, the corpus of an open-ended scheme, keeps changing daily.

Close-ended Schemes

Unlike open-ended scheme, close-ended schemes have a fixed maturity, say, 5 years. Under the SEBI regulations, all close-ended schemes need to be compulsorily listed in a stock exchange. An existing investor, wanting to exit a close-ended scheme, will have to sell the units in the stock exchange, to some other buyer, at a mutually agreed price. Similarly, someone who wants to enter an existing close-ended scheme, will have to buy the units from some other seller in the stock exchange, at a mutually agreed price.

Since such sale and purchase transactions happen with counter-parties in the stock exchange (and not with the scheme, as in the case of open-ended schemes), the corpus of a close-ended scheme remains stable, until its maturity.

During the tenor of the scheme, only some limited re-purchase facility may be offered to small investors. This again is offered in only a few schemes. When a scheme re-purchases its units from investors, then the corpus of the scheme will decrease.

Interval Schemes

Interval schemes have some features of both open-ended and close-ended schemes. As with any close-ended schemes, investors would need to transact in existing interval schemes in the stock exchange. However, during limited periods, say, in the first week of every quarter, they become open-ended. Thus, investors can transact directly with the scheme, during these specified intervals. These intervals of open-endedness minimize the dependence of the investor on the stock exchange for his transactions.

13.2.4 Geography

Funds that invest within their geography (country) are *local funds*. Funds that invest beyond their geography are *international funds*.

13.2.5 Other Funds

Gold Funds

Such funds can be viewed as index funds that invest in gold. The returns in such funds fluctuate with the prices of gold.

It is important to differentiate such funds from gold sector funds, which are sector funds that invest in gold mining and processing companies. The returns in gold sector funds are more closely aligned to the share price of such gold mining and processing companies (which are only partly dependent on the prevailing gold prices).

Commodity Funds

Like gold, a range of commodities are available in the market. These include other precious metals (like silver), industrial metals (like copper & aluminium), fibres (like cotton), food crops (like sugar), spices (like pepper) and energy products (like oil).

Commodity funds are funds that invest in specific commodities, as laid down in the scheme's investment charter.

Real Estate Funds

Such schemes take exposure to real estate. Thus, even small investors can benefit from the prospects of real estate.

Fund of Funds

These are funds that invest in other funds. They save investors the trouble of having to choose between so many different varieties of schemes available in the market.

Exchange Traded Funds

As was seen earlier, investors in an existing open-ended scheme transact with the scheme through sale and re-purchase transactions. The sale and re-purchase prices are determined by the scheme once a day. Since the market fluctuates during the day, a need was felt for open-ended schemes to allow transactions at prices that would reflect the intra-day market. Thus *Exchange Traded Funds* (ETFs) came into existence.

ETFs are inherently index funds, in that they invest as per a pre-announced benchmark index. They are also open-ended viz. they keep selling and re-purchasing units. Most of them offer different trading mechanisms for large and small investors.

- Large investors transact directly with the scheme. This would be like the normal sale and repurchase transactions in open-ended schemes. However, the transactions happen at the prevailing market prices. Different investors may transact with the scheme at different prices during a trading day.
- Small investors transact with *market makers* appointed by the scheme. These market-makers give two-way quotes (buy and sell quotes), which keep changing during the trading day, in line with market conditions. Thus, even small investors are able to transact at prices which change intra-day.

  If the market maker ends up selling more units to investors, then he would have the money which can be used to buy units from the scheme and deliver to the investors who sold. On the other hand, if the market maker bought more units from investors, he would

offer these for re-purchase to the scheme. This would give him the liquidity to pay the investors from whom he bought those units. The difference between the price at which he buys and sells units i.e. the spread, is profit for the market maker.

13.3 Options

Most schemes offer multiple options. An investor needs to select, not only a suitable mutual fund scheme, but also the appropriate option within the scheme. The options offered, vary between schemes; they also depend on the prevailing tax provisions. Typically, investors find themselves having to choose between the following options:

13.3.1 Dividend Payout Option

In a dividend payout, the dividend is paid out i.e. the investor receives in his bank account, the dividend that is declared by the mutual fund scheme.

13.3.2 Growth Option

In a growth option, the mutual fund scheme does not declare a dividend. Therefore, the investor does not receive anything in his bank account, in the form of dividend. The profits earned in the scheme, remain invested in the scheme. Investors, who need the money, can get their units re-purchased by the scheme. The re-purchase price will reflect the original investment by the investor in the scheme, as well as the subsequent performance of the scheme.

13.3.3 Dividend Re-investment Option

This is a hybrid of the two options mentioned above. The scheme declares dividends, from time to time. However, the dividend is not paid out to the investor; the investor is issued new units against such dividend.

The optimal choice between these options depends on the cash flow requirements of the investor, as well as the tax provisions, which vary from scheme to scheme. These are discussed in Chapter [19].

Chapter 14: Mutual Funds-Structure & Operations

14.1 Mutual Fund Structure

Mutual funds in India need to adopt the legal framework mandated by the SEBI (Mutual Funds) Regulations, 1996.

The prime mover behind setting up a mutual fund is the *sponsor*. SEBI regulations require that the sponsor:

- Has been carrying on business in financial services for at least 5 years.
- Has positive net worth for each of those 5 years (Net worth = Share Capital + Reserves – Accumulated Losses).
- Should have earned profits, after providing for depreciation and interest, in at least 3 out of those 5 years, including the latest year.
- Should have a sound track record and reputation of fairness and integrity in business.

Under the regulations, Mutual Funds are to be constituted as *trusts*. The term 'XYZ Mutual Fund' is a reference to such a trust. The sponsor establishes the trust through a *trust deed.* The beneficiaries of the trust are the investors in the various schemes floated by the fund.

The trust acts through *trustees*, who are appointed by the sponsor. Every trustee has to be a person of ability, integrity and standing. A person who is guilty of moral turpitude cannot be appointed trustee. Further, a person convicted of any economic offence or violation of any securities laws cannot be appointed as trustee. Prior permission of SEBI is to be taken, before a person is appointed as trustee.

Instead of appointing individuals as trustees, the sponsor can also appoint a *trustee company* i.e. a company that performs the role of trusteeship. The company will operate through directors, who will need to meet the requirements prescribed for trustees.

The trustees (or directors of the trustee company) have a key role in protecting the interests of investors. In order to ensure that this role is performed effectively, SEBI regulations require that there should be at least 4 trustees (or directors in the trustee company). At least two-thirds of them should be *independent* i.e. they should not be associate of the sponsor.

Day to day operations of the mutual fund are handled by an Asset Management Company (AMC), appointed by the sponsor or the trustees. Role and responsibilities of the AMC are laid down in the investment management agreement executed with it.

The AMC is required to have a net worth of at least Rs. 10 crores. The sponsor should have at least 40% stake in the share capital of the AMC. Every person who has more than 40%

stake in the AMC is deemed to be a sponsor, and should therefore fulfill the requirements of sponsor, mentioned earlier.

SEBI regulations require that the directors of the AMC are persons having adequate professional experience in finance and financial services related field. Directors as well as key personnel of the AMC should not have been found guilty of moral turpitude or convicted of any economic offence or violation of any securities laws. Further, key personnel of the AMC should not have worked for any asset management company or mutual fund or any intermediary during the period when its registration was suspended or cancelled at any time by SEBI.

Prior approval of the trustees is required, before a person is appointed as director on the board of the AMC. Further, at least half the directors in the AMC need to be *independent* i.e. not associate of the sponsor.

In the mutual fund legal structure, it is the AMC which owns or leases offices, and employs fund managers and other employees to perform its role as investment manager. The AMC needs to work under the overall supervision and guidance of the trustees, who have the responsibility of protecting investors' interests.

As another check in the system, the regulations require that the mutual fund appoint a custodian, who will have custody of the various investments made by the fund. Thus, the investment management responsibility is handled by the AMC, but the custodian has custody of those investments. The custodian operates in line with a custodial agreement, which is executed with the trustees.

Offices of the AMC handle the servicing of investors in its various mutual fund schemes. The AMC can also choose to appoint a Registrar and Transfer Agent (RTA). The AMC, or, if appointed, the RTA, is responsible for maintaining investor records. The AMC can also appoint different RTAs for different schemes. The RTAs (who may cater to multiple AMCs) have a wide geographic presence through their investor servicing centres (ISCs). These perform a useful role in catering to the needs of investors, physically in the ISC offices, as well as through internet and mobile channels.

As is evident from the discussions so far, the AMC is a legal entity, different from the scheme. Therefore, the AMC's accounts are different from the Scheme's accounts. An AMC can also choose to appoint a *Fund Accountant* to maintain the accounts of the various schemes managed by it. The regulations require that the AMC's auditors are different from the scheme's auditors.

14.2 Mutual Fund Operations

The AMC is responsible for day to day operations of the mutual fund. Designations of employees vary between AMCs. Indicatively, the MD / CEO leads the AMC. The team would include a Chief Investment Officer (supported by Fund Managers), Chief Operations Officer, Chief Marketing Officer and Compliance Officer.

When investors invest in a scheme, they are issued *units of that scheme.* The number of units issued would depend on the amount invested, as well as the per unit value.

As per SEBI regulations, every scheme needs to have a fund manager (who can manage any number of schemes). The size of a scheme is measured by its net assets, which depends on:

- The amount mobilized in the NFO (initial corpus)
- Valuations in the market (better the valuation, higher the net assets)
- Sales and Re-purchases of units, in the case of open-ended scheme (Sales of new units will increase net assets; re-purchase of existing units will reduce net assets).
- Income and expenditure (income would increase the net assets; expenses would decrease the net assets).

Every scheme has a value of net assets, which represents the worth of a certain number of units that have been issued to investors. The net assets divided by the number of units is the scheme's NAV, an important metric that is used for evaluating performance of schemes.

'Net assets' is also called *assets under management (AUM).* The total AUM of all schemes managed by an AMC, is the AUM of that AMC.

14.3 Mutual Fund Distribution Channels

The schemes are sold in the market by mutual fund *distributors*. Some of them (banks and large distribution houses) have pan-India reach, while some others have a regional reach. Several individuals too, operating as Independent Financial Advisers (IFAs) perform the role of selling mutual funds.

More recently, the Stock Exchange brokers are being encouraged to sell mutual funds as an additional investment option for their clients. NSE Offers NEAT MFSS platform to help its stock exchange brokers offer mutual fund services to their clients.

Anyone who is into selling of mutual funds, whether as IFA, or as employee of a distributor or AMC, needs to qualify in an examination prescribed by SEBI and conducted by National Institute of Securities Market (NISM). The exam is also compulsory for anyone who interacts with mutual fund investors, including investor relations teams and employees of call centers.

Distributors / employees who were above the age of 50 years, and had at least 5 years of experience as on September 30, 2003 were exempted from the requirement of passing the qualifying examination. But they need to attend a prescribed refresher course.

Before selling mutual funds, the person needs to register with Association of Mutual Funds in India (AMFI) and obtain their AMFI Registration Number (ARN). Unless exempted from

the examination requirement, the ARN can be obtained only after passing the qualifying examination. Separate ARN is required for the organization, and for each of its employees who is into selling mutual funds.

While the ARN operates as a license to sell mutual funds, the distributors / brokers / IFAs need to empanel themselves with the mutual funds, whose schemes they would like to sell. Empanelment is a simple procedural requirement and can be done with multiple AMCs. The objective of empanelment is to help the AMC to evaluate the strength of its proposed selling agent, and set out the respective rights and obligations.

Some organisations / IFAs choose to become agents of an empanelled agency, instead of seeking direct empanelment with the mutual fund. Even in such cases, the ARN requirements are the same.

The mutual fund industry keeps talking of its distribution channels. AMCs employ Channel Managers for handling these channels. The structure varies between AMCs. Typically, there is a Bank Channel (banks as distributors), Other Distributor Channel (other distributors, such as broking houses and non-banking finance companies, who could be national or regional), IFA Channel and Alternate Channel (any other distribution channel).

14.4 Distribution Commission

SEBI has mandated a regime, where the distributor can recover commission from the investors. Thus, each investor can pay a commission based on the value he sees in the service offered by the distributor.

Besides, the AMC pays a commission, which can take two forms:

- *Upfront Commission* – a percentage on the amount invested by the client using the distributor as intermediary.
- *Trail* Commission – a percentage on the market value of the client's portfolio with the AMC. Needless to say, the market value factors in the appreciation or depreciation in the scheme portfolio.

These vary between AMCs. Even within the same AMC, they vary between schemes.

14.5 New Fund Offer

Any scheme is launched in the market through a New Fund Offer (NFO). The launch is preceded by a series of steps, which can be summarized as follows:

- The AMC perceives a need in the market that can be met through a scheme.
- The senior management team in the AMC discusses and debates the investment objective and other broad contours of the proposed scheme. The view of the Chief Investment Officer, on the prospects in the financial market to deliver performance on the basis of

the proposed investment objective is key. Similarly, the opinion of the Chief Marketing Officer, on the interest in the investment community for such a scheme is important. Considering the various thoughts, scheme parameters are finalized.

- The AMC prepares the *Scheme Information Document* (SID), which has details of the scheme.
- The SID need to be approved by the Board of Trustees, as well as the Board of Directors of the AMC. Further, the trustees need to confirm to SEBI that this is indeed a new scheme, and that the AMC does not have another existing scheme with a similar investment objective.
- The SID needs to go to SEBI, which puts up the SID on its website. It thus becomes a public document. Any member of the public can approach SEBI with comments or objections.
- SEBI is expected to review the SID and give its observations on the same, within 21 working days.
- Beyond the observations, SEBI does not approve or disapprove the SID. However, the AMC is required to incorporate all the observations of SEBI.
- The Compliance Officer (or Chief Executive Officer or Executive Director or Managing Director) of the AMC needs to certify that the SID confirms with SEBI Regulations, and that all of SEBI's observations have been incorporated in the documents.
- The final SID is to be uploaded in the website of AMFI (www.amfiindia.com) two days before the issue opens.
- Besides the SID, the AMC also prepares a *Statement of Additional Information (SAI)*. This has details of the mutual fund making the offer. It is common for all schemes.
- While the SID and SAI are available as downloads in the website of the AMC, the document, which is more freely available in the market, is the *Key Information Memorandum (KIM)*. It is a summarized version of the information that is contained in the SID and SAI. All these documents need the approval of the trustees, and the board of the AMC.
- Investors invest in the NFO using an *Application Form*. As per SEBI regulations, the KIM needs to be part of every application form that the AMC issues in the market.
- The AMC makes the requisite arrangements with the bankers and the RTA to handle the investors' applications.
- The AMC also arranges to distribute the offer related documents and application forms in the market place.

- In order to attract the investors, the AMC does the requisite advertising and publicity. SEBI has prescribed an advertising code, to ensure fairness in the promotion.
- The AMC also decides on the commission structure for distributors and promotional support which be made available for them.
- Channel Managers, who are employees of the AMC, promote the scheme through their distribution channels. Direct Sales team within the AMC tap large investors.
- The SID prominently features the dates when the NFO opens and closes. Investors would need to invest during the issue period i.e. the period between the NFO Open Date and the NFO Close Date. This can be a maximum of 15 days.
- As was seen earlier, investors can invest or redeem their investments at any time, in the case of an open-ended scheme. This facility starts a few days after the NFO Close Date. This date too is mentioned in the SID of open-ended schemes, as 'Scheme Re-opens on'.

Chapter 15: Mutual Funds-Investors' Transactions

15.1 Who can invest?

- Individuals who are resident in India, and above the age of 18 years. They can invest singly, or jointly (not exceeding three names).
- Minors can invest through their parents or legal guardians
- Hindu Undivided Families (HUF)
- Non-Resident Indians (NRI) / Persons of Indian Origin (PIO), resident abroad / holders of Overseas Citizen of India (OCI) Cards. Their investments would be repatriable (i.e. on sale, the investment proceeds can be transferred abroad), provided the original investment came into India in foreign currency, or the investment was made out of Non Resident External (NRE) Account.
- Partner(s) of Partnership Firms
- Association of Persons or Body of Individuals, whether incorporated or not
- Companies / corporate bodies, registered in India
- Registered Societies and Co-operative Societies
- Religious and Charitable Trusts
- Trustees of private trusts
- Banks (including Co-operative Banks and Regional Rural Banks) and Financial Institutions and Investment Institutions
- Mutual Funds registered with SEBI
- Army/Navy/Air Force, Para-Military Units and other eligible institutions
- Scientific and Industrial Research Organizations
- Universities and Educational Institutions
- Foreign Institutional Investors (FIIs) registered with SEBI
- International Multilateral Agencies approved by the Government of India

While each of the above is eligible to invest in mutual funds, as per the SEBI Regulations, investors who are not individuals (companies, trusts etc.) need to confirm that they are eligible to invest, as per their incorporation documents, investment policy etc.

Non-individual investors will authorize some individuals (e.g. director, secretary, trustee) to sign the investment documents on behalf of the organization. Such investors will need to submit the following documents to support their investment:

- Incorporation document (e.g. Memorandum of Association & Articles of Association in the case of companies; Trust Deed for trusts).
- Investment authorization (e.g. copy of resolution that authorizes the institution to invest in this specific scheme, or generally in investments of this kind.
- Signatory authorization (e.g. copy of resolution that authorizes specific officials to sign the relevant documents on behalf of the institution).

15.2 Who cannot invest?

- Any non-resident entity, other than FIIs and foreign citizens. A non-resident entity is permitted to open a sub-account with a SEBI-registered FII, and invest through that account. (Readers are requested to refer to SEBI's website for any changes to this rule)
- Overseas Corporate Bodies (OCBs) – These may be trusts or societies. They are treated as OCBs (and therefore ineligible to invest) if owned, directly or indirectly, to the extent of over 60% by NRIs, or if more than 60% of the beneficial interest belongs to such OCBs.

Some schemes, or options within schemes, do not accept specified classes of investors, even though the class may be eligible to invest in mutual funds, as per the SEBI regulations. It is therefore desirable to check the 'Who can invest' section of the scheme's Offer Document.

15.3 Know Your Customer (KYC) Requirements

All investments of Rs. 50,000 and above need to comply with the KYC documentation requirements. Investors need to submit:

- Proof of Identity e.g. Passport copy
- Proof of Address e.g. Copy of Ration card of Passport copy
- PAN Card
- Photograph

It is cumbersome for investors to comply with the KYC requirements for each investment in every mutual fund. Therefore, CDSL Ventures Ltd. (CVL) has been engaged as a central agency for the purpose. It operates through Points of Service (POS), which are essentially branches / offices of mutual funds, registrars and large distributors.

Investors can approach any POS, with the original, and one copy of the requisite documents. The POS will check the original and return it to the investor. The copy will be retained by the POS, which will access CVL's system, enter the requisite data and generate an acknowledgement with a Mutual Fund Identification Number (MIN). The mutual fund investor can quote the MIN for investing in any mutual fund. Thus, the KYC documentation has to be done only once.

Even for change in address and other information, the investor can approach any POS, with the supporting documentation and fill a standard form. Based on that, the change will be registered with all mutual funds.

In the case of minors, the parent / legal guardian need to comply with the KYC requirements.

For investments through Power of Attorney, both the investor and power of attorney holder need to comply with the KYC documentation.

PAN Card has been made compulsory for all investments, irrespective of value. However, investment by individuals, minors and sole-proprietory firms through Micro-SIPs are exempted from the requirement of PAN card. [Systematic Investment Plans (SIPs) are plans where the investor invests a constant amount at regular intervals, generally monthly. Micro-SIPs are SIPs where annual investment (12 month rolling or April-March financial year) does not exceed Rs. 50,000.]

Instead of PAN Card, any one of the following Photo Identification documents can be submitted along with the Micro SIP application:

- Voter Identity Card
- Driving License
- Government / Defense identification card
- Passport
- Photo Ration Card
- Photo Debit Card (Credit card not included because it may not be backed up by a bank account).
- Employee ID cards issued by companies registered with Registrar of Companies)
- Photo Identification issued by Bank Managers of Scheduled Commercial Banks / Gazetted Officer / Elected Representatives to the Legislative Assembly / Parliament
- ID card issued to employees of Scheduled Commercial / State / District Co-operative Banks.
- Senior Citizen / Freedom Fighter ID card issued by Government.
- Cards issued by Universities / deemed Universities or institutes under statutes like ICAI, ICWA, ICSI.
- Permanent Retirement Account No (PRAN) card issued to New Pension System (NPS) subscribers by CRA (NSDL).
- Any other photo ID card issued by Central Government / State Governments /Municipal authorities / Government organizations like ESIC / EPFO.

Copy of any of the above documents is to be self-attested by the investor or attested by the ARN holder mentioning the ARN number.

Investors also have to give a declaration stating that the he does not have any existing Micro SIPs which together with the current application will result in aggregate investments exceeding Rs. 50,000 in a year.

This relaxation for micro-SIPs is available for NRIs, but not for PIOs. Similarly, it is not available for HUFs, and investors who are not individuals.

15.4 Investor Transactions (Normal Physical Mode)

15.4.1 Acquisition of Units by Investor from the Scheme

(Sale Transaction for the Scheme)

The first opportunity, for the investor to acquire units of a scheme, comes up in the NFO. Here, the investor transacts at an issue price that is pre-determined by the AMC. The investor can fill in the application form and pay the prescribed amount. If the investment is found valid, then the investor is allotted the units applied for. If not, the money is refunded.

The investor can avoid the problem of having to wait for a refund, by investing through the Application Supported by Blocked Amount (ASBA) mechanism. Under this mechanism, the investor authorizes his bank to block the amount that is required to support his application. Thus, if the issue price is Rs. 10, and he is applying for 100 units, then Rs. 1000 will be blocked by his banker.

If units are allotted to the investor, the RTA intimates the banker. Accordingly, the banker releases the requisite application money to the scheme. If the amount blocked is in excess of the application money required, the excess is released to the investor. Since the money remains in the investor's bank account during this period, when the amount is blocked, the investor continues earning an interest. Further, delays in having to wait for a refund from the scheme can be avoided. Thus, ASBA is beneficial for investors.

Such acquisition of units by investors in the case of NFO, happens for both open-ended and close-ended schemes. Further, in the case of open-ended schemes, after the scheme re-opens, investor can buy units from the scheme any day. This kind of acquisition of units by an investor from the scheme is a sale of units, as far as the scheme is concerned. In market parlance, this is a *sale transaction;* it happens at a *sale price,* which depends on various factors that are explained in Chapter [16].

Close-ended schemes do not allow ongoing sale of new units.

15.4.2 Sale of Units by Investor to Scheme

(Re-purchase Transaction for Scheme)

An existing investor in an open-ended scheme can sell his units back to the scheme, any

working day, after the scheme re-opens. He can do this, either for his entire holding or part of it. Further, instead of specifying the number of units he wants to sell, he can specify an amount that he wants to realize.

In market parlance, when an investor offers his units for sale to the scheme, he is said to *offer his units for re-purchase.* The *re-purchase* transaction happens at a *re-purchase* price, which depends on various factors that are explained in Chapter [16].

Close-ended schemes do not, generally, offer the flexibility of such any-time re-purchase. However, some close-ended schemes offer a limited re-purchase facility to investors. Limits may be specified on the amount that can be re-purchased by an investor and / or by all investors together. This facility may be available only to original investors in the NFO. Restrictions may also be imposed on when the re-purchase can be sought by investors, and how such re-purchase requests will be processed by the AMC.

15.4.3 Secondary Market Transactions in Units by Investor

Close-ended schemes do not allow ongoing sale of new units; at best, they may offer limited re-purchase facility for existing investors.

Liquidity in units of close-ended schemes is offered through a listing of the units in the stock exchange. Thus, like shares, any investor can buy or sell units of close-ended schemes in the stock exchange. As with shares, the investor places an *order* (to buy or sell) in the NEAT system, which matches the order with other *passive orders* (to sell or buy, as the case may be) in the system. If no match is found, the order becomes a passive order in the system for matching against future orders during the day (unless of course, it is an *immediate or cancel* order, in which case the unmatched order will lapse, without becoming a passive order).

Open-ended schemes offer the facility of ongoing sale and re-purchase, directly with the scheme. As an additional form of liquidity, units of open-ended schemes too can be listed in the stock exchange. The trading in units of such listed open-ended schemes is similar to that of close-ended schemes.

Recent developments in facilitating stock exchange brokers' transactions in mutual fund units are discussed later in this chapter.

15.4.4 Redemption of Units on closure of scheme

Close-ended schemes have a fixed tenor. At the end of the tenor, the scheme is closed. On closure, the investor surrenders his units, and is paid the value of his unit-holding. Such transactions are called *redemption of units.*

Open-ended schemes too can choose to close, subject to requisite approvals. If that happens, the units would be similarly redeemed.

15.4.5 Additional Purchase by Investor

An investor buying units of a mutual fund scheme will fill the application form of the mutual fund. However, if he has already invested in some other scheme of the mutual fund, then the mutual fund would have opened a folio with the relevant details of the investor. In such cases of *additional purchase*, the investor does not need to fill the entire application form – he can fill a concise *transaction slip.*

When a mutual fund sends statement of accounts to investors, transaction slip with pre-printed folio number is attached. Transaction slips without the pre-printed folio number are available in offices of the mutual fund, distributors and investor service centres. They can also be downloaded from the website of the AMC.

15.4.6 Switch by Investor

When an investor moves his moneys from one scheme to another within the same mutual fund, it is called a *switch*. For the scheme into which the money goes, it is a *switch in.* It is a *switch* out from the scheme from which money is withdrawn.

15.4.7 Systematic Investment Plan

Equity markets are volatile. Attempts to time the market are rarely successful. Therefore, it is advisable to keep investing constant amounts at regular intervals (normally, a specific date of the month). Such an approach to investment is called *Systematic Investment Plan (SIP)* or *Rupee Cost Averaging*.

Whenever the market is up on the date of investment, the investor will receive fewer units. The investor will be compensated by receiving more units, whenever the market is down on the date of investment. Thus, the acquisition cost of the units is averaged during the SIP period. The investor does not get saddled with units, all bought at the market peak.

SIP can be easily handled through Electronic Clearing System (ECS) / Standing Instructions to the investor's bankers. Alternatively, the investor can leave post-dated cheques with the AMC, to cover future investments under the SIP.

15.4.8 Systematic Withdrawal Plan

Just as it is difficult for investors to time their entry into markets, it is also difficult for them to time their exit from markets. Investors do not want to end up selling all their units during a market crash. Selling investments steadily – constant amounts at regular intervals – protects the investor.

If on the date of sale, the market is up, the investor will find that he is able to encash the same amount by selling fewer units; conversely, if the market is down on the date of sale, the

investor will end up selling more units to realize the same amount. Over the SIP period, the investor is able to average the sale price of his units.

The investor can leave standing instructions with the AMC to operationalize the SWP. Thus, he does not need to give a separate instruction each month.

15.4.9 Systematic Transfer Plan

This is a combination of *switch in* and *switch out* done regularly. For instance, an investor may invest a large amount in a debt scheme, and leave instructions to systematically transfer, constant amounts each month, from the debt scheme to an equity scheme of the same mutual fund. Thus, on the said date of the month, each month, an agreed value of units in the debt scheme will be redeemed (*switch out)* and invested in the equity scheme *(switch in).*

15.5 Investor Transactions (Through the Internet)

Most AMCs have made arrangements to effect the above transactions through the internet. In order to avail of this facility, the investor needs to have a folio with the mutual fund. On this basis, the AMC or the RTA allot a Personal Identification Number (PIN). Using this, additional purchases as well as re-purchase of units becomes possible.

For the purchases, moneys can be transferred through National Electronic Funds Transfer (NEFT) or Real Time Gross Settlement (RTGS). Similarly, the mutual fund can directly transfer the proceeds of the re-purchase into the investor's bank account.

Some distributors have also made arrangements for their clients to do online transactions, similarly.

Besides, the transactions in the stock exchange for listed mutual fund schemes can be effected online.

15.6 Investor Transactions (NSE MFSS Channel)

The regulaters and stock exchange are keen to see stock exchange brokers become a channel for investors to transact in mutual funds. NSE offers the NEAT MFSS platform to help brokers handle this.

As was discussed, the NEAT system can handle transactions in listed mutual fund schemes, where orders get matched within the system. NSE MFSS is an order routing system, meant to facilitate transactions between the investor and the mutual fund scheme. It is open on all working days from 9 am to 3 pm. The order routing system works as follows:

- Investor who wants to do the transaction (new application / additional purchase / redemption) gets in touch with the broker. The broker prints the transaction slip from the broking system and gives it to the investor.

- This first leg of the transaction (the actions of purchase and payment for the same, or re-purchase, originated by the investor) is handled through the stock exchange clearing corporation. The broker is responsible for delivering any physical documents to the RTA.
- The second leg of the transaction (the actions of the RTA in sending Units or re-purchase proceeds) happens directly between the RTA and the investor. Some improvements are being made, to give the broker control over the 2nd leg of the transaction as well.

Over time, it is hoped that the stock exchange brokers will become a key channel of cost-effective transactions for mutual fund investors.

Chapter 16: Mutual Funds - Expenses, NAV & LOAD

16.1 Expenses

It was discussed earlier how schemes are floated by the mutual fund. The AMC is appointed as investment manager for the scheme. The scheme accounts are to be maintained independent of the AMC's own accounts. Both need to appoint different auditors.

The AMC's role goes beyond fund management to various day to day operations like sales, accounting etc. In order to perform its role, the AMC establishes offices, recruits employees, ensures the requisite data and systems support etc. The related rent, salary, software and other establishment expenses, incidental to the AMC performing its role, are to be borne by the AMC itself. The scheme pays an asset management fee to the AMC, out of which the AMC has to meet these establishment expenses.

Thus, the asset management fee is an expense for the scheme (but not the rent, salary etc.). Similarly, the scheme incurs several other expenses such as:

- Expenses for services provided by custodian, RTA, auditors and bankers
- Fees to depository for demat arrangements, and stock exchanges for listing
- Advertising and sales promotion expenses
- Commissions for distributors
- Printing offer documents, application forms etc.
- Expenses for investor services, such as fund account statements, dividend warrants, redemption cheques etc.
- Service Tax

SEBI has prescribed limits to such scheme expenses, which are of a recurring nature, as follows:

Net Assets (Rs crore)	Equity Schemes	Debt Schemes
Upto Rs. 100 crore	2.50%	2.25%
Next Rs. 300 crore	2.25%	2.00%
Next Rs. 300 crore	2.00%	1.75%
Excess over Rs. 700 crore	1.75%	1.50%

Thus, an equity scheme with net assets of Rs. 150 crore, can incur recurring expenses, as follows:

First Rs. 100 crore of net assets	2.50% i.e. Rs. 2.500crore
Rs. 150 crore less Rs. 100 crore i.e. Rs. 50 crore	2.25% i.e. Rs. 1.125crore
Total	**Rs. 3.625 crs.**

The above limits are subject to the following further restrictions:

- The management fee component (paid to the AMC) cannot exceed 1.25% on the first Rs. 100 crores of net assets of each scheme; on the remaining net assets, the management fee cannot exceed 1%.
- Debt schemes cannot charge a management fee on the funds that are parked in short term deposits with commercial banks.
- The following expenses cannot be charged to the scheme:
    - Initial issue expenses
    - Establishment expenses, infrastructure costs, depreciation, fund accounting expenses, software expenses, general administration and investment management expenses (all of which are to be borne by the AMC out of the management fee it earns)
    - Corporate advertising
    - Legal, marketing, printing and other expenses that do not relate to any schemes.
    - Interest on delayed payments to unit-holders
    - Fines and penalties for violating any laws.

    Given the nature of the schemes, lower expense limits are available in the following cases:
- Recurring expense limit is 1.5% for index funds and Exchange Traded Funds. Within this, the management fee cannot exceed 0.75%
- Recurring expense limit is 0.75% for fund of funds.

16.2 Net Assets & NAV

The concept was introduced in Chapter [13]. Suppose, a scheme has the following financials, as on a particular date:

- Rs. 1 crore units of Rs. 10 each, issued to unit-holders
- Rs. 3 crores is in bank deposits; Rs. 8 crore in equities (market value Rs. 9 crores).
- Amounts payable by the scheme to the stock exchange brokers, AMC etc. (liabilities) of Rs. 1 crore.

    The financials can be tabulated in a balance sheet, as follows:

    Liabilities:

Unit Capital (1crore units of Rs. 10 each)	Rs. 10 crores
Reserves (Appreciation in portfolio viz. Rs.9cr less Rs.8cr)	Rs. 1 crore
Unit-holders Funds	Rs. 11 crores
Other liabilities	Rs. 1 crore
Total Liabilities	**Rs. 12 crores**

Assets:

Equity Investments (at market value)	Rs. 9 crores
Bank Deposit	Rs. 3 crores
Total Assets	**Rs. 12 crores**

The unit-holders' funds of Rs. 11 crores is the Net Assets of the scheme.

Each unit is worth Rs. 11 crores ÷ 1 crore units viz. Rs. 11 per unit. This is the Net Asset Value (NAV) of each unit of the scheme.

16.3 Valuation

The NAV is thus determined, based on market value of investments. The approach is also called *mark to market.* Detailed SEBI regulations prescribe how the marking to market is to be done. In brief:

- Equity shares that are actively traded are valued at the closing price on the date of valuation.
- Shares which are not traded at all, or are thinly traded, are valued as per a SEBI formula, which factors in the net worth of the company's share, its profitability and the Price / Earnings Ratio of other companies in the industry.
- Government securities are valued on the basis of the yield at which such securities of similar maturity are traded in the market.
- For valuation of other debt securities, a yield matrix is calculated based on trading of securities of different credit rating and durations in the market. Each security is valued on the basis of the yield matrix reading for its credit rating and duration.
- Stringent regulations have been laid down for recognizing income and expenses in the scheme, as well as for providing for non-performing assets.

16.4 Load

An investor would expect that his transactions with the scheme would happen at the NAV of its units. Thus, if the NAV is 12, he would expect to receive 1000 units, if he invests Rs. 12,000. Similarly, if he offers 500 units for re-purchase, he would expect to receive Rs. 12 X 500 i.e. Rs. 6,000.

In the above case, if the scheme were to charge Rs12.10 for selling a new unit to the investor, then he would receive fewer than 1,000 units for his investment of Rs. 12,000. The Rs. 0.10 paise would thus become a load borne by the investor. It is called *entry load*.

Entry Load is not permitted by SEBI. Therefore, the price at which units are sold to the investor viz. *Sale Price,* is equal to the NAV of the scheme.

Similarly, if the scheme were to pay the investor only Rs. 11.88 per unit when he offers 500

units for re-purchase, he would receive less than Rs.6,000. The Rs. 0.12 paise (which work out to 1% of NAV) would thus become a load borne by the investor. It is called *exit load.*

The scheme might also have a structure, where the investor would have to bear a graded load, depending on the period of his unit-holding. For instance, the load would be 1% if the investor holds the units for 4 years; 2% if the investor holds the units for 3 to 4 years; 3% if the investor holds the units for 2 to 3 years; and so on and so forth. Thus, an investor continuing in a scheme longer would bear a lower load than an investor who holds his investment for a shorter period. Such graded structures are called *contingent deferred sales charge (CDSC).*

Exit load / CDSC are meant to help AMCs meet some of the selling expenses. These are permitted by SEBI, subject to the following conditions:

- If the exit load / CDSC is more than 1% of the redemption proceeds, it is to be added back to the scheme. Thus, it does not become available to the AMC to meet sales expenses.
- All the unit holders representing a portfolio would have to be subject to the same exit load structure.

Earlier, SEBI also allowed AMCs to charge to the scheme, initial issue expenses incurred for its launch. For example, if a 5-year scheme incurred Rs3crore for its launch, the amount could be charged to the scheme as Rs60lakh each year, for 5 years. The annual charge in turn would be split into a charge for every day. This kind of charge of initial issue expenses, to the scheme, over a period of time, was called *deferred load.*

Deferred load is no longer permitted by SEBI. However, some old schemes, which were permitted deferred load when they were launched, continue charging deferred load.

16.5 Cut-off Timing

Transaction prices (Sale / re-purchase) are thus a function of NAV, which in turn depends on the market. There have been instances of investors trying to beat the system, by taking undue advantage of market information to time their sale or re-purchase transaction with the scheme. Therefore, SEBI has linked the price applicable for a transaction to its timing as follows:

Scheme Type	Transaction	Cut-off Time	Applicable NAV
Liquid (if funds are available for utilisation on same day)	Sale	Received upto 12 noon	Closing NAV of Day immediately preceding the date of application
Liquid (if funds are available for utilisation on same day)	Sale	Received after 12 noon	Closing NAV of Day preceding next business day
Liquid (if funds are NOT available for utilisation on same day)	Sale	Received any time during the day	Closing NAV of Day preceding the day on which funds are available for utilization

Scheme Type	Transaction	Cut-off Time	Applicable NAV
Liquid Schemes	Re-purchase	Received before 3 pm	Closing NAV of Day preceding next business day
Liquid Schemes	Re-purchase	Received after 3 pm	Closing NAV of next business day
Schemes other than Liquid Schemes (investment of Rs1crore or above)	Sale	Received any time during the day	Closing NAV of day funds are available for utilisation
Schemes other than Liquid Schemes (investment upto Rs1crore)	Sale	Application received upto 3 pm with local cheque / DD	Closing NAV of date application is received
Schemes other than Liquid Schemes (investment upto Rs1crore)	Sale	Application received after 3 pm with local cheque / DD	Closing NAV of next business day
Schemes other than Liquid Schemes (investment upto Rs1crore)	Sale	Application received with outstation cheque / DD (irrespective of time)	Closing NAV of day the cheque / DD is credited in the bank account
Schemes other than Liquid Schemes	Re-purchase	Application received upto 3 pm	Closing NAV of same day
Schemes other than Liquid Schemes	Re-purchase	Application received after 3 pm	Closing NAV of next business day

These cut-off timings are applicable to investors in any mutual fund in India.

Chapter 17: MF Evaluation-Return & Risk Metrics

17.1 Measuring Returns

An investor, who has invested money in a mutual fund would like to know what return the investment has yielded. Various dimensions of returns are discussed below:

17.1.1 Point to Point Returns / Simple Returns

Suppose the NAV of the scheme went up from Rs. 10 to Rs. 14 during the period January 1, 2010 to March 31, 2010.

Let us denote the first NAV, NAV_1 = Rs. 10

Let us denote the second NAV, NAV_2 = Rs. 14

The return is essentially the gain in NAV viz. Rs. 14 minus Rs. 10 i.e. Rs. 4.

This has been earned on a base investment, I = Rs. 10.

The return, in percentage terms is (Rs. 4 ÷ Rs. 10) X 100 i.e. 40%

The point to point return from January 1, 2010 to March 31, 2010 was 40%.

The formula can be written as PPR = {(NAV2 – NAV1) ÷ NAV1} X 100

17.1.2 Annualised Returns

The point-to-point return calculated above, related to a 3 month period. How much is the return in annualized terms?

This can be calculated as (40% ÷ 3) X 12 i.e. 160%

The return can be calculated more precisely, using number of days. Let us say, 'n' represents the number of days from January 1, 2010 to March 31, 2010. Here, n = 30 + 28 + 31 i.e. 79 days. The actual number of days in a year is 365 days.

The annualized returns would thus be 40% X 365 / 79 i.e. 184.81%.

The formula can be written as AR = PPR X 365 ÷ n

17.1.3 Compounded Returns

Annualising returns, as indicated above, would hold good only for short time periods. SEBI allows mutual funds to annualize returns if the two NAVs relate to a period of less than a year. If the period is longer than a year, annualized returns give a misleading picture, because the effect of compounding is lost. In such cases, Compounded Returns (CR) is to be calculated using the formula

$CR = 100 \text{ X } \{(NAV_2 \div NAV_1)^{(1 \div r)}\}\text{-}1$

'r' refers to the number of days, expressed in years i.e. r = n ÷ 365.

In the above case, r = 79 ÷ 365.

The exponential portion in the formula is (1 ÷ r) i.e. 365 ÷ 79

Thus, CR = 100 X $\{(14 \div 10)^{(365 \div 79)}\} - 1$ i.e. 297.46%

[For ease of readers, the same example has been continued. Technically, compounding is to be done only when the time period (r) is more than a year. Since 'r' here is less than 1, annualized returns would be more appropriate]

17.1.4 Compounded Annual Growth Rate (CAGR)

Suppose the above scheme were to pay a dividend of Rs1 to investors. Since Rs1 would go out of the scheme's bank account to the investor's bank account, the NAV would go down by Rs. 1 to Rs. 13. This reduced NAV, after payment of a dividend, is called ex-dividend NAV.

The point-to-point return, after the payment of dividend, amounts to {(Rs. 13 – Rs. 10) ÷ Rs. 10} X 100 i.e. 30%. This is lower than the 40% calculated earlier. Thus, the dividend payment is vitiating the calculations of point-to-point return. Dividend payments would similarly vitiate the calculations of annualized returns and compounded returns.

Therefore, the point to note is that PPR, AR and CR calculated above are valid only if the scheme does not declare a dividend. This is the reason analysts prefer to work with NAVs of the growth option of a scheme (As seen in Chapter [13], dividend is not declared in a growth option).

CAGR is a powerful method of calculating returns that captures the impact of compounding as well as regular dividend payments. A fundamental assumption that the CAGR technique makes is that dividends are re-invested in the same scheme, at the ex-dividend NAV.

In the above example, suppose the investor had 1300 units. A dividend of Rs1 per unit would yield him Rs. 1,300. If this were to be re-invested at the ex-dividend NAV of Rs. 13, he would get Rs. 1,300 ÷ Rs. 13 i.e. 100 additional units. Thus, the investor's unit-holding goes up to 1,400.

If the scheme declared no further dividend, and the NAV on March 31, 2011 is Rs. 20, what would be the CAGR?

Investor started with investment in the scheme, I_1 of 1300 units X Rs. 10 i.e. Rs. 13,000, on January 1, 2010

Investor's wealth on March 31, 2011, I_2 would be 1400 units X Rs20 i.e. Rs. 28,000

The time period, n = 454.

Therefore, 'r' is 454 ÷ 365. (1÷r) = 365 ÷ 454.

CAGR can be calculated, using the compound interest formula, as

CAGR = 100 X $\{(I_2 \div I_1)^{(1 \div r)}\}$-1

i.e. 100 X $\{(28000 \div 13000)^{(365 \div 454)}\}$ - 1

i.e. 85.31%

Thus, CAGR again uses the compounded returns formula. However, this is applied after the impact of dividend is captured through re-investment of the dividend to acquire additional units at the ex-dividend NAV.

17.2 SEBI's Disclosure Norms on Returns

The scheme returns which are used in offer documents, advertisements etc. need to comply with the following:

- If the time period of the return is less than a year, then simple returns is to be used. An asterisk (*) can be shown against the return, with a clarification on the period for which the return relates. In the above case, it would be shown as:

  40%*

  * Return relates to period January 1, 2010 to March 31, 2010
- Only in the case of liquid schemes, if the time period of the return is less than a year, then annualized return can be used, so long as it does not give a misleading picture. In the above case, if it were a liquid scheme, the annualized yield of 184.81% is unusually high and obviously misleading. However, as an illustration, it would be shown as:

  184.81%*

  * Annualised yield
- If the time period of the return is more than a year, then CAGR is to be used.
- No return should be promised, unless it is an assured return schemes, were a guarantor is prepared to write a cheque to make up the shortfall, if the scheme earns a lower return.

17.3 Absolute & Relative Returns

In all the above cases, returns of the scheme were viewed in isolation. These are *absolute returns* of the scheme concerned.

When the returns of the scheme are compared with its benchmark, it is called *relative returns.*

Every scheme has a benchmark – an index with which its performance can be compared. The benchmark index, which depends on the nature of investments proposed in the scheme, is disclosed in the offer document. For example,

- A diversified equity scheme investing in large corporates may opt for S&P CNX Nifty as the benchmark. A diversified equity scheme which intends to invest beyond the large corporates, may go for CNX 100 or S&P CNX 500. An equity scheme that proposes to invest in mid-cap companies may choose CNX Midcap 100 or S&P CNX 500.
- Similarly, the debt market offers various index options, depending on the nature of investments and their maturity. NSE's MIBOR (Mumbai Inter-Bank Offered Rate) is commonly used as benchmark for liquid schemes.

Relative returns are extensively used in risk-adjusted returns calculations, discussed later in this chapter.

17.4 Measuring Risk

Some of the commonly used measures of risk are as follows:

17.4.1 Standard Deviation

In layman's language, this is the extent to which the scheme returns deviate from its own past standards. This can be easily calculated using the MS Excel (or any spreadsheet) function 'STDEV' as follows:

- Enter a series of regular historical returns for a scheme, in a set of continuous cells. The regularity may be daily, weekly, monthly etc.
- In a different cell enter '=stdev' and then select the range of cells where the regular historical returns are entered. If the range of cells is C1 to C30, the formula in the cell would be entered as '=stdev(C1:C30)'. The value that is returned in the cell is the standard deviation.

A high standard deviation would mean that the scheme deviates more from its past standard i.e it is more risky.

17.4.2 Variance

The concept is similar to standard deviation, and is used in some advanced calculations related to portfolio management.

Variation is calculated as the square of standard deviation. It can also be determined by replacing '=var' for 'stdev' in the above example.

As with standard deviation, a high value of variance means that the scheme is more risky.

17.4.3 Beta

Both standard deviation and variance consider a scheme's return with its own past standard, to measure risk. The two measures can be used for debt as well as equity schemes.

An alternate approach to measure equity risk is based on CAPM, discussed in Chapter [1]. We saw that there are two risks in investing in equity:

- *Systematic risk* (β) is inherent to equity investments e.g. the risk arising out of political turbulence, inflation etc. It would affect all equities, and therefore cannot be avoided.
- *Non-systematic* risk is unique to a company e.g. risk that a key pharma compound will not be approved, or the risk that a high performing CEO leaves the company. Non-systematic risk can be minimized by holding a diversified portfolio of investments.

Since investors can diversify away their non-systematic risks, they have to be compensated only for systematic risk.

Calculation of beta of a scheme is similar to the calculation of beta of a share as discussed earlier. Instead of share price, NAV of the growth option of the scheme would be used for the calculations.

If the beta is more than 1, it means that the scheme is more risky than the market. A value of beta that is less than 1 would mean that the scheme is less risky than the market. Since index schemes mirror the portfolio of their benchmark index, their risks are expected to be similar. Therefore, beta of an index scheme would be close to 1.

17.4.4 Weighted Average Maturity

As seen in Chapter [8], value of debt securities have an inverse relation to interest rates. As interest rates in the market go up, value of debt securities go down, and vice versa. This is often referred to as the *price risk* or *interest risk* in a debt security

Longer the tenor of a debt security, more would be the fluctuation in its value. Therefore, the maturity of a scheme's debt portfolio can be studied to understand its price risk.

If 40% of a scheme's portfolio is in 10 year security, and balance 60% is in 7 year security, then the weighted average maturity can be calculated as (40% X 10) + (60% X 7) i.e. 8.2 years.

Higher the portfolio maturity, more the price risk in the scheme.

17.4.5 Modified Duration

The weighted average maturity is a crude measure of price risk that is easier to comprehend for lay investors. Debt market analysts use *modified duration* of the scheme's portfolio to assess its price risk. Modified duration of 1.3 years would mean that a 1% change (up or down) in the interest rates in the market would lead to a 1.3% change (down or up) in the value of the debt portfolio, and therefore the scheme's NAV.

17.5 Risk Adjusted Returns

Investors need to take investment decisions, after considering both risk and return. A few metrics of risk-adjusted returns are illustrated below:

17.5.1 Sharpe Ratio

Suppose an investor earned 12% return from a scheme, whose standard deviation is 0.5.

Further, let us say that a risk-free return of 7% would have been possible, if the same money was invested with the government.

Thus, by investing in the scheme, the investor earned a return that was higher by 12% *minus* 7% i.e. 5%. This is his *risk premium*, a premium earned for the risk taken.

If the risk premium of 5% is divided by the standard deviation of 0.5, we get a value of 10%. This indicates that for every unit of risk taken (as measured by standard deviation), the investor earned a return of 10%. This is the *Sharpe Ratio*. It is calculated as (Scheme Return *minus* Risk free Return) ÷ Standard Deviation of the Scheme.

In a comparision of two schemes of the same type, the one with the higher Sharpe Ratio is considered to have delivered superior risk-adjusted returns.

Sharpe Ratio can be used for debt schemes as well as equity schemes.

17.5.2 Treynor Ratio

Treynor ratio uses beta, instead of standard deviation, as a measure of risk. It is calculated as (Scheme Return *minus* Risk free Return) ÷ Beta of the Scheme.

In the above example, if Beta of the scheme was 1.25, then Treynor Ratio would be 5% ÷1.25 i.e. 4%.

This means that for every unit of risk taken (as measured by beta), the investor earned a return of 4%.

In a comparision of two diversified equity schemes, the one with the higher Treynor Ratio is considered to have delivered superior risk-adjusted returns.

Treynor Ratio is to be used only for evaluating diversified equity schemes.

17.5.3 Alpha

Alpha is a measure of the fund manager's performance.

In the process of managing a non-index scheme, the fund manager may take a risk (as measured by beta) that is different from the market risk; the scheme returns too are likely to be different from the market.

Logically, if the fund manager took a higher risk than the market, he ought to deliver a return that is higher than the market. Alpha compares the return which ought to have been generated (for the risk taken) by the scheme with the return that was actually generated. The difference between the two is *out-performance* (if actual return is higher) or *under-performance* (if actual return is lower).

Between two fund managers of competing diversified equity schemes, the one with higher alpha is considered to have delivered better risk adjusted returns.

The concept of alpha is technically correct, only for diversified equity schemes.

17.6 Applying the metrics

The metrics discussed so far are to be applied for evaluating schemes of the same type.

The logical flow would therefore be to first decide whether a scheme type is suitable for an investor (based on its inherent risks). Thereafter, the metrics can be used to decide which of the schemes of the same type offer a better risk-adjusted return.

It would be wrong, for instance, to draw conclusions by comparing the Sharpe Ratios of a diversified equity scheme and a liquid fund.

Further, choosing schemes has an underlying science in the metrics – but there is also an art in engaging the human element of the investor, and also understanding aspects of schemes that go beyond numbers. Good professionals combine the science and art in their approach to mutual funds.

Chapter 18: Mf Evaluation–Qualitative Approaches

Various types of mutual fund schemes were discussed earlier. Quantitative approaches on evaluating them on the risk-return matrix were also discussed. Some other aspects that go into evaluation of mutual fund schemes are discussed below:

18.1 Generic Risk of Mutual Fund Scheme Categories

Every mutual fund scheme is unique in its risk-return proposition. Therefore, the investment objective, philosophy, strategy and portfolio of schemes need to be closely studied, before forming any opinions.

The generic risk levels of different types of mutual fund schemes are as follows:

- Debt schemes are seen as safer than equity schemes. Debt securities at least have a maturity date, on which the company is expected to repay the principal amount. Equities do not offer such a comfort; recovery of moneys from equity investments is therefore entirely exposed to market risk. Hybrid schemes, which invest in a mix of debt and equity, are seen as more risky than pure debt schemes, but less risky than pure equity schemes.
- Amongst debt schemes, money market / liquid schemes are least risky because they only invest in short term debt securities. As seen previously, lower the duration of the portfolio, lesser the fluctuation in its value (and consequently the NAV) when interest rates in the market change.
- Gilt Funds invest only in government securities (which are the safest form of debt investment, from a credit risk point of view). Yet, their NAV can fluctuate significantly, depending on the portfolio maturity. This price risk in the portfolio is the reason Gilt funds are viewed as more risky than liquid schemes.
- Exposure to non-government corporate securities (which have a credit risk) contributes to the higher risk in diversified debt funds.
- High yield funds (also called *junk bond schemes)* are highest in risk among debt funds because of their investment philosophy viz. they invest in debt securities that offer superior yield (which is generally paid by companies of inferior credit quality). Therefore, the portfolio of high-yield funds suffers a high degree of credit risk.
- Amongst equities, some companies have relatively stable and profitable operations. The shares of such companies fluctuate less, yet they offer an attractive dividend yield. They are therefore called *income stocks*. High weightage of such equities in the portfolio of equity income / dividend yield funds contributes to their low risk among equity schemes.

- The relatively low risk of value funds comes out of their value investment philosophy viz. invest in equities of under-valued companies (that are available at relatively low valuations) and hold on to them for a longer term. The downside risk in such equities is therefore relatively less; in a portfolio of such equities (also called *value stocks)*, the few that perform will generate very high returns, which will make up for some investments in the portfolio that may not perform.
- Unlike income stocks and value stocks, *growth stocks* are equities of companies that are fast growing. These are generally available in the market at high P/E ratios. In a market decline, they also suffer large falls.

  Index funds mirror an index. Different indices have varying weightages to higher risk growth stocks. The element of higher risk equities makes index funds riskier than value funds.
- The portfolio of diversified equity funds is determined by a fund manager. There is a risk of poor stock selection by the fund manager. Therefore, diversified equity funds are riskier than index funds.
- Growth funds have large exposure to higher risk growth stocks. This contributes to the high risk of such funds.
- Sector funds invest in only one sector – unlike diversified equity funds which invest in multiple sectors. A benefit of investing in multiple sectors is that some may perform well, and make up for some others that may not perform well. The risk in a sector fund is that if that specific sector runs into trouble, then the fund performance will be severely affected. Therefore, sector funds are viewed as highest risk among equity funds.
- The inherent risk in different kinds of debt securities and equities has been discussed. The risk in hybrid funds depends on the extent and kind of debt and equity securities they invest in. A few nuances:
  - When a scheme talks of capital protection, consider the basis for that capital protection. Is it backed by government securities? If not, there is a credit risk; in that case, you need to be cautious about the capital protection statement.
  - If the scheme invests in government securities that would mature along with the scheme, then both credit risk and price risk are controlled. This makes the scheme relatively safe. *Fixed Maturity Plans (FMPs)* based on government securities are therefore low risk.

    Fixed maturity plans can also be constructed on a portfolio of non-government securities. The resulting credit risk may be further accentuated through large exposures to a single sector. Such Fixed Maturity Plans are obviously risky to invest in.
  - Monthly Income Plans (MIPs) have an element of equity exposure, which contributes

to the risk. If the market falls significantly, the mutual fund will not have the profits to pay a dividend. Therefore, the *monthly income* in an MIP needs to be viewed with caution – the monthly income is not guaranteed.

- o Flexible asset allocation funds give large flexibility to fund managers to switch their positions between equity and debt. Therefore, an investor can never be sure about the debt-equity mix in such schemes. Poor calls by the fund manager can have a large adverse effect on the scheme performance. Therefore, these are seen as the highest in risk among hybrid funds.

18.2 Other Evaluative Factors affecting Mutual Fund Schemes

- **Expense Ratio**

  Expenses are a drag on the performance of the scheme. For the same portfolio performance, the scheme with the lower expense ratio will offer better returns for the investor.

  Expense ratios are particularly important, for debt schemes (where returns in the underlying market are generally low) and index schemes (where the fund manager's role in any case is limited).

- **Tracking Error**

  An index scheme is expected to deliver the same return as the index it is tracking. The difference between the two returns (positive or negative) is the *tracking error*. The best index scheme is the one with the lowest tracking error.

- **Regular Income in Yield**

  The returns in a scheme have two components – capital gains (which are dependent on market movements and can fluctuate significantly between years) and regular income (dividend or interest income, whose flow tends to be more stable). Higher the regular income component in the yield of a scheme, more safe it is likely to be for the investor.

- **Scheme size**

  Small scheme size can push up the expense ratio, because the economies of scale do not become available. On the other hand, the scheme size should not be so large as to become unwieldy to manage. The size also needs to be seen in the context of its investment universe (which is determined by its investment philosophy). A narrow investment philosophy tends to restrict the investment universe. In that case, a large scheme will find itself investing in sub-optimal investments.

- **Age of Scheme**

  An older scheme gives you an opportunity to judge its historical performance. Further, based on its history, it can attract investments and gain economies of scale more easily. Finally, the investment manager too is under pressure to protect the scheme's brand equity.

- **Portfolio Turnover**

  This is measured as the value of transactions (purchase and sale of investments in the scheme portfolio) during a period, divided by its average size during the period. For example, if the transactions were Rs. 1,000 crores and average size of the scheme was Rs. 800 crores, then it has turned its portfolio over Rs. 1,000 crores ÷ Rs. 800 crores i.e. 1.25 times.

  A value based investment style calls for longer holding of investments. This would translate to a low portfolio turnover. On the other hand, an arbitrage scheme that seeks to continuously take the benefit of short term pricing mismatches in the market may have a higher portfolio turnover.

  The point to remember is that high portfolio turnover means higher transaction costs. Investor needs to be cautious if he sees a fund manager repeatedly changing his position, without a clear underlying logic.

- **Investor Mix**

  Investors in an open-end scheme can offer their units for re-purchase any time. When that happens, the fund manager needs to sell investments in the market to generate the liquidity to pay back the investor.

  If a few large investors represent a significant proportion of the unit capital of the scheme, then the fund manager's investment performance can get disrupted by excessive transactions driven by liquidity needs, rather than fundamental investment logic.

  On the other hand, a scheme with a large retail investor base is unlikely to see a scenario where a few large investors disrupt the portfolio management in the scheme.

Chapter 19: Mutual Funds - Taxation

The mutual fund trust is exempt from tax. However, the trustee company and AMC pay tax, like any other company.

Despite the exemption to the mutual fund trust, investors in mutual fund schemes are impacted by income tax as follows:

19.1 Securities Transaction Tax (STT)

This is applicable to equities and equity-oriented funds, but not to debt and debt-oriented funds.

- STT on equity-oriented schemes of mutual funds

On scheme's purchase of equity shares in the stock exchange	0.125%
On scheme's sale of equity shares in stock exchange	0.125%
On scheme's sale of futures & options in stock exchange	0.017%

- STT on investors in equity oriented schemes of mutual fund

On investor's purchase of the units in stock exchange	0.125%
On investor's sale of the units in stock exchange	0.125%
On re-purchase of investor's units by the AMC	0.250%

Note: An *equity-oriented fund* is a fund that invests at least 65% of its corpus in equities of domestic companies.

19.2 Capital Gains

The difference between the selling price (of sale in the stock exchange or as re-purchase of units by the scheme) and buying price of an investment is treated as a *capital gain* (or *capital loss*, if the selling price is lower).

Since the mutual fund is exempt from tax, the scheme does not pay a tax on its capital gains. However, investors are liable to be taxed on their capital gains, as follows:

19.2.1 Equity-Oriented Schemes

If the investor has held on to the units for more than a year, and has incurred STT on the sale transaction, then the capital gains are exempt from tax.

If the investor has held on to the units for upto a year, and has incurred STT on the sale transaction, then the capital gains are taxed as short term capital gains at 15% plus surcharge plus education cess.

For example, if 100 units were bought at Rs. 20 and sold at Rs. 25, capital gains tax would be payable on Rs. 5 X 100 units i.e. Rs. 500 at 15% plus surcharge plus education cess. Thus, the capital gains tax would be Rs. 75 plus surcharge plus education cess.

If STT is not incurred on the sale transaction, then, irrespective of the period of holding of the units, the capital gains taxability is the same as for debt-oriented schemes.

19.2.2 Debt-Oriented Schemes

As seen earlier, there is no incidence of STT on such schemes. Taxability, therefore, only depends on the period of holding.

- If the units are held for more than a year, it is treated as long term capital gains. The investor can choose between the following:
  - 10% plus surcharge plus education cess

    For example, if 100 units were bought at Rs. 20 and sold at Rs. 25, capital gains tax would be payable on Rs. 5 X 100 units i.e. Rs. 500 at 10% plus surcharge plus education cess. Thus, the capital gains tax, under this method, would be Rs. 50 plus surcharge plus education cess.
  - 20% plus surcharge plus education cess on capital gains that are reduced to the extent of *indexation*.

    Indexation is a facility given to the investor to adjust the acquisition cost of his investment to the extent of inflation. Suppose the government declares an inflation index of 500 for the financial year in which the investment is acquired, and 550 for the financial year in which the investment is sold. This amounts to an inflation of 10%.

In the above example, the adjusted acquisition cost would therefore become Rs. 20 + 10% i.e. Rs. 22. Long term capital gains would be Rs. 25 minus Rs. 22 i.e. Rs. 3 per unit.

Capital gains tax would be payable on Rs3 X 100 units i.e. Rs. 300 at 20% plus surcharge plus education cess. Thus, the capital gains tax, under this method, would be Rs. 60 plus surcharge plus education cess.

The investor will opt for the first method, where the tax is lower.

If the units are held for upto a year, it is treated as short term capital gains. The gain will be added to the income of the investor. Thus, taxation would depend on the marginal rate of taxation of the investor (nil or 10% or 20% or 30% plus surcharge plus education cess). The exact rate would depend on the level of his other income.

19.3 Additional Tax on Income Distributed

This is applicable only on dividend distributed by debt-oriented schemes. Thus, ex-dividend NAV would decline to the extent of dividend distributed, plus the tax on the dividend distributed.

The applicable rate is 25% plus surcharge plus education cess, for liquid schemes.

In other debt funds, investors who are individuals or HUFs bear the tax at 12.5% plus surcharge plus education cess on the dividend distributed. For other investors, the tax is higher at 20% plus surcharge plus education cess.

19.4 Tax Deducted at Source (TDS)

There is no TDS on dividend or re-purchase amount for resident investors.

Non-resident investors might have to bear *withholding tax*, which will reduce the amount they receive from the scheme as dividend or re-purchase amounts. They can however take the benefit of Double Taxation Avoidance Agreements, if India has signed such an agreement with the country of their residence.

Chapter 20: Mutual Fund - Information Sources

20.1 SID, SAI & KIM

The SID, SAI and KIM, discussed in Chapter [14], are available on the websites of the AMC and AMFI (www.amfiindia.com). It is advisable for students to read a sample of each document.

These documents are an invaluable source of information to help an investor take investment decisions. On an ongoing basis, these are updated, as follows:

- SID
  - If the scheme is launched in the first six months of the financial year (say, September 2010), then the first update is due within 3 months of the end of the same financial year (i.e. June 2011)
  - If the scheme is launched in the second six months of the financial year (say, October 2010), then the first update is due within 3 months of the end of the next financial year (i.e. June 2012)
  - After the first update, the scheme has to be updated every year.
  - If the fundamental attributes of the scheme are changed, SEBI requires that investors are given an option to get back the full value of their investment and exit the scheme. SID has to be updated immediately after the time period for exit has lapsed.
  - Until the revised SID is printed, any changes need to be printed in a separate piece of paper (called *addenda)* and attached to the SID. Besides, the change needs to be advertised in an English newspaper, and regional newspaper of the state where the head office of the mutual fund is located. Further, it has to be mentioned in the website of the AMC.
- SAI
  - This is to be updated within 3 months of the end of each financial year.
  - Further, on an ongoing basis, material changes need to be updated. Revised SAI is to be uploaded in the websites of the AMC and AMFI.
- KIM
  - This is to be updated at least once, every financial year.
  - The requirements regarding change in fundamental attributes and addenda are the same as for SID.

20.2 Fact Sheets

AMCs have a practice of generating daily fact sheets that disclose the NAV of all schemes of the mutual fund, and any other key developments during the day. Investors can register to

receive this every day, by e-mail. Some AMCs also offer the fax polling facility, where a person can call from a fax machine and trigger a fax of the fact sheet on the caller's fax machine.

20.3 Fund Account Statements

This provides information to the investor regarding the transactions of the investor with the mutual fund during the statement period. Further, the number of units held at the end of the period, and their value is also disclosed.

20.4 Annual Report and Portfolio Statements

Schemewise Annual Report or an abridged summary is to be mailed to all Unit-holders within 6 months of the close of the financial year.

The complete statement of the scheme portfolio and the unaudited financial results, are to be published within 1 month from the close of each half year. The advertisement has to appear in one National English daily, and one newspaper published in the language of the region where the head office of the mutual fund is situated.

In lieu of the advertisement, the mutual fund may choose to send the portfolio statement to all Unit-holders.

Debt-oriented, close-ended / interval, schemes /plans need to disclose their portfolio in their website every month, by the 3rd working day of the succeeding month.

For equity, although the statutory requirement of portfolio disclosure is once in 6 months, most AMCs disclose the portfolio every month, in their website.

20.5 Other Sources of Information

- The website of SEBI (www.sebi.gov.in) provides information about proposed NFOs. The SIDs filed by AMCs for the NFOs are a public document that anyone can access from the website of SEBI.
- The website of AMFI (www.amfiindia.com) provides the latest NAV of all schemes. Further, it also provides information on the scheme-wise sales, re-purchases and AUM of mutual funds.
- The website of most AMCs also provides sufficient information, including portfolio statement of the schemes at the end of each month. SID, SAI, KIM, Annual Reports etc.
- The website of large mutual fund distributors provides useful information to transact in most mutual funds.
- Several mutual fund research houses and publications provide content, as well as free tools in their website to evaluate mutual fund schemes and track their portfolio. These include Value Research (www.valueresearchonline.com), CRISIL (www.crisil.com), Morning Star (www.morningstar.com), Lipper (www.lipperweb.com), MyIris (www.myiris.com) and Credence Analytics (www.credenceanalytics.com).

Chapter 21: Mutual Funds - Investor Protection

21.1 Structural Protection

The legal structure mandated by the SEBI Regulations was discussed in Chapter [14]. There is an inherent system of checks and balances in the structure. The following are worth emphasizing:

- Trusteeship and asset management responsibilities are segregated. While the AMC manages the funds and handles other day-to-day operations, the trustees have the primary responsibility of safeguarding unit-holders' interests.
- Though separate from the AMC, the trustees are still answerable to SEBI. This two-level control over the AMC adds to the strength of the mutual fund structure.
- SEBI has been performing a proactive role in plugging gaps in the mutual fund system, so that investors are well-protected
- AMFI too performs a role in systemic improvements. Wherever required, SEBI has the powers to make the changes mandatory.
- While the AMC does the asset management, physical custody of investments is with the custodian, who needs to be an independent agency. A custodian over whom the sponsor or the AMC has control cannot be appointed. Thus, the veracity of scheme investments can be independently verified with the custodian, on an ongoing basis.
- Fundamental attributes of the scheme can be changed only after the following:
    - Written communication about the proposed change to each investor.
    - Advertisement in an English newspaper and in a regional newspaper of the state where head office of mutual fund is located.
    - 30-day window for dissenting investors to exit the scheme. Full NAV, without exit load, is to be paid to them.
    - Unit-holders holding 75% of the unit capital can pass a resolution to terminate the appointment of the AMC. (The termination will be effected only after further steps are taken).
    - Unit-holders holding 75% of the unit capital can pass a resolution to wind up the scheme.
    - If a unit-holder feels that the trustees have not performed their duty, then he can sue them for breach of trust. (The trust cannot however be sued, because, legally it is considered a *notional entity).*
    - The number of investor complaints and the servicing history has to be disclosed in the offer documents of the schemes.

21.2 Time-Standards

SEBI has imposed strict time-standards for the normal activities of the investor. These include:

Activity	Requirement
Allotment of Units / Refund of money to investor (for schemes other than ELSS)	Within 5 business days of closure of NFO
Re-opening for ongoing sale / re-purchase (for open-ended schemes, other than ELSS)	Within 5 business days of closure of NFO
Statement of accounts to investors: • In NFO	Within 5 business days of closure of NFO
• Post-NFO	Within 10 working days of transaction
• SIP / SWP / STP	Within 10 working days of every quarter (March, June, September, December)
• Specific requests by investors	Within 10 working days of request
• If soft copy is requested by investor	Monthly
Dividend warrants *(AMC to pay interest for delays at 15% p.a.)*	Within 30 business days of dividend declaration
Re-purchase proceeds *(AMC to pay interest for delays at 15% p.a.)*	Within 10 working days from receipt of investor's request
NAV published in newspapers	Daily, in at least 2 newspapers
NAV, Sale and Re-purchase Prices in website of AMFI and the mutual fund	
• Fund of Funds	By 10 am the next day
• Other funds	By 9 pm the same day

21.3 Other Legal Considerations for Investors

- The investment of unit-holders is governed by the principle of *caveat emptor* (let the buyer beware). The investor needs to exercise care in his dealings. He cannot claim ignorance of matters that have been notified to him.
- Since the mutual fund is a trust, an investor in a mutual fund scheme does not have the protection that the Companies Act makes available for share-holders and holders of fixed deposits in companies.

(Model test paper for the module is available on the website **www.nseindia.com > 'Education' > 'Prepare for Testing' link)**

References and suggested readings

The readings suggested here are supplementary in nature and would prove to be helpful for those interested in acquiring more knowledge about securities markets.

1. www.sebi.gov.in
2. www.rbi.org.in
3. www.finmin.nic.in
4. www.nseindia.com
5. Rules, Regulations and Byelaws of NSEIL & NSCCL
6. Indian Securities Market: A Review - NSEIL publication
7. NSE Newsletters – NSEIL publication

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