

FUNDAMENTALS OF INVESTMENT

VI SEMESTER

CORE COURSE

***B Com
(Specialization - Finance)***

(2011 Admission)



UNIVERSITY OF CALICUT

SCHOOL OF DISTANCE EDUCATION

Calicut university P.O, Malappuram Kerala, India 673 635.

344

UNIVERSITY OF CALICUT
SCHOOL OF DISTANCE EDUCATION

STUDY MATERIAL

Core Course

B Com (*Specialization - Finance*)

VI Semester

FUNDAMENTALS OF INVESTMENT

Prepared by: Chapter 1 & 4 Smt. Greeshma. V,
Asst. Professor,
P.G Dept. of Commerce,
Govt. College, Malappuram

Chapter 2, 3, & 5 Mr. Sanesh. C,
Asst. Professor,
Dept. of Commerce,
Sri Vyasa NSS College,
Wadakkanchery, Thrissur.

Scrutinized by: Dr. K. Venugopalan,
Associate Professor,
Department of Commerce,
Govt. College, Madappally.

Layout: Computer Section, SDE

©
Reserved

<u>Contents</u>	<u>Page No.</u>
CHAPTER 1 INVESTMENT ENVIRONMENT	5
CHAPTER 2 FIXED INCOME SECURITIES	19
CHAPTER 3 APPROACH TO SECURITY ANALYSIS	29
CHAPTER 4 PORTFOLIO ANALYSIS AND FINANCIAL DERIVATIVES	54
CHAPTER 5 INVESTOR PROTECTION	69

CHAPTER 1

INVESTMENT ENVIRONMENT

The income that a person receives may be used for purchasing goods and services that he currently requires or it may be saved for purchasing goods and services that he may require in the future. In other words, income can be what is spent for current consumption. Savings are generated when a person or organization abstains from present consumption for a future use. The person saving a part of his income tries to find a temporary repository for his savings until they are required to finance his future expenditure. This results in investment.

Meaning of investment

Investment is an activity that is engaged in by people who have savings, i.e. investments are made from savings, or in other words, people invest their savings. But all savers are not investors. Investment is an activity which is different from saving. Let us see what is meant by investment.

It may mean many things to many persons. If one person has advanced some money to another, he may consider his loan as an investment. He expects to get back the money along with interest at a future date. Another person may have purchased one kilogram of gold for the purpose of price appreciation and may consider it as an investment.

In all these cases it can be seen that investment involves employment of funds with the main aim of achieving additional income or growth in the values. The essential quality of an investment is that it involves something for reward. Investment involves the commitment of resources which have been saved in the hope that some benefits will accrue in the future.

Thus investment may be defined as “a commitment of funds made in the expectation of some positive rate of return “since the return is expected to realize in the future, there is a possibility that the return actually realized is lower than the return expected to be realized. This possibility of variation in the actual return is known as investment risk. Thus every investment involves return and risk.

F. Amling defines investment as “purchase of financial assets that produces a yield that is proportionate to the risk assumed over some future investment period.”

According to Sharpe, “investment is sacrifice of certain present value for some uncertain future values”.

Investment decision process

Investing has been an activity confined to the rich and business class in the past. But today, we find that investment has become a house hold word and is very popular with people from all walks of life .India appears to be slowly but surely closing in some of the top savers among countries in the global peaking order. savings in Indians touched a new high of 31percent of the GDP during2011-2012.chain leads the pack of savers with the saving figure at close to 49 percent of GDP followed by other emerging market economies like Bangladesh 36 percent, Bhutan 48 percent of their GDP. The escalating cost due to ,inflation are decreasing the value of saved money with each passing year .consider the cost buying a home ,of getting admitted in a hospital or paying for the higher education of a child. One's life's savings could vanish in a blink. Knowledgeable investing requires the investing to be aware of his needs the amount of money he can invest and the investment options available to him .These will relate to the investment decision process. A typical investment decision goes through a five step procedure which is known as investment process these steps are:

1. Defining the investment objective
2. Analyzing securities
3. Construct a portfolio
4. Evaluate the performance of portfolio
5. Review the portfolio

1. Defining the investment objective

Investment objective may vary from person to person .it should be stated in terms of both risk and return .In other words ,the objective of an investor is to make money accepting the fact of risks that likely to happen .The typical objectives of investor include the current income ,capital appreciation, and safety of principal. More over constrains arising due to liquidity, the time horizon, tax and other special circumstances, if any must also be considered this steps of investment process also identifies the potential financial assets that may be included in the portfolio based on the investment objectives.

2. Analyzing securities

The second steps of analyzing securities enable the investor to distinguish between underpriced and overpriced stock. Return can be maximized by investing in stocks which are currently underpriced but have the potential to increase .it might be useful to remember the golden principle of investment; buy low sell high. There are two approaches used for analyzing securities ;technical analysis and fundamental analysis.

3. Construct a portfolio

The actual construction of portfolio, which can be divided into three sub parts.

- a) How to allocate the portfolio across different asset classes such as equities, fixed income securities and real assets
- b) The assets selection decision, this is the step where the stocks make up the equity component, the bonds that make up the fixed income component.
- c) The final component is execution, where the portfolio is actually put together, where investors have to trade off transaction cost against transaction speed.

4. Evaluate the performance of portfolio

The performance evaluation of the portfolio done on the in terms of risk and return. Evaluation measures are to be developed .CAGR(compounded annual growth rate) may be one criteria. Hindustan unilever gave a CAGR of 21 percent in returns to the shareholders for the last 13 years.

5. Review the portfolio

It involves the periodic repetition of the above steps. The investment objective of an investor may change overtime and the current portfolio may no longer be optimal for him. so the investor may form a new portfolio by selling certain securities and purchasing others that are not held in the current portfolio.

Types of Investments

Nonnegotiable securities

Deposits earn fixed rate of return. Even though bank deposits resemble fixed income securities they are not negotiable instruments. Some of the deposits are dealt subsequently.

a) Bank deposits

It is the simplest investment avenue open for the investors. He has to open an account and deposit the money. Traditionally the banks offered current account, Saving account and fixed deposits account. Current account does not offer any interest rate. The drawback of having large amount in saving accounts is that the return is just 4 percent. The saving account is more liquid and convenient to handle. The fixed account carries high interest rate and the money is locked up for a fixed period. With increasing competition among the banks, the banks have handled the plain saving account with the fixed account to cater to the needs of the small savers.

b) Post office deposits

Post office also offers fixed deposit facility and monthly income scheme. monthly income scheme is a popular scheme for the retired . an interest rate of 9 percent is paid monthly .the term of the scheme is 6 years, at the end of which a bonus of 10 percent is paid .the annualized yield to maturity works out to be 15.01 per annum. after three years, premature closure is allowed without any penalty .if the closure is one year, a penalty of 5 percent is charged.

NBFC deposits

In recent years there has been a significant increase in the importance of non-banking financial companies in the process of financial intermediation. The NBFC come under the purview of the RBI. The Act in January 1997, made registration compulsory for the NBFCs

- 1) Period the period ranges from few months to five years.
- 2) Maximum limit the limit for acceptance of deposit has been on the credit rating of the company.
- 3)Interest NBFCs have been debarred from offering an interest rate exceeding 16% per annum and a brokerage fee over 2% on public deposit. The interest rate differs according to maturity period.

Tax sheltered saving scheme

The important tax sheltered saving scheme is

a) public provident fund scheme(PPF)

PPF earn an interest rate of 8.5% per annum compounded annually. Which is exempted from the income tax under sec80 C.The individuals and Hindu undivided families can participate in this scheme. There is a lock in period of 15years.PPF is not indented for those who are liquidity and short term returns. at the time of maturity no tax is to be given.

b) National saving scheme(NSS)

This scheme helps in deferring the tax payment. Individuals and HUF are eligible to open NSS account in the designated post office.

c) National saving certificate

This scheme is offered by the post office. These certificate come in the denomination of Rs.500,1000,5000 and 10000.the contribution and the interest for the first five years are covered by sec 88.the interest is cumulative at the rate of 8.5%per annum and payable biannually is covered by sec 80 L.

Life insurance

Life insurance is a contract for payment of a sum of money to the person assured on the happening of event insured against. Usually the contract provides for the payment of an amount on the date of maturity or at a specified date or if unfortunate death occurs. The major advantage of life insurance is given below;

- 1) Protection saving through life insurance guarantees full protection against risk of death of the saver. The full assured sum is paid, whereas in other schemes only the amount saved is paid.
- 2) Easy payments for the salaried people the salary saving schemes are introduced. Further there is an installment facility method of payment through monthly, quarterly, half yearly or yearly mode.
- 3) Liquidity loans can be raised on the security of the policy
- 4) Tax relief tax relief in income tax and wealth tax is available for amounts paid by way of premium for life insurance subject to the tax rates in force.

Type of life insurance policy

a) **Endowment policy;**

The objective of this policy is to provide an assured sum, both in the event of the policy holders' death or at the expiry of the policy.

b) **Term policy:**

In a term policy investor pays a small premium to insure his life for a comparatively higher value. The objective behind the scheme is not to get any amount on the expiry of the policy. But simply to ensure the financial future of the investors dependents.

c) **Whole life policy**

It is a low cost insurance plan where the sum assured is payable on the death of the life insured and premium are payable throughout life.

d) **Money back policy**

The insurance company pays the sum assured at periodical intervals to the policy holder plus the entire sum assured to the beneficiaries in case of the policy holders demise before maturity.

e) **ULIPs:**

Unit Linked Insurance Policies are a combination of mutual fund and life insurance. Investments in ULIPs have two component-one part is used as a premium for life insurance while the other part acts as the investment fund.

The investment component works exactly like mutual fund money is invested in stocks, bonds; government securities etc., an investor receive money in return.

Mutual fund

Investing directly in equity shares, and debt instruments may be difficult task for a large number of customers because they want to know more about the company, promoter, prospects, competition for the product etc.in such a case, investor can go for investing in financial assets indirectly through mutual fund. A mutual fund is a trust that pools the savings of a number of investors who share a common financial goal. Each scheme of a mutual fund can have different character and objectives.

Types of return

- **Capital appreciation:** an increase in the value of the units of the fund is known as capital appreciation
- **Dividend distribution:** the profit earned by the fund is distributed among unit holders in the form of dividends.

Type of mutual funds

➤ **Open ended schemes:**

In this scheme there is an uninterrupted entry and exist into the funds. The open ended scheme has no maturity period and they are not listed in the stock exchanges. The open ended fund provides liquidity to the investors since repurchase available.

➤ **Closed ended funds:**

The closed ended funds have a fixed maturity period. The first time investments are made when the close ended scheme is kept open for a limited period. Once closed, the units are listed on a stock exchange .investors can buy and sell their units only through stock exchanges.

Other classification

- **Growth scheme:** aims to provide capital appreciation over medium to long term. Generally these funds invest their money in equities.
- **Income scheme:** aims to provide a regular return to its unit holders. Mostly these funds deploy their funds in fixed income securities.
- **Balanced scheme:** a combination of steady return as well as reasonable growth. The fund of this scheme is invested in equities and debt instruments.

- **Money market scheme:** this type of fund invests its money to money market instruments.
- **Tax saving scheme:** this type of scheme offers tax rebates to investors.
- **Index scheme:** Here investment is made on the equities of the Stock index.

Real estate

The real estate market offers a high return to the investors. The word real estate means land and buildings. There is a normal notion that the price of the real estate has increased by more than 12% over the past ten years. Real estate investments cannot be encashed quickly. Liquidity is a problem. Real estate investment involves high transaction cost. The asset must be managed, i.e. painting, repair, maintenance etc.

Commodities

Commodities have emerged as an alternative investment option now a days and investors make use of this option to hedge against spiraling inflation-commodities may be broadly divided into three. Metals, petroleum products and agricultural commodities .Metals can be divided in to precious metals and other metals. Gold and silver are the most preferred once for beating inflation.

Gold

Off all the precious metals gold is the most popular as an investment. Investors generally buy gold as a hedge against economic, political, social fiat currency crisis. Gold prices are soaring to the new highs in recent years comparing to the previous decades because whenever the signs of an economic crisis arises in the world markets may find shelter in gold as safest asset class for investors all around the world.

Silver

Yellow metal is treated as safe haven .but silver is used abundantly for industrial applications. Investment in silver has given investor, super returns than what gold has given.

Concept of risk and return

Any rational investor, before investing his or her investable wealth in the stock, analysis the risk associated with the particular stock. The actual return he receives from a stock may vary from his expected return and is expressed in the variability of return.

Risk

The dictionary meaning of risk is the possibility of loss or injury; risk the possibility of not getting the expected return. The difference between expected return and actual return is called the risk in investment. Investment situation may be high risk, medium and low risk investment

Ex ;

1. Buying government securities	low risk
2. Buying shares of an existing Profit making company	Medium risk
3. Buying shares of a new company	High risk

Types of risk

- **Systematic risk:**

The systematic risk is caused by factors external to the particular company and uncontrollable by the company. The systematic risk affects the market as a whole.

- **Unsystematic risk:**

In case of unsystematic risk the factors are specific, unique and related to the particular industry or company.

Sources of risk

- **Interest rate risk:**

Interest rate risk is the variation in the single period rates of return caused by the fluctuations in the market interest rate. Most commonly the interest rate risk affects the debt securities like bond, debentures.

- **Market risk:**

Jack clarkfrancis has defined market risk as that portion of total variability of return caused by the alternating forces of bull and bear market. This is a type of systematic risk that affects share .market price of shares move up and down consistently for some period of time.

- **Purchasing power risk**

Another type of systematic risk is the purchasing power risk .it refers to the variation in investor return caused by inflation.

- **Business risk:** Every company operates with in a particular operating environment, operating environment comprises both internal environment within the firm and external environment outside the firm. Business risk is thus a function of the operating conditions faced by a company and is the variability in operating income caused by the operating conditions of the company.

- **Financial risk**

It refers to the variability of the income to the equity capital due to the debt capital. Financial risk in a company is associated with the capital structure of the company. The debt in the capital structure creates fixed payments in the form of interest this creates more variability in the earning per share available to equity share holders .this variability of return is called financial risk and it is a type of unsystematic risk.

Return

The major objective of an investment is to earn and maximize the return. return on investment may be because of income, capital appreciation or a positive hedge against inflation .income is either interest on bonds or debenture , dividend on equity, etc

Rate of return :The rate of return on an investment for a period is calculated as follows:

$$\text{Rate of return} = \frac{\text{annual income} + (\text{ending price} - \text{beginning price})}{\text{Beginning price}}$$

Ex: Ajay brought a share of a co.for Rs.140 from the market on 1/6/2012.the co. paid dividend of Rs.8 per share .later ajay sold the share at Rs.160 on 1/6/2013.

$$\text{The rate of return} = \frac{8 + (160 - 140)}{140} \times 100 = 20\text{percent}$$

Security Market Indices

Stock market indices are the barometers of the stock market. They mirror the stock market behavior. With some 7,000 companies listed on the Bombay stock exchange, it is not possible to look at the prices of every stock to find out whether the market movement is upward or downward. The indices give a broad outline of the market movement and represent the market. Some of the stock market indices are BSE Sensex, BSE-200, Dollex, NSE-50, CRISIL-500, MCX-SX 40, Business Line 250 and RBI Indices of Ordinary Shares.

Usefulness of Indices

1. Indices help to recognize the broad trends in the market.
2. Index can be used as a bench mark for evaluating the investor's portfolio.
3. Indices function as a status report on the general economy. Impacts of the various economic policies are reflecting on the stock market.

4. The investor can use the indices to allocate funds rationally among stocks. To earn returns on par with the market returns, he can choose the stocks that reflect the market movement.
5. Index funds and futures are formulated with the help of the indices. Usually fund managers construct portfolios to emulate any one of the major stock market index. ICICI has floated ICICI index bonds. The return of the bond is linked with the index movement.
6. Technical analysts studying the historical performance of the indices predict the future movement of the stock market. The relationship between the individual stock and index predicts the individual share price movement

Computation of Stock Index

A stock market index may either be a price index or a wealth index. The unweighted price index is a simple arithmetical average of share prices with a base date. This index gives an idea about the general price movement of the constituents that reflects the entire market. In a wealth index the prices are weighted by market capitalization. In such an index, the base period values are adjusted for subsequent rights and bonus offers. This gives an idea about the real wealth created for shareholders over a period of time.

The Composition of the Stocks

The composition of the stocks in the index should reflect the market movement as well as the macroeconomic changes. The Centre for Monitoring Indian Economy maintains an index. It often changes the composition of the index so as to reflect the market movements in a better manner. Some of the scrip's traded volume may fall down and at the same time some other stock may attract the market interest should be dropped and others must be added. Only then, the index would become more representative. In 1993, sensdex dropped one company and added another. In August 1996 sensdex was thoroughly revamped. Half of the scrips were changed. The composition of the Nifty was changed in April 1996 and 1998. Crisils 500 was changed in November 1996. In October 1998 the Nifty Junior Index composition has been changed. Recognising the importance of the information technology scrips, they are included in the index.

NSE - 50 Index – (NIFTY)

NIFTY index is the security market indice of National Stock Exchange[NSE].it composes 50 leading stocks from different sectors of the listed companies in NSE.This index is built by India Index Services Product Ltd (IISL and Credit Rating Information Services of India Ltd. (CRISIL).The CRISIL has a strategic alliance with Standard and Poor rating Services. Hence, the index is named as S & P CNX Nifty. NSE - 50 index was introduced on April 22,1996 with the objectives given below :

* Reflecting market movement more accurately

* Providing fund managers a tool for measuring portfolio returns vis-market return.

* Serving as a basis for introducing index based derivatives.

Nifty replaced the earlier NSE - 100 index, which was established as an interim measure till the time the automated trading system stabilised. To make the process of building an index as interactive and user driven as possible an index committee is appointed. The composition of the committee is structured to represent stock exchanges, mutual fund managers and academicians. To reflect the dynamic changes in the capital market, the index set is reduced and modified by the index committee based on certain predetermined entry and exit criteria.

The current composition of Nifty stocks with sector given below [December 2013].

Company Name	Industry
ACC Ltd.	CEMENT & CEMENT PRODUCTS
Ambuja Cements Ltd.	CEMENT & CEMENT PRODUCTS
Asian Paints Ltd.	CONSUMER GOODS
Axis Bank Ltd.	FINANCIAL SERVICES
Bajaj Auto Ltd.	AUTOMOBILE
Bank of Baroda	FINANCIAL SERVICES
Bharat Heavy Electricals Ltd.	INDUSTRIAL MANUFACTURING
Bharat Petroleum Corporation Ltd.	ENERGY
Bharti Airtel Ltd.	TELECOM
Cairn India Ltd.	ENERGY
Cipla Ltd.	PHARMA
Coal India Ltd.	METALS
DLF Ltd.	CONSTRUCTION
Dr. Reddy's Laboratories Ltd.	PHARMA
GAIL (India) Ltd.	ENERGY
Grasim Industries Ltd.	CEMENT & CEMENT PRODUCTS
HCL Technologies Ltd.	IT
HDFC Bank Ltd.	FINANCIAL SERVICES
Hero MotoCorp Ltd.	AUTOMOBILE
Hindalco Industries Ltd.	METALS
Hindustan Unilever Ltd.	CONSUMER GOODS
Housing Development Finance	FINANCIAL SERVICES

Corporation Ltd.	
I T C Ltd.	CONSUMER GOODS
ICICI Bank Ltd.	FINANCIAL SERVICES
IDFC Ltd.	FINANCIAL SERVICES
IndusInd Bank Ltd.	FINANCIAL SERVICES
Infosys Ltd.	IT
Jaiprakash Associates Ltd.	CONSTRUCTION
Jindal Steel & Power Ltd.	METALS
Kotak Mahindra Bank Ltd.	FINANCIAL SERVICES
Larsen & Toubro Ltd.	CONSTRUCTION
Lupin Ltd.	PHARMA
Mahindra & Mahindra Ltd.	AUTOMOBILE
Maruti Suzuki India Ltd.	AUTOMOBILE
NMDC Ltd.	METALS
NTPC Ltd.	ENERGY
Oil & Natural Gas Corporation Ltd.	ENERGY
Power Grid Corporation of India Ltd.	ENERGY
Punjab National Bank	FINANCIAL SERVICES
Ranbaxy Laboratories Ltd.	PHARMA
Reliance Industries Ltd.	ENERGY
Sesa Sterlite Ltd.	METALS
State Bank of India	FINANCIAL SERVICES
Sun Pharmaceutical Industries Ltd.	PHARMA
Tata Consultancy Services Ltd.	IT
Tata Motors Ltd.	AUTOMOBILE
Tata Power Co. Ltd.	ENERGY
Tata Steel Ltd.	METALS
UltraTech Cement Ltd.	CEMENT & CEMENT PRODUCTS
WIPRO	IT

Bse Sensex

The S&P BSE SENSEX (S&P Bombay Stock Exchange Sensitive Index), also-called the BSE 30 or simply the SENSEX, is a free float market weighted index of 30 well-established and financially sound companies listed on Bombay Stock Exchange. The 30 component companies which are some of the largest and most actively traded stocks, are representative of various industrial of the Indian economy. Published since 1 January 1986, the S&P BSE SENSEX is regarded as the pulse of the domestic stock markets in India. The base value of the S&P BSE SENSEX is taken as 100 on 1 April 1979, and its base year as 1978–79. On 25 July 2001 BSE launched DOLLEX-30, a dollar-linked version of S&P BSE SENSEX.

MCX SX 40

MCX Stock Exchange Limited (MCX-SXAT) is an Indian stock exchange. **SX40** is the flagship Index of MCX-SXAT. A free float based index of 40 large cap - liquid stocks representing diversified sectors of the economy. It is designed to be a performance benchmark and to provide for efficient investment and risk management instrument. It would also help in structuring passive investment vehicles.

Information sources

Learning about investing means learning how money makes money. No one will watch over your investments more closely or carefully as you yourself, and this is as good a reason as any to learn as much as you can and become as knowledgeable and savvy about investing as possible. This holds true even if you determine to have a financial planner or advisor manage your investment funds.

Becoming "Investment Literate"

It is important to be an informed investor. Financial websites, periodicals, investment books and publications will keep you up to date and educated about investing, about what is going on in the economy, what influences your money, your invested funds, and where your money can be placed so that it will work hardest for you. These sources contain valuable information about business in general, as well as current economic and financial trends, news of the stock market and related news stories, all those things that affect the investment community in general, and most importantly, that affect your investments and investment decisions.

There is a wealth of financial and investment information available to the individual investor, and one of your tasks if you wish to be an informed investor is to distil this volume of information in order to find those sources that you can understand, that you are comfortable using, that provide information that is clear, reliable, and, as much as possible, independent of bias.

Sources of Investment Information

The following sources of investment information are intended as a *starting point*. They are stepping stones. As you proceed to research, investigate, educate yourself and learn, you will find that one place of information will lead you to the next, and you will find yourself gaining the knowledge that you need in order to become a most successful investor. Becoming investment literate is an on-going process.

Books

“*The Intelligent Investor*”, written by Benjamin Graham - recognized as one of the classic texts on investing, value investing specifically. A comprehensive, essential text for any serious student of investing.

Financial websites

MSN Money (moneycentral.msn.com) - up to date financial news, an educational/investing center, stock, bond, and mutual fund research and evaluation resources, help with personal finance and more.

CNNMoney.com (money.cnn.com) - as with MSN Money, a comprehensive financial site including current news affecting the economy and the investment community. The site also provides a very helpful, step-by-step, personal finance money guide, Money 101.

Morningstar (www.morningstar.com) - a comprehensive research and *evaluation* site for stocks, bonds, ETF's (exchange traded funds), and mutual funds, utilizing the Morningstar rating system for investment screening.

Newspapers and periodicals

Following are the major financial dailies available in Indian news paper industry

- The Hindu- Business LINE
- The Economic TIMES

Following are the major financial periodicals available in Indian news paper industry

- The Business Enterprise
- Business India
- Business Today (business magazine)
- Businessworld
- Dhanam Magazine

CHAPTER 2

FIXED INCOME SECURITIES

Fixed income securities-Introduction

Retail investors in India can be said to be reasonably well informed when it comes to investments in equities, real estate or even assets like gold or silver. The Fixed Income asset class, however, is not so well known. As a tool for diversification, and as a safe avenue for volatile times, understanding this class is important. Even experts agree that greater retail participation in the fixed income market in India will make it more robust.

Fixed Income, as the name suggests, is an investment avenue wherein the investor gets predictable returns at set intervals of time. This investment class is relatively safe with low volatility and forms an ideal investment option for people looking at fixed returns with low default risk, e.g., retired individuals.

Fixed income securities

Fixed income securities denote debt of the issuer, i.e., they are an acknowledgment or promissory note of money received by the issuer from the investor. simply it is an investment that provides a return in the form of fixed periodic payments and the eventual return of principal at maturity. Unlike a variable-income security, where payments change based on some underlying measure such as short-term interest rates, the payments of a fixed-income security are known in advance. An example of a fixed-income security would be a 5% fixed-rate government bond where a RS.1,000 investment would result in an annual RS.50 payment until maturity when the investor would receive the RS.1,000 back. Generally, these types of assets offer a lower return on investment because they guarantee income. Fixed-income [securities](#) can be contrasted with equity securities, often referred to as stocks and shares, that create no obligation to pay dividends or any other form of income. In order for a company to grow its business, it often must raise money: to finance an acquisition, buy equipment or land or invest in new product development. The terms on which investors will finance the company will depend on the risk profile of the company. The company can give up [equity](#) by issuing stock, or can promise to pay regular [interest](#) and repay the principal on the loan

Characteristics:

- Fixed maturity period ranging from as low as 91 days to 30 years.
- Specified “coupon” or interest rate.
- Generally issued at a discount to face value and the investor profits from the difference in the issue and redeemed price

ADVANTAGES OF FIXED INCOME SECURITIES

1. Lower volatility than other asset classes providing stable returns.
2. Higher returns than traditional bank fixed deposits.
3. Predictable and stable returns offer hedge against the volatility and risk of equity investments, and thus allow an investor to create a diversified portfolio.

DISADVANTAGES OF FIXED INCOME SECURITIES

1. Low liquidity: investors' money is locked for full maturity period unless the security is traded in the secondary market.
2. Not actively traded: this lack of competition prevents their prices rising very high.
3. Sensitivity to market interest rate: change in market interest rate changes the yield on held securities.

Terms associated with Fixed Income Securities

- The **issuer**

It is the entity (company or government) who borrows the money by issuing the bond, and is due to pay interest and repay capital in due course.

- The **principal** of a bond

It is also known as maturity value, face value, par value – is the amount that the issuer borrows which must be repaid to the lender.

- The **coupon**

It is the annual interest that the issuer must pay, expressed as a percentage of the principal.

- The **maturity**

It is the end of the bond, the date that the issuer must return the principal.

PARTICIPANTS IN THE DEBT MARKETS

Debt markets are pre-dominantly wholesale markets, with dominant institutional investor participation. The investors in the debt markets concentrate in banks, financial institutions, mutual funds, provident funds, insurance companies and corporates. Many of these participants are also issuers of debt instruments. The smaller number of large players has resulted in the debt markets being fairly concentrated, and evolving into a wholesale negotiated dealings market. Most debt issues are privately placed or auctioned to the participants. Secondary market dealings are mostly done on telephone, through

negotiations. In some segments such as the government securities market, market makers in the form of primary dealers have emerged, who enable a broader holding of treasury securities. Debt funds of the mutual fund industry, comprising of liquid funds, bond funds and gilt funds, represent a recent mode of intermediation of retail investments into the debt markets, apart from banks, insurance, provident funds and financial institutions, who have traditionally been major intermediaries of retail funds into debt market products.

The market participants in the debt market are:

1. Central Governments, raising money through bond issuances, to fund budgetary deficits and other short and long term funding requirements.
2. Reserve Bank of India, as investment banker to the government, raises funds for the government through bond and t-bill issues, and also participates in the market through open-market operations, in the course of conduct of monetary policy. The RBI regulates the bank rates and repo rates and uses these rates as tools of its monetary policy. Changes in these benchmark rates directly impact debt markets and all participants in the market.
3. Primary dealers, who are market intermediaries appointed by the Reserve Bank of India who underwrite and make market in government securities, and have access to the call markets and repo markets for funds.
4. State Governments, municipalities and local bodies, which issue securities in the debt markets to fund their developmental projects, as well as to finance their budgetary deficits.
5. Public sector units are large issuers of debt securities, for raising funds to meet the long term and working capital needs. These corporations are also investors in bonds issued in the debt markets.
6. Corporate treasuries issue short and long term paper to meet the financial requirements of the corporate sector. They are also investors in debt securities issued in the market.
7. Public sector financial institutions regularly access debt markets with bonds for funding their financing requirements and working capital needs. They also invest in bonds issued by other entities in the debt markets.
8. Banks are the largest investors in the debt markets, particularly the treasury bond and bill markets. They have a statutory requirement to hold a certain percentage of their deposits (currently the mandatory requirement is 25% of deposits) in approved securities (all government bonds qualify) to satisfy the statutory liquidity requirements. Banks are very large participants in the call money and overnight markets. They are arrangers of commercial paper issues of corporates. They are also active in the inter-bank term markets and repo markets for their short term funding requirements. Banks also issue CDs and bonds in the debt markets.

9. Mutual funds have emerged as another important player in the debt markets, owing primarily to the growing number of bond funds that have mobilized significant amounts from the investors. Most mutual funds also have specialized bond funds such as gilt funds and liquid funds. Mutual funds are not permitted to borrow funds, except for very short-term liquidity requirements. Therefore, they participate in the debt markets pre-dominantly as investors, and trade on their portfolios quite regularly.

10. Foreign Institutional Investors are permitted to invest in Dated Government Securities and Treasury Bills within certain specified limits.

11. Provident funds are large investors in the bond markets, as the prudential regulations governing the deployment of the funds they mobilize, mandate investments pre-dominantly in treasury and PSU bonds. They are, however, not very active traders in their portfolio, as they are not permitted to sell their holdings, unless they have a funding requirement that cannot be met through regular accruals and contributions.

12. Charitable Institutions, Trusts and Societies are also large investors in the debt markets. They are, however, governed by their rules and byelaws with respect to the kind of bonds they can buy and the manner in which they can trade on their debt portfolios.

Types of bonds

Based on Issuer:

Issuers of Corporate Bonds can be broadly classified in following classes:

Bonds issued by Local Bodies

Bonds issued by Public Sector Units

Bonds issued by Financial Institutions

Bonds issued by Banks

Bonds issued by Corporates

Based on Maturity Period

Short Term Maturity: - Security with maturity period less than one year.

Medium Term: - Security with maturity period between 1 year and 5 year.

Long Term Maturity: -Such securities have maturity period more than 5 years

Perpetual: - Security with no maturity. Currently, in India Banks issue perpetual bond.

Based on Coupon

Fixed Rate Bonds:-have a coupon that remains constant throughout the life of the bond.

Floating Rate Bonds: - Coupon rates are reset periodically based on benchmark rate.

Zero-coupon Bonds:- No coupons are paid. The bond is issued at a discount to its face value, at which it will be redeemed. There are no intermittent payments of interest

Based on Option

Bond with call option: - This feature gives a bond issuer the right, but not the obligation, to redeem his issue of bonds before the bond's maturity at predetermined price and date.

Bond with put option: - This feature gives bondholders the right but not the obligation to sell their bonds back to the issuer at a predetermined price and date. These bonds generally protect investors from interest rate risk.

Based on redemption

Bonds with single redemption: - In this case principal amount of bond is paid at the time of maturity only.

Amortising Bonds: - A bond, in which payment made by the borrower over the life of the bond, includes both interest and principal, is called an amortizing bond

Bond yields

1) Current yield

This is the yield or return derived by the investor on purchase of the instrument (yield related to purchase price). It is calculated by dividing the coupon rate by the purchase price of the bonds.

$$\text{Current Yield} = \frac{\text{Annual Interest}}{\text{Market Price}}$$

For example 10% interest bond selling at 80 has a current yield of = $10/80 \times 100 = 12.5\%$

2) Yield to maturity (YTM)

The yield or the return on the instrument is held till its maturity is known as the Yield-to maturity (YTM). Given a pre-specified set of cash flows and a price, the YTM of a bond is that rate which equates the discounted value of the future cash flows to the present price of the bond. It is the internal rate of return of the

valuation equation. This is the most widely used yield calculation method. Yield to maturity represents the yield on the bond, provided the bond is held to maturity and the intermittent coupons are re-invested at the same YTM rate. In other words, when we compute YTM as the rate that discounts all the cash flows from the bond, at the same YTM rate, what we are assuming in effect is that each of these cash flows can be re-invested at the YTM rate for the period until maturity.

Where n is the number of years to maturity and PV = par value

$$Price = \frac{c_1 + c_2 + \dots + c_n + PV}{(1+r)(1+r)^2 \dots (1+r)^n}$$

For example A bond with a face value of RS.2000 is currently trading at 1600.the coupon rate is 9%.maturity period is 8 years .if we calculate the above problem using the above formula the answer will be 13.2%

3) Nominal Yield

The nominal yield on a bond is simply the percentage of interest to be paid on the bond periodically. It is calculated by dividing the annual coupon payment by the par value of the bond. It is important to note that the nominal yield does not estimate return accurately unless the current bond price is the same as its par value. E.g. If coupon rate is 10% then nominal yield is 10%.

4) Realized Yield

The realized yield of a bond is calculated when an investor plans to hold a bond only for a certain period of time, rather than to maturity. In this case, the investor will sell the bond, and this projected future bond price must be estimated for the calculation. Because future prices are hard to predict, this yield measurement is only an estimation of return.

Bond Valuation

The value of a financial instrument is well understood as the present value of the expected future cash flows from the instrument. In case of a plain vanilla bond, which we will first see, before understanding the variations, the cash flows are pre-defined. The cash flows expected from a bond, which is not expected to default are primarily made up of (i) coupon payments and

(ii) Redemption of principal. The actual dates on which these cash flows are expected are also known in advance, in the case of a simple non-callable bond. Therefore, valuation of a bond involves discounting these cash flows to the present point in time, by an appropriate discount rate. The key issue in bond valuation is this rate the rate we would use is the “required rate” on the bond, representing a rate that we understand is available on a comparable bond (comparable in terms of tenor and risk).

Risks of investing in a bond

The most well-known risk in the bond market is

1. Interest rate risk –

The risk that bond prices will fall as interest rates rise. By buying a bond, the bondholder has committed to receiving a fixed rate of return for a fixed period. Should the market interest rate rise from the date of the bond's purchase, the bond's price will fall accordingly. The bond will then be trading at a discount to reflect the lower return that an investor will make on the bond.

Market interest rates are a function of several factors such as the demand for, and supply of, money in the economy, the inflation rate, the stage that the business cycle is in as well as the government's monetary and fiscal policies. However, interest rate risk is not the only risk of investing in bonds; fixed-income investments pose four additional types of risk for investors:

2. Reinvestment Risk

The risk that the proceeds from a bond will be reinvested at a lower rate than the bond originally provided. For example, imagine that an investor bought a \$1,000 bond that had an annual coupon of 12%. Each year the investor receives \$120 (12%*\$1,000), which can be reinvested back into another bond. But imagine that over time the market rate falls to 1%. Suddenly, that \$120 received from the bond can only be reinvested at 1%, instead of the 12% rate of the original bond.

3. Call Risk

The risk that a bond will be called by its issuer. Callable bonds have call provisions, which allow the bond issuer to purchase the bond back from the bondholders and retire the issue. This is usually done when interest rates have fallen substantially since the issue date. Call provisions allow the issuer to retire the old, high-rate bonds and sell low-rate bonds in a bid to lower debt costs.

4. Default Risk

The risk that the bond's issuer will be unable to pay the contractual interest or principal on the bond in a timely manner, or at all. Credit ratings services such as Moody's, Standard & Poor's and Fitch give credit ratings to bond issues, which helps to give investors an idea of how likely it is that a payment default will occur. For example, most federal governments have very high credit ratings (AAA); they can raise taxes or print money to pay debts, making

default unlikely. However, small, emerging companies have some of the worst credit (BB and lower). They are much more likely to default on their bond payments, in which case bondholders will likely lose all or most of their investment.

5. [Inflation Risk](#)

The risk that the rate of price increases in the economy deteriorates the returns associated with the bond. This has the greatest effect on [fixed bonds](#), which have a set interest rate from inception. For example, if an investor purchases a 5% fixed bond and then inflation rises to 10% a year, the bondholder will lose money on the investment because the [purchasing power](#) of the proceeds has been greatly diminished. The interest rates of floating-rate bonds ([floaters](#)) are adjusted periodically to match inflation rates, limiting investors' exposure to inflation risk.

6. Liquidity Risk

While there is almost always a ready market for government bonds, corporate bonds are sometimes entirely different animals. There is a risk that an investor might not be able to sell his or her corporate bonds quickly due to a [thin market](#) with few buyers and sellers for the bond. Low interest in a particular bond issue can lead to substantial price volatility and possibly have an adverse impact on a bondholder's total return (upon sale). Much like stocks that trade in a thin market, you may be forced to take a much lower price than expected to sell your position in the bond.

Bond rating

Definition of 'Bond Rating'

A grade given to bonds that indicates their credit quality. Private independent rating services such as Standard & Poor's, Moody's and Fitch provide these evaluations of a bond issuer's financial strength, or its the ability to pay a bond's principal and interest in a timely fashion.

Credit rating is a highly concentrated industry with the two largest [rating agencies](#) — [Moody's Investors Service](#), [Standard & Poor's](#) — having 80% market share globally, and the "[Big Three](#)" [credit rating agencies](#) — Moody's, S&P and [Fitch Ratings](#) — controlling approximately 95% of the ratings business.

The credit rating is a financial indicator to potential investors of [debt securities](#) such as [bonds](#). These are assigned by [credit rating agencies](#) such as Moody's, Standard & Poor's and Fitch Ratings to have letter designations (such as AAA, B, CC) which represent the quality of a bond. Moody's assigns bond credit ratings of [Aaa](#), Aa, A, Baa, Ba, B, Caa, Ca, C, with WR and NR as withdrawn and not rated. Standard & Poor's and Fitch assign bond credit ratings of AAA, AA, A, BBB, BB, B, CCC, CC, C, D.

Rating tier definitions

<u>Moody's</u>	<u>Standard & Poor's</u>	<u>Fitch</u>	Credit worthiness
Aaa	AAA	AAA	An obligor has EXTREMELY STRONG capacity to meet its financial commitments.
Aa1	AA+	AA+	An obligor has VERY STRONG capacity to meet its financial commitments. It differs from the highest rated obligors only in small degree.
Aa2	AA	AA	
Aa3	AA-	AA-	
A1	A+	A+	An obligor has STRONG capacity to meet its financial commitments but is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligors in higher-rated categories.
A2	A	A	
A3	A-	A-	
Baa1	BBB+	BBB+	An obligor has ADEQUATE capacity to meet its financial commitments. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitments.
Baa2	BBB	BBB	
Baa3	BBB-	BBB-	
Ba1	BB+	BB+	An obligor is LESS VULNERABLE in the near term than other lower-rated obligors. However, it faces major ongoing uncertainties and exposure to adverse business, financial, or economic conditions which could lead to the obligor's inadequate capacity to meet its financial commitments.
Ba2	BB	BB	
Ba3	BB-	BB-	
B1	B+	B+	An obligor is MORE VULNERABLE than the obligors rated 'BB', but the obligor currently has the capacity to meet its financial commitments. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitments.
B2	B	B	
B3	B-	B-	

Caa	CCC	CCC	An obligor is CURRENTLY VULNERABLE, and is dependent upon favourable business, financial, and economic conditions to meet its financial commitments.
Ca	CC	CC	An obligor is CURRENTLY HIGHLY-VULNERABLE.
	C	C	The obligor is CURRENTLY HIGHLY-VULNERABLE to nonpayment. May be used where a bankruptcy petition has been filed.
C	D	D	An obligor has failed to pay one or more of its financial obligations (rated or unrated) when it became due.
e, p	pr	Expected	Preliminary ratings may be assigned to obligations pending receipt of final documentation and legal opinions. The final rating may differ from the preliminary rating.
WR			Rating withdrawn for reasons including: debt maturity, calls, puts, conversions, etc., or business reasons (e.g. change in the size of a debt issue), or the issuer defaults.

CHAPTER 3

APPROACH TO SECURITY ANALYSIS

Security analysis is the analysis of tradeable [financial instruments](#) called [securities](#). These can be classified into debt securities, [equities](#), or some hybrid of the two. More broadly, [futures contracts](#) and tradeable [credit derivatives](#) are sometimes included. Security analysis is typically divided into [fundamental analysis](#), which relies upon the examination of fundamental business factors such as [financial statements](#), and [technical analysis](#), which focuses upon price trends and momentum. another form of security analysis is technical analysis which uses graphs and diagrams for price prediction securities. Simply the process of analysing return and risks of financial securities may termed as security analysis.

Fundamental analysis

Fundamental analysis is really a logical and systematic approach to estimating the future dividends and share price it is based on the basic premise that share price is determined by a number of fundamental factors relating to the economy, industry and company. In other words fundamental analysis means a detailed analysis of the fundamental factors affecting the performance of companies.

Each share is assumed to have an economic worth based on its present and future earning capacity .this is called its intrinsic value or fundamental value. the purpose of fundamental analysis is to evaluate the present and future earning capacity of a share based on the economy, industry and company fundamentals and thereby assess the intrinsic value of the share .the investor can compare the intrinsic value of the share with the prevailing market price to arrive at an investment decision. if the market price of the share is lower than its intrinsic value, the investor would decide to buy the share as it is underpriced. The price of such share is expected to move up in the future to match with its intrinsic value.

On the contrary, when the market price of a share is higher than its intrinsic value, it is perceived to be overpriced. The market price of such a share is expected to come down in future and hence, the investor should decide to sell such a share. Fundamental analysis thus provides an analytical framework for rational investment decision making. This analytical framework is known as EIC framework, or economy –industry –company analysis.

Fundamental analysis thus involves three steps:

1. Economic analysis
2. Industry analysis
3. Company analysis

Economy analysis

The performance of a company depends on the performance of the economy. Let us look some of the key economic variables that an investor must monitor as part of his fundamental analysis.

Growth rate of national income

The rate of growth of the national economy is an important variable to be considered by an investor. GNP (gross national product), NNP (net national product), GDP (gross domestic product) are the different measures of the total income or total economic output as a whole.

The estimated growth rate of the economy would be a pointer towards the prosperity of the economy. An economy typically passes through different stages of prosperity known as economic or business cycle. The four stages of an economic cycle are

1. **Depression:** is the worst of the four stages. During a depression, demand is low and declining. Inflation is often high and so are interest rates.
2. **Recovery stage** :the economy begins to receive
After a depression. Demand picks up leading to more investments in the economy. Production, employment and profits are on the increase.
3. **Boom: The** phase of the economic cycle is characterized by high demand. Investments and production are maintained at a high level to satisfy the high demand. Companies generally post higher profits.
4. **Recession:** The boom phase gradually slow down .the economy slowly begin to experience a downturn in demand, production employment etc, the profits of companies are also start to decline. This is the recession stage of the economy.

Inflation

Inflation leads to erosion of purchasing power in the hands of consumers, this will result in lower the demand of products Inflation prevailing in the economy has considerable impact on the performance of companies. Higher rate of inflation upset business plans.

Interest rates

Interest rates determine the cost and availability of credit for companies operating in an economy. a low interest rate stimulates investment by making credit available easily and cheaply. On the contrary, higher interest rates result in higher cost of production which may lead to lower profitability and lower demand.

Government revenue, expenditure and deficits

Government is the largest investor and spender of money, the trend in government revenue and expenditure and deficit have a significant impact on the performance of industries and companies' expenditure by the government stimulates the economy by creating jobs and generating demand. The nature of government spending is of greater importance in determining the fortunes of many companies.

Exchange rates

The performance and profitability of industries and companies that are major importers or exporters are considerably affected the exchange rates of the rupee against major currencies of the world. a depreciation of the rupee improves the competitive position of Indian products in the foreign markets ,thereby stimulating exports .but it would also make import more expensive .a company more depending on imports may find it devaluation of the rupee affecting its profitability adversely.

Infrastructure

The development of an economy depends very much on the infrastructure available. The availability of infrastructure facilities such as power, transportation, and communication systems affects the performance of companies bad infrastructure lead to inefficiencies, lower productivity, wastage and delays.

Monsoon

The Indian economy is essentially an agrarian economy and agriculture forms a very important sector of the Indian economy. The performance of agriculture to a very extent depends on the monsoon; the adequacy of the monsoon determines the success or failure of the agricultural activities in India.

Economic and political stability

A stable political environment is necessary for steady and balanced growth. Stable long term economic policies are what are needed for industrial growth, such stable policies emanate only from stable political systems as economic and political factors are interlinked.

Industry analysis

An industry ultimately invests his money in the securities of one or more specific companies, each company can be characterized as belonging to an industry. the performance of companies would therefore ,be influenced by the fortunes of the industry to which it belongs. an industry "as a group of firms producing reasonably similar products which serve the same needs of common set of buyers."

Industry life cycle

The industry life cycle theory is generally attributed to Julius Grodzinsky. According to the industry life cycle theory, the life of an industry can be segregated into the pioneering stage, the expansion stage, the stagnation stage, and the decay stage. This kind of segregation is extremely useful to an investor because the profitability of an industry depends upon its stage of growth.

➤ **Pioneering stage**

This is the first stage in the industrial life cycle of a new industry where the technology as well as the product are relatively new and have not reached a state of perfection. Pioneering stage is characterized by rapid growth in demand for the output of industry. As a result, there is a greater opportunity for profit. Many firms compete with each other vigorously. Weak firms are eliminated, and a lesser number of firms survive the pioneering stage. *ex: leasing industry.*

➤ **Expansion stage**

Once an industry has established itself, it enters the second stage of expansion or growth. These companies continue to become stronger. Each company finds a market for itself and develops its own strategies to sell and maintain its position in the market. The competition among the surviving companies brings about improved products at lower prices. Companies in the expansion stage of an industry are quite attractive for investment purposes.

➤ **Stagnation stage**

In this stage, the growth of the industry stabilizes. The ability of the industry to grow appears to have been lost. Sales may be increasing but at a slower rate than that experienced by competitive industries or by the overall economy. The transition of an industry from the expansion stages to stagnation stages is very slow. An important reason for this transition is change in social habits and development of improved technology.

Ex: the black and white television industry in India provides a good example of an industry which passed from the expansion stages to stagnation stage.

➤ **Decay stage**

Decay stage occurs when the products of the industry are no longer in demand. New products and new technologies have come to the market. Customers have changed their habits, style, and liking. As a result, the industry becomes obsolete and gradually ceases to exist.

Industry characteristics

In an industry analysis there are a number of key characteristics that should be considered by the analyst.

Demand supply gap

The demand for the product usually trends to change at a steady rate, where as the capacity to produce the product tends to change at irregular intervals, depending upon the installation of additional production capacity. as result an industry is likely to experience under supply and over supply of capacity at different times. excess supply reduces the profitability of the industry through a decline in the unit price realization. on the contrary ,insufficient supply tends to improve the profitability through higher unit price realization.

Competitive conditions in the industry

The level of competition among various companies in an industry is determined by certain competitive forces. These competitive forces are: barriers to entry, the threat of substitution, bargaining power of the suppliers and the rivalry among competitors.

Permanence

Permanence is the phenomenon related to the products and the technology used by the industry. If an analyst feels that the need for a particular industry will vanish in a short period, or that the rapid technological changes would render the products obsolete within short period of time, it would be foolish to invest such industry.

Labour conditions

In our country the labour unions are very power full .if the labour in a particular industry is rebellious and is inclined to resort to strikes frequently, the prospects of that industry cannot become bright.

Attitude of government

The government may encourage certain industries and can assist such industries through favorable legislation. On the contrary, the government may look with disfavor on certain other industries .in India this has been the experience of alcoholic drinks and cigarette industries. A prospective investor should consider the role of government is likely to play in the industry.

Supply of raw materials

This is also one of the important factor determine the profitability of an industry. Some industry may have no difficulty in obtaining the major raw materials as they may be indigenously available in plenty. Other industries may

have to depend on a few manufactures within the country or on imports from outside the country for their raw material supply.

Cost structure

The cost structure that is the fixed and variable cost, affect the cost of production and profitability of the firm. The higher the fixed cost component, higher is the sales volume necessary to achieve breakeven point. conversely, the lower the proportion of fixed cost relative to variable cost ,lower would be the breakeven point provides higher margin of safety an analyst would consider favorably an industry that has a lower breakeven point.

Company analysis

Company analysis is the final stage of fundamental analysis. The economy analysis provides the investor a broad outline of the prospects of growth in the economy, the industry analysis helps the investor to select the industry in which investment would be rewarding. Now he has to decide the company in which he should invest his money. Company analysis provides answer to this question.

In company analysis, the analyst tries to forecast the future earnings of the company because there is a strong evidence that the earnings have a direct and powerful effect upon share prices. The level, trend and stability of earnings of a company, however depend upon a number of factors concerning the operations of the company.

Financial statements

The financial statements of a company help to assess the profitability and financial health of the company. The two basic financial statements provided by a company are the balance sheet and the profit and loss account. The balance sheet indicates the financial position of the company on a particular date, namely the last day of the accounting year.

The profit and loss account, also called income statement, reveals the revenue earned, the cost incurred and the resulting profit and loss of the company for one accounting year.

Analysis of financial statements

Financial ratios are most extensively used to evaluate the financial performance of the company, it also help to assess the whether the financial performance and financial strengths are improving or deteriorating, ratios can be used for comparative analysis either with other firms in the industry through a cross sectional analysis or a time series analysis.

Four groups of ratios may be used for analyzing the performance of the company

Liquidity ratios

These ratios measure the company's ability to fulfill its short term obligations and reflect its short term financial strength or liquidity. The commonly used liquidity ratios are:

1. Current ratio =
$$\frac{\text{Current Assets}}{\text{Current liabilities}}$$

2. Quick ratio (acid test) ratio

$$= \frac{\text{current assets} - \text{inventory} - \text{prepaid expenses}}{\text{Current liabilities}}$$

Leverage ratios

These are also known as capital structure ratios. they measure the company's ability to meet its long-term debt obligations. The commonly used leverage ratios are the following.

1. Debt equity ratio =
$$\frac{\text{long term debt}}{\text{Share holders equity}}$$

2. Total debt ratio or debt to total assets ratio

$$= \frac{\text{Total debt}}{\text{Total assets}}$$

3. Proprietary ratio =
$$\frac{\text{share holders equity}}{\text{Total assets}}$$

4. Interest coverage ratio

$$= \frac{\text{earnings before interest and taxes (EBIT)}}{\text{Interest}}$$

Profitability ratios

The profitability of the company can be measured by the profitability ratios. These ratios are calculated by relating the profits either to sales, or to investment, or to the equity shares.

1. Profitability related to sales

a) Gross profit ratio

$$= \frac{\text{Gross profit (sales-cost of goods sold)}}{\text{Sales}}$$

b) Operating profit ratio = $\frac{\text{EBIT}}{\text{Sales}}$

c) Net profit ratio = $\frac{\text{earnings after tax(EAT)}}{\text{Sales}}$

d) Administrative expenses ratio = $\frac{\text{administrative expenses}}{\text{Sales}}$

e) Selling expenses ratio = $\frac{\text{selling expenses}}{\text{Sales}}$

f) Operating expenses ratio = $\frac{\text{Administrative expenses} + \text{selling expenses}}{\text{Sales}}$

g) Operating ratio = $\frac{\text{cost of goods sold} + \text{operating expenses}}{\text{Sales}}$

2. Profitability related to investment

a) Return on assets = $\frac{\text{Earnings after tax}}{\text{Total assets}}$

b) Return on capital employed = $\frac{\text{EBIT}}{\text{Total capital employed}}$

c) Return on equity = $\frac{\text{EAT}}{\text{Shareholders' equity}}$

3. Profitability related to equity share holders

a) earnings per share (EPS)
= $\frac{\text{net profit available to equity shareholders}}{\text{Number of equity shares}}$

b) Earning yield = $\frac{\text{EPS}}{\text{Market price per share}}$

c) Dividend yield = $\frac{\text{DPS (dividend per share)}}{\text{Market price per share}}$

$$\text{d) dividend payout ratio} = \frac{\text{DPS}}{\text{EPS}}$$

$$\text{e) price earnings ratio (P/E ratio)} = \frac{\text{market price per share}}{\text{EPS}}$$

4. Overall profitability

$$\text{Return on investment (ROI)} = \frac{\text{EAT}}{\text{Sales}} \times \frac{\text{sales}}{\text{total assets}} \quad \text{or} \quad \frac{\text{EAT}}{\text{total assets}}$$

Activity or efficiency ratios

There are also known as turnover ratios. These ratios measure the efficiency in asset management. They express the relationship between sales and the different types of assets.

$$1. \text{ Current assets turnover} = \frac{\text{sales}}{\text{Current assets}}$$

$$2. \text{ Fixed assets turnover} = \frac{\text{sales}}{\text{Fixed assets}}$$

$$3. \text{ Total assets turnover} = \frac{\text{sales}}{\text{Total assets}}$$

$$4. \text{ Inventory turnover} = \frac{\text{sales}}{\text{Average inventory}}$$

$$5. \text{ Debtors turnover} = \frac{\text{sales}}{\text{Average debtors}}$$

Other variables

The future prospects of the company would also depend upon the number of other factors .some of which is given below:

1. Company's market share
2. Capacity utilization
3. Modernisation and expansion plans
4. Order book position
5. Availability of raw material

Technical analysis

A technical analysis believes that the share price is determined by the demand and supply forces operating in the market. a technical analysis concentrate on the movement of share prices . he climes that by examining past share price movements future share price can be accurately predicted.

The basic premise of technical analysis is that prices move in trends or waves which may be upward or downward

A rational behind the technical analysis is that share price behavior repeat itself over time and analyst attempt to drive methods to predict this repetition.

Dow Theory

The theory formulated by Charles H.Dow.dow who the editor of the wall street journal in U.S.A

Charles dow formulated a hypothesis that the stock market does not move on random basis but is influenced by three distinct cyclical trend that guide its direction .according to dow theory, the market has three movements and these movements are simultaneous in nature. These movements are the primary movements, secondary reactions and minor movements.

The primary movement is the long range cycle that carries the entire market up or down. This is the long term trend in the market. the secondary reactions act as a restraining force on the primary movement these are in the opposite direction to the primary movement and last only for a short while these are also known as corrections. These are secondary reactions. The third movement in the market is the minor movements which are the day to day fluctuations in the market. The minor movements are not significant and have no analytical value as they are of very short duration. The three movements of the market have been compared to the tides, the waves and the ripples in the ocean.

Bullish trend

During the bull market (upward moving market), in the first phase the price would advance with the revival of confidence in the future of business. During the second phase, price would advance due to improvements in corporate earnings, in the third phase, prices advance due to inflation and speculation. According to Dow Theory, the formulation of higher bottoms and higher tops indicates a bullish trend.

Bearish trend

The bear market is also characterized by three phases, in the first phase, price begin to fall due to abandonment of hopes. in the second phase ,companies start to reporting lower profits and lower dividends ,in the final phase, price fall still further due to distress selling .a bearish market would be indicated by the formulation of lower tops and lower bottoms.

The theory also make certain assumptions which have been referred to as the hypotheses of the theory.

The first hypothesis states that the primary trend cannot be manipulated. It means that no single individual or institution or group of individuals and institutions or group of individuals and institutions can exert influence on the major trend of the market.

The second hypotheses states that the averages discount everything. What means is that the daily prices reflect the aggregate judgement and emotions of all stock market participants. in arriving at the price of a stock the market discounts everything known and predictable about the stock that is likely to affect the demand and supply position of the stock.

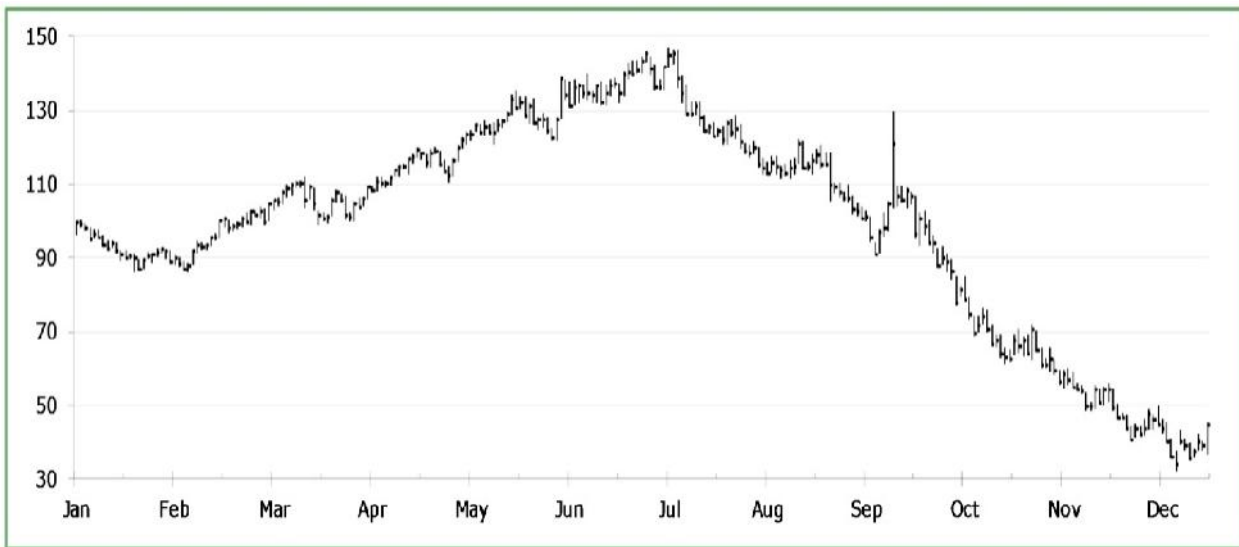
The third hypothesis states that the theory is not infallible. the theory is concerned with the trend of the market and has no forecasting value as regards the duration .

Basic principles of technical analysis

1. The market value of a security is related to the demand and supply factors operating in the market.
2. There are both rational and irrational factors which surround the supply and demand factors of a security.
3. Security prices behave in a manner that their movement is continuous in a particular direction for some length of time.
4. Trends in stock prices have been seen to change when there is a shift in the demand and supply factors.
5. The shift in demand and supply can be detected through charts prepared specially to show the market action.
6. Patterns which are projected by charts record price movements and these recorded patterns are used price movements and these recorded patterns are used by analysts to make forecasts about the movement of prices in future.

Price chart

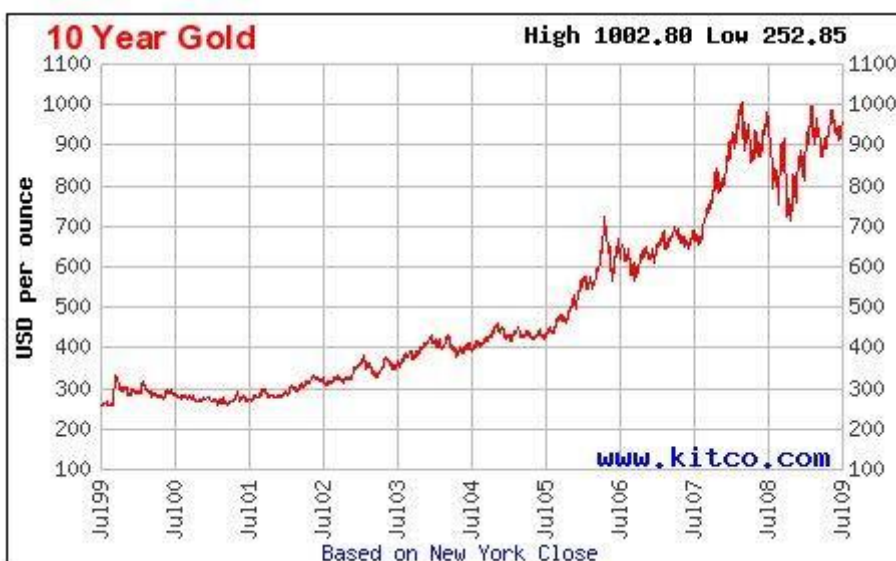
Price chart is the basic tool used by the technical analyst to study the share price movement. the prices are plotted on an XY graph where the X axis represents the trading days and Y axis denotes the prices.



Three type of price charts are currently used by technical analysts. these are the line chart or the closing price chart, the bar chart and the Japanese candlestick chart.

Line chart

It is the simplest price chart. In this chart, the closing prices of a share are plotted on the XY graph on a day to day basic .the closing price of the each day would be represented by a point on the XY graph. All these points would be connected by a straight line which would indicate the trend of the market.



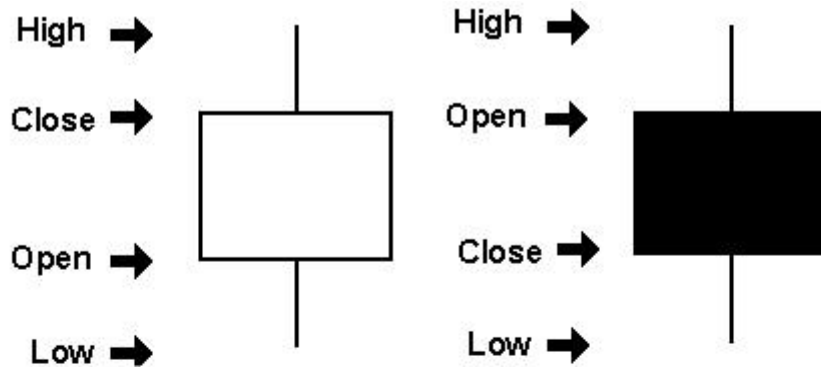
Bar chart

It is the most popular chart used by technical analysts. In this chart the highest price, the lowest price and the closing price of each day are plotted on a day to day basis. A bar is formed by joining the highest price and lowest price of a particular day by a vertical line. The top of the bar represents the highest price of the day, the bottom of the bar represents the lowest price of the day and a small horizontal hash on the right of the bar is used to represent the closing price of the day. Sometimes, the opening price of the day is marked as a hash on the left side of the bar.



Japanese candlestick charts

The Japanese candle stick chart shows the highest price, the lowest price, the opening price and the closing price of shares on a day to day basis. The highest price and the lowest price of a day are joined by a vertical bar. The opening price and closing price of the day which would fall between the highest and the lowest prices would be represented by a rectangle so that the price bar chart looks like a candlestick. Thus, each day's activity is represented by a candlestick.



Trends and trend reversal

Trend is the movement of share prices in the market. when the prices move upwards, it is a rising trend or uptrend. When the prices move downwards, we have a falling trend or downtrend. We have a flat trend when the prices move within a narrow range.

The change in the direction of trend is referred to as trend reversal. A share that exhibits a rising trend may start to move narrowly or fall after sometime. This change in the direction of movement represents a trend reversal.

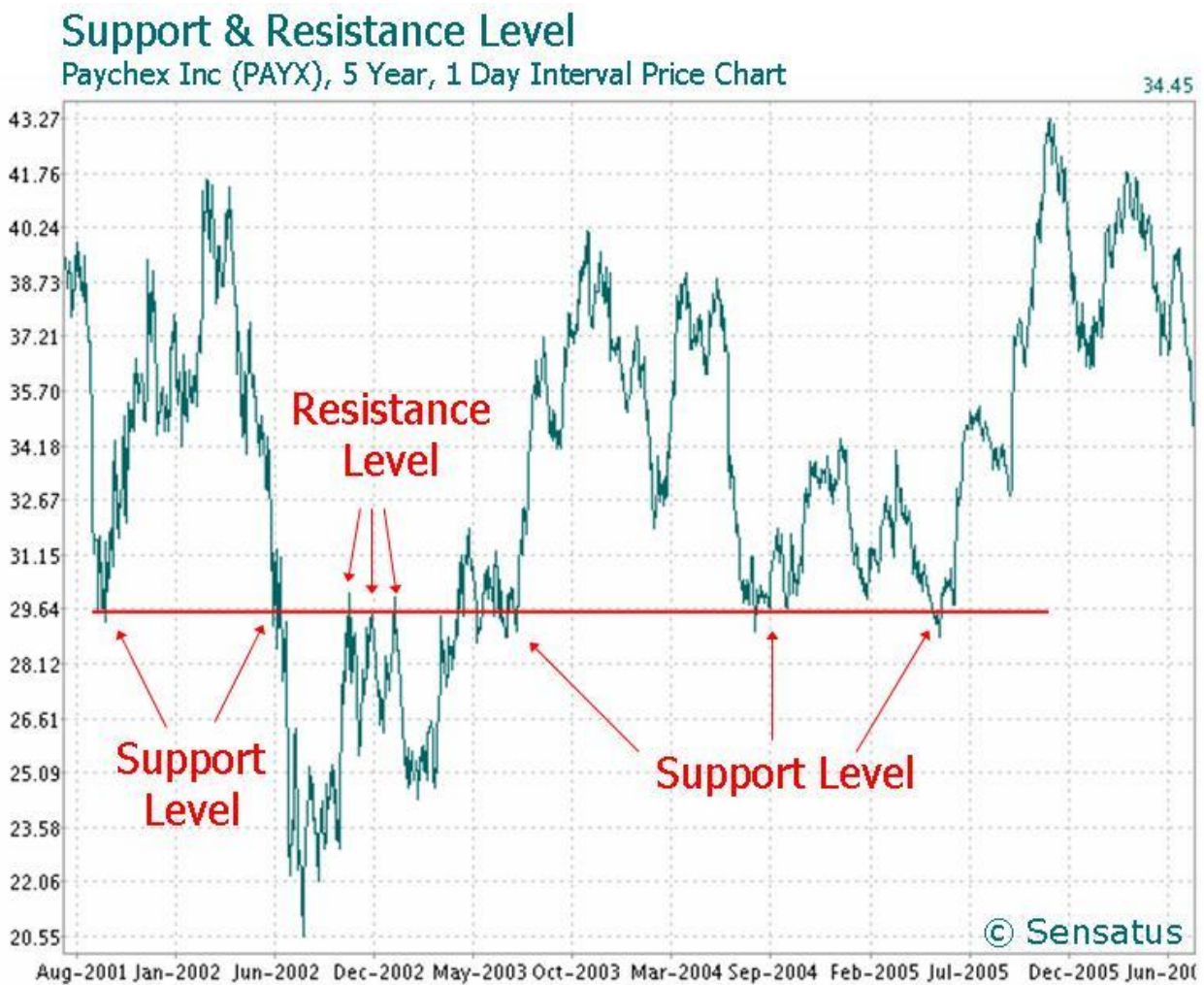
Chart patterns

When the price bar charts of several days are drawn together, certain patterns emerge. these patterns are used by the technical analysts to identify trend reversal and predict the future movement of prices, the chart patterns may be classified as support and resistance patterns, reversal patterns and continuation patterns.

Support and resistance

Support and resistance are price levels at which the downtrend or uptrend in price movements is reversed. Support occurs when price is falling but bounces back or reverses direction every time it reaches a particular level. When all these low points are connected by a horizontal line, it forms the support line.

Resistance occurs when the share price moves upwards. The price may fall back every time it reaches a particular level. A horizontal line joining these tops form the resistance level

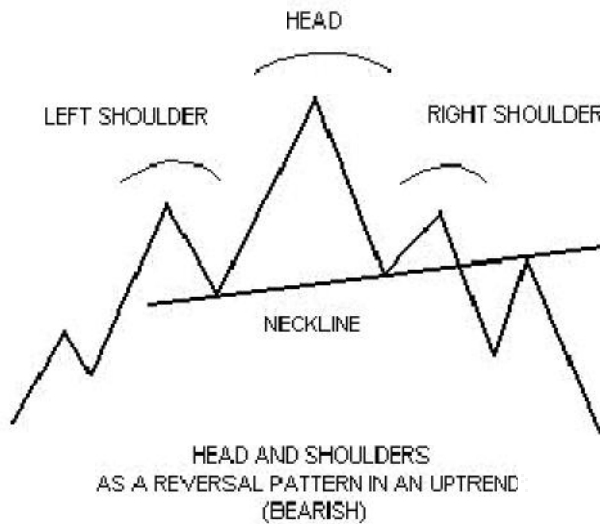


Reversal patterns

Price movements exhibit uptrend and downtrends. The trends reverse direction after a period of time. These reversals can be identified with the help of certain chart formations that typically occur during these trend reversals.

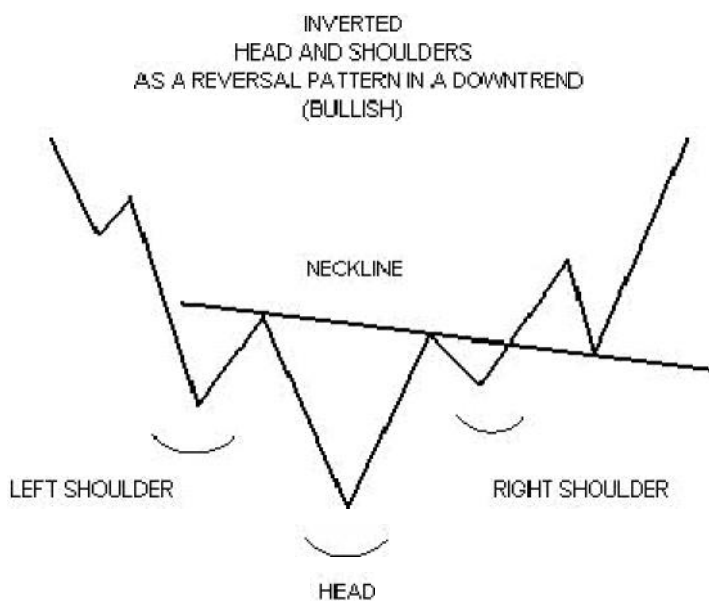
Head and shoulder formation

Head and shoulder formation occurs at the end of a long uptrend. This formation exhibits a hump or top followed by a still higher top or peak and then another hump or lower top. This formation resembles the head and two shoulders of a man and hence the name head and shoulder formation.



Inverse head and shoulder formation

This pattern is the reverse of the head and shoulder formation describe above and is really an inverted head and shoulder pattern .this occurs at the end of a bear phase and consist of three distinct bottoms.



Elliot wave theory

Wave theory formulated by Ralph Elliot, known as Elliot wave theory in 1934 by Elliot after analyzing seventy five years of stock price movements and charts .from his studies he concluded that the market movement was quit orderly and followed by a pattern of waves.

A wave is a movement of the market price from one change in the direction to the next change in the same direction .the wave is the result of buying and selling impulses emerging from the demand and supply pressures on the market. Depending on the demand and supply pressures, wave is generated in the prices.

According to this theory, the market moves in waves. a movement in a particular direction can be represented by five distinct waves .of these five waves ,three waves are in the direction of the movement and are termed as impulse waves. Two waves are against the direction of the movement and are termed as corrective waves or reaction wave.

One complete cycle consists of waves made up of two distinct phases, bullish and bearish .once the full cycle of waves is completed after the termination of the 8 wave movement, there will be a fresh cycle starting with similar impulses arising out of market trading.

The Elliot wave theory is based on the principle that action I followed by reaction. Although the wave theory is not perfect and there are many limitations in its practical use, it is accepted as one of the tools of technical analysis. The theory is used for predicting the future price changes and in deciding the timing of investments.

The patterns link to form five and three-wave structures which themselves underlie self-similar wave structures of increasing size or higher degree. Note the lowermost of the three idealized cycles. In the first small five-wave sequence, waves 1, 3 and 5 are motive, while waves 2 and 4 are corrective. This signals that the movement of the wave one degree higher is upward. It also signals the start of the first small three-wave corrective sequence. After the initial five waves up and three waves down, the sequence begins again and the self-similar fractal geometry begins to unfold according to the five and three-wave structure which it underlies one degree higher. The completed motive pattern includes 89 waves, followed by a completed corrective pattern of 55 waves.

Each degree of a pattern in a financial market has a name. Practitioners use symbols for each wave to indicate both function and degree—numbers for motive waves, letters for corrective waves (shown in the highest of the three idealized series of wave structures or degrees). Degrees are relative; they are defined by form, not by absolute size or duration. Waves of the same degree may be of very different size and/or duration.

The classification of a wave at any particular degree can vary, though practitioners generally agree on the standard order of degrees (approximate durations given):

- Grand super cycle: multi-century
- Super cycle: multi-decade (about 40–70 years)
- Cycle: one year to several years (or even several decades under an Elliott Extension)
- Primary: a few months to a couple of years
- Intermediate: weeks to months
- Minor: weeks
- Minute: days
- Minuette: hours
- Subminuette: minutes

Efficient Market Hypothesis

Efficient Market Hypothesis asserts that [financial markets](#) are "informationally efficient". In consequence of this, one cannot consistently achieve returns in excess of average market returns on a [risk-adjusted basis](#), given the information available at the time the investment is made.

There are three major versions of the hypothesis: "**weak**", "**semi-strong**", and "**strong**". The weak-form EMH claims that prices on traded assets (e.g., [stocks](#), [bonds](#), or property) already reflect all past publicly available [information](#). The semi-strong-form EMH claims both that prices reflect all publicly available information and that prices instantly change to reflect new public information. The strong-form EMH additionally claims that prices instantly reflect even hidden or "insider" information. Critics have blamed the belief in [rational markets](#) for much of the [late-2000s financial crisis](#). In response, proponents of the hypothesis have stated that market efficiency does not mean having no uncertainty about the future, that market efficiency is a simplification of the world which may not always hold true, and that the market is practically efficient for investment purposes for most individuals.

Weak-form efficiency

In weak-form efficiency, future prices cannot be predicted by analyzing prices from the past. Excess returns cannot be earned in the long run by using investment strategies based on historical share prices or other historical data. [Technical analysis](#) techniques will not be able to consistently produce excess returns, though some forms of [fundamental analysis](#) may still provide excess returns. Share prices exhibit no serial dependencies, meaning that there

are no "patterns" to asset prices. This implies that future price movements are determined entirely by information not contained in the price series. Hence, prices must follow a random walk. This 'soft' EMH does not require that prices remain at or near equilibrium, but only that market participants not be able to systematically profit from market [inefficiencies](#). However, while EMH predicts that all price movement (in the absence of change in fundamental information) is random (i.e., non-trending), many studies have shown a marked tendency for the stock markets to trend over time periods of weeks or longer and that, moreover, there is a positive correlation between degree of trending and length of time period studied (but note that over long time periods, the trending is [sinusoidal](#) in appearance). Various explanations for such large and apparently non-random price movements have been promulgated.

The problem of algorithmically constructing prices which reflect all available information has been studied extensively in the field of computer science. For example, the complexity of finding the arbitrage opportunities in pair betting markets has been shown to be [NP-hard](#).

Semi-strong-form efficiency

In semi-strong-form efficiency, it is implied that share prices adjust to publicly available new information very rapidly and in an unbiased fashion, such that no excess returns can be earned by trading on that information. Semi-strong-form efficiency implies that neither [fundamental analysis](#) nor [technical analysis](#) techniques will be able to reliably produce excess returns. To test for semi-strong-form efficiency, the adjustments to previously unknown news must be of a reasonable size and must be instantaneous. To test for this, consistent upward or downward adjustments after the initial change must be looked for. If there are any such adjustments it would suggest that investors had interpreted the information in a biased fashion and hence in an inefficient manner.

Strong-form efficiency

In strong-form efficiency, share prices reflect all information, public and private, and no one can earn excess returns. If there are legal barriers to private information becoming public, as with insider trading laws, strong-form efficiency is impossible, except in the case where the laws are universally ignored. To test for strong-form efficiency, a market needs to exist where investors cannot consistently earn excess returns over a long period of time. Even if some money managers are consistently observed to beat the market, no refutation even of strong-form efficiency follows: with hundreds of thousands of fund managers worldwide, even a normal distribution of returns (as efficiency predicts) should be expected to produce a few dozen "star" performers.

DIVIDEND DISCOUNT MODELS

In the strictest sense, the only cash flow you receive from a firm when you buy publicly traded stock is the dividend. The simplest model for valuing equity is the dividend discount model -- the value of a stock is the present value of

expected dividends on it. While many analysts have turned away from the dividend discount model and viewed it as outmoded, much of the intuition that drives discounted cash flow valuation is embedded in the model. In fact, there are specific companies where the dividend discount model remains a useful tool for estimating value. This chapter explores the general model as well as specific versions of it tailored for different assumptions about future growth. It also examines issues in using the dividend discount model and the results of studies that have looked at its efficacy.

The General Model When an investor buys stock, she generally expects to get two types of cash flows - dividends during the period she holds the stock and an expected price at the end of the holding period. Since this expected price is itself determined by future dividends, the value of a stock is the present value of dividends through infinity.

When an investor buys a share of common stock, it is reasonable to expect that what an investor is willing to pay for the share reflects what he expects to receive from it. What he expects to receive are future cash flows in the form of dividends and the value of the stock when it is sold.

The value of a share of stock should be equal to the present value of all the future cash flows you expect to receive from that share. Since common stock never matures, today's value is the present value of an infinite stream of cash flows. And also, common stock dividends are not fixed, as in the case of preferred stock. Not knowing the amount of the dividends -- or even if there will be future dividends -- makes it difficult to determine the value of common stock..

The basic model

The basic premise of stock valuation is that in a market with rational markets, the value of the stock today is the present value of all future cash flows that will accrue to that investor in the stock. In other words, you get (in a present value sense) what you pay for. Using time value of money principles, we can determine the price of a stock today based on the discounted value of future cash flows. We refer to this price as the intrinsic value of the stock because it is the value of the stock that is perceived based on all available information. Is it always right on target? No, but it's close.

Dividend Valuation Model

If dividends are constant forever, the value of a share of stock is the present value of the dividends per share per period, in perpetuity. Let D_1 represent the constant dividend per share of common stock expected next period and each period thereafter, forever, P_0 represent the price of a share of stock today, and r the required rate of return on common stock.¹ The current price of a share of common stock, P_0 , is:

$$P_0 = D_1 \div r.$$

The required rate of return is the compensation for the time value of money tied up in their investment and the uncertainty of the future cash flows from these investments. The greater the uncertainty, the greater the required rate of return. If the current dividend is \$2 per share and the required rate of return is 10 percent, the value of a share of stock is Rs.20. Therefore, if you pay Rs.20 per share and dividends remain constant at Rs.2 per share, you will earn a 10 percent return per year on your investment every year.

If dividends grow at a constant rate, the value of a share of stock is the present value of a growing cash flow. Let D_0 indicate this period's dividend. If dividends grow at a constant rate, g , forever, the present value of the common stock is the present value of all future dividends, which – in the unique case of dividends growing at the constant rate g – becomes what is commonly referred to as the dividend valuation model (DVM):

$$P_0 = \frac{D_0 (1 + g)}{r - g}$$

This model is also referred to as the Gordon model.² This model is a one of a general class of models referred to as the dividend discount model (DDM).

Example 1

Suppose dividends on a stock today are RS.5 per share and dividends are expected to grow at a rate of 5% per year, ad infinitum. If the required rate of return is 8%, what is the value of a share of stock?

Solution

$$P_0 = \frac{D_0 (1 + g)}{r - g}$$

$$P_0 = \frac{5[1+.05]}{.08-.05} = 175$$

Example 2

Suppose dividends on a stock today are Rs.1.20 per share and dividends are expected to decrease each year at a rate of 2% per year, forever. If the required rate of return is 10%, what is the value of a share of stock?

$$P_0 = \frac{D_0 (1 + g)}{r - g}$$

$$\frac{=1.2[1-.02]}{[.10-.02]} = 9.80$$

PRICE EARNING MULTIPLE APPROACH

Earnings multiples remain the most commonly used measures of relative value. In this chapter, you begin with a detailed examination of the price earnings ratio and then move on to consider a variant that is often used for technology firms – the price earnings to growth ratio (PEG). You also look at value multiples, and in particular, the value to EBITDA multiple and other variants of earnings multiples in the second part of the chapter. You will use the four-step process described in chapter 8 to look at each of these multiples.

Price Earnings Ratio (PE)

The price-earnings multiple (PE) is the most widely used and misused of all multiples. Its simplicity makes it an attractive choice in applications ranging from pricing initial public offerings to making judgments on relative value, but its relationship to a firm's financial fundamentals is often ignored, leading to significant errors in applications. This chapter provides some insight into the determinants of price-earnings ratios and how best to use them in valuation.

Definitions of PE ratio

The price earnings ratio the ratio of the market price per share to the earnings per share:

$$PE = \text{Market Price per share} / \text{Earnings per share}$$

The PE ratio is consistently defined, with the numerator being the value of equity per share and the denominator measuring earnings per share, which is a measure of equity earnings. The biggest problem with PE ratios is the variations on earnings per share used in computing the multiple. In chapter 8, you saw that PE ratios could be computed using current earnings per share, trailing earnings per share, forward earnings per share, fully diluted earnings per share and primary earnings per share. With technology firms, the PE ratio can be very different depending upon which measure of earnings per share is used. This can be explained by two factors:

- *The high growth in earnings per share at these firms:* Forward earnings per share can be substantially higher than trailing earnings per share, which, in turn, can be significantly different from current earnings per share.
- *Management Options:* Since technology firms tend to have far more employee options outstanding, relative to the number of shares, the differences between diluted and primary earnings per share tend to be large.

When the PE ratios of technology firms are compared, it is difficult to ensure that the earnings per share are uniformly estimated across the firms for the following reasons:

- Technology firms often grow by acquiring other firms, and they do not account for with acquisitions the same way. Some do only stock-based acquisitions and use only pooling, others use a mixture of pooling and purchase accounting, still others use purchase accounting and write off all or a portion of the goodwill as in-process R&D. These different approaches lead to different measures of earnings per share and different PE ratios.
- Using diluted earnings per share in estimating PE ratios might bring the shares that are covered by management options into the multiple, but they treat options that are deep in-the-money or only slightly in-the-money as equivalent.
- The expensing of R&D gives firms a way of shifting earnings from period to period, and penalizes those firms that are spending more on research and development.

Technology firms that account for acquisitions with pooling and do not invest in R&D can have much lower PE ratios than technology firms that use purchase accounting in acquisitions and invest substantial amounts in R&D

Determinants of the PE ratio

The fundamentals that determine multiples were extracted using a discounted cash flow model – an equity model like the dividend discount model for equity multiples and a firm value model for firm multiples. The price earnings ratio, being an equity multiple, can be analyzed using an equity valuation model. In this section, the fundamentals that determine the price earnings ratio for a high growth firm are analyzed.

A Discounted Cash flow Model perspective on PE ratios

In chapter 8, you derived the PE ratio for a stable growth firm from the stable growth dividend discount model:

$$\frac{P_0}{EPS_0} = PE = \frac{\text{Payout Ratio} * (1 + g_n)}{r - g_n}$$

If the PE ratio is stated in terms of expected earnings in the next time period, this can be simplified to,

$$\frac{P_0}{EPS_1} = \text{Forward PE} = \frac{\text{Payout Ratio}}{k_e - g_n}$$

The PE ratio is an increasing function of the payout ratio and the growth rate, and a decreasing function of the riskiness of the firm.

The price-earnings ratio for a high growth firm can also be related to fundamentals. In the special case of the two-stage dividend discount model, this relationship can be made explicit fairly simply. When a firm is expected to be in high growth for the next n years and stable growth thereafter, the dividend discount model can be written as follows:

$$P_0 = \frac{\text{EPS}_0 * \text{Payout Ratio} * (1 + g) * \left(1 - \frac{(1 + g)^n}{(1 + k_{e,hg})^n}\right)}{k_{e,hg} - g} + \frac{\text{EPS}_0 * \text{Payout Ratio}_n * (1 + g)^n * (1 + g_n)}{(k_{e,st} - g_n)(1 + k_{e,hg})^n}$$

where,

EPS_0 = Earnings per share in year 0 (Current year)

g = Growth rate in the first n years

$k_{e,hg}$ = Cost of equity in high growth period

$k_{e,st}$ = Cost of equity in stable growth period

Payout = Payout ratio in the first n years

g_n = Growth rate after n years forever (Stable growth rate)

Payout_n = Payout ratio after n years for the stable firm

Bringing EPS_0 to the left hand side of the equation,

$$\frac{P_0}{\text{EPS}_0} = \frac{\text{Payout Ratio} * (1 + g) * \left(1 - \frac{(1 + g)^n}{(1 + k_{e,hg})^n}\right)}{k_{e,hg} - g} + \frac{\text{Payout Ratio}_n * (1 + g)^n * (1 + g_n)}{(k_{e,st} - g_n)(1 + k_{e,hg})^n}$$

The left hand side of the equation is the price earnings ratio. It is determined by--

(a) *Payout ratio during the high growth period and in the stable period:* The PE ratio increases as the payout ratio increases.

(b) *Riskiness (through the discount rate r):* The PE ratio becomes lower as riskiness increases.

(c) *Expected growth rate in Earnings, in both the high growth and stable phases:* The PE increases as the growth rate increases, in either period.

This formula is general enough to be applied to any firm, even one that is not paying dividends right now. In fact, the ratio of FCFE to earnings can be substituted for the payout ratio for firms that pay significantly less in dividends than they can afford to.

Illustration: Estimating the PE ratio for a high growth firm in the two-stage model

Assume that you have been asked to estimate the PE ratio for a firm that has the following characteristics:

Growth rate in first five years = 25% Payout ratio in first five years = 20%

Growth rate after five years = 8% Payout ratio after five years = 50%

Beta = 1.0

Riskfree rate = T.Bond Rate = 6%

Required rate of return¹ = 6% + 1(5.5%)= 11.5%

$$PE = \frac{0.2 * (1.25) * \left(1 - \frac{(1.25)^5}{(1.115)^5}\right)}{(.115 - .25)} + \frac{0.5 * (1.25)^5 * (1.08)}{(.115-.08) (1.115)^5} = 28.75$$

CHAPTER 4

PORTFOLIO ANALYSIS AND FINANCIAL DERIVATIVES

After security analysis we are doing portfolio management. **Portfolio** is a group of financial assets such as shares, stocks, bonds, debt instruments, mutual funds, cash equivalents, etc. A portfolio is planned to stabilize the risk of non-performance of various pools of investment. Portfolio Management guides the investor in a method of selecting the best available securities that will provide the expected rate of return for any given degree of risk and also to mitigate (reduce) the risks. It is a strategic decision which is addressed by the top-level managers. For example, Consider Mr. Arun has Rs.100,000 and wants to invest his money in the financial market other than real estate investments. Here, the rational objective of the investor (Mr. Arun) is to earn a considerable rate of return with less possible risk.

So, the ideal recommended portfolio for investor Mr. Arun can be as follows:-

NO.	SECURITIES	Investment	percentage	Security	Returns
1	Govt.Bonds	25,000	25%	High	Low
2	Bank Fixed Deposit	15,000	15%	High	Average
3	Equity Share	35,000	35%	Low	High
4	Mutual Funds	25,000	25%	Average	Average

Objectives of Portfolio Management

The main objectives of portfolio management in finance are as follows:-

1. **Security of Principal Investment:** Investment safety or minimization of risks is one of the most important objectives of portfolio management. Portfolio management not only involves keeping the investment intact but also contributes towards the growth of its purchasing power over the period. The motive of a financial portfolio management is to ensure that the investment is absolutely safe. Other factors such as income, growth, etc., are considered only after the safety of investment is ensured.
2. **Consistency of Returns:** Portfolio management also ensures to provide the stability of returns by reinvesting the same earned returns in profitable and good portfolios. The portfolio helps to yield steady returns. The earned returns should compensate the opportunity cost of the funds invested.

3. **Capital Growth:** Portfolio management guarantees the growth of capital by reinvesting in growth securities or by the purchase of the growth securities. A portfolio shall appreciate in value, in order to safeguard the investor from any erosion in purchasing power due to inflation and other economic factors. A portfolio must consist of those investments, which tend to appreciate in real value after adjusting for inflation.
4. **Marketability:** Portfolio management ensures the flexibility to the investment portfolio. A portfolio consists of such investment, which can be marketed and traded. Suppose, if your portfolio contains too many unlisted or inactive shares, then there would be problems to do trading like switching from one investment to another. It is always recommended to invest only in those shares and securities which are listed on major stock exchanges, and also, which are actively traded.
5. **Liquidity:** Portfolio management is planned in such a way that it facilitates to take maximum advantage of various good opportunities upcoming in the market. The portfolio should always ensure that there are enough funds available at short notice to take care of the investor's liquidity requirements.
6. **Diversification of Portfolio:** Portfolio management is purposely designed to reduce the risk of loss of capital and/or income by investing in different types of securities available in a wide range of industries. The investors shall be aware of the fact that there is no such thing as a zero risk investment. More over relatively low risk investment give correspondingly a lower return to their financial portfolio.
7. **Favorable Tax Status:** Portfolio management is planned in such a way to increase the effective yield an investor gets from his surplus invested funds. By minimizing the tax burden, yield can be effectively improved. A good portfolio should give a favorable tax shelter to the investors. The portfolio should be evaluated after considering income tax, capital gains tax, and other taxes.

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

Expected Returns and Variances

Expected Return is the return on a risky asset expected in the future. Given all possible outcomes for a particular investment, the average rate of return is called the expected return. The actual return can differ from the expected return.

The expected return is a weighted average of the possible rates of return:

$$E(R) = (P_{r1} \times R_1) + (P_{r2} \times R_2) + (P_{r3} \times R_3) + \dots + (P_{rT} \times R_T) ,$$

Where **T** is the number of possible states of the economy, **P_{r1}**, **P_{r2}**, **P_{r3}**, and **P_{rT}** are the probabilities of the respective states of the economy, and **R₁**, **R₂**, **R₃**, and **R_T** are the possible rates of return. Further, we define the expected risk premium as the expected return less the risk-free rate:

$$\text{Risk premium} = \text{Expected return} - \text{Risk-free rate} = E(R) - R_f$$

$$E(R) = [.20 \times (-.07)] + [.55 \times .13] + [.25 \times .30] = (-.014) + (.0715) + (.075) = .1325 = 13.25\%$$

Calculating the Variance

$$\text{Var}(R) = \sigma^2 = \sum_{i=1}^n p_i (R_i - E(R))^2$$

Variance measures the dispersion of points around the mean of a distribution. In this context, we are attempting to characterize the variability of possible future security returns around the expected return. In other words, we are trying to quantify risk and return. Variance measures the total risk of the possible returns.

Portfolio Expected Returns

The expected return for a portfolio is the weighted average of the expected returns of the assets which are included in the portfolio

$$E(R_p) = [x_1 \times E(R_1)] + [x_2 \times E(R_2)] + [x_3 \times E(R_3)] + \dots + [x_n \times E(R_n)]$$

where **n** is the number of assets in the portfolio, **x₁**, **x₂**, **x₃**, and **x_n** are the portfolio weights, and **E(R₁)**, **E(R₂)**, **E(R₃)**, and **E(R_n)** are the expected returns on assets 1 through n.

EXAMPLE

You own a portfolio that is 20 percent invested in Stock X, 45 percent in Stock Y, and 35 percent in Stock Z. The expected returns on these three stocks are 10 percent, 14 percent, and 16 percent, respectively. What is the expected return on the portfolio?

$$E(R_p) = [x_1 \times E(R_1)] + [x_2 \times E(R_2)] + [x_3 \times E(R_3)] + \dots + [x_n \times E(R_n)]$$

$$E(R_p) = (.20 \times .10) + (.45 \times .14) + (.35 \times .16) = .02 + .063 + .056 = .139 = 13.90\%$$

Portfolio Variance

Unlike expected return, the variance of a portfolio is not the weighted sum of the individual security variances. Combining securities into portfolios can reduce the total variability of returns.

Consider the following information:

State of Economy	Probability of State of Economy	Rate of Return If State Occurs		
		Stock A	Stock B	Stock C
Boom	.15	.30	.45	.33
Good	.45	.12	.10	.15
Poor	.35	.01	-.15	-.05
Bust	.05	-.20	-.30	-.09

- a. Your portfolio is invested 30 percent each in A and C and 40 percent in B. What is the expected return of the portfolio?

This portfolio does not have an equal weight in each asset. We first need to find the return of the portfolio in each state of the economy. To do this, we will multiply the return of each asset by its portfolio weight and then sum the products to get the portfolio return in each state of the economy. Doing so, we get:

$$\text{Boom: } E(R_p) = .30(.30) + .40(.45) + .30(.33) = .3690 \text{ or } 36.90\%$$

$$\text{Good: } E(R_p) = .30(.12) + .40(.10) + .30(.15) = .1210 \text{ or } 12.10\%$$

$$\text{Poor: } E(R_p) = .30(.01) + .40(-.15) + .30(-.05) = -.0720 \text{ or } -7.20\%$$

$$\text{Bust: } E(R_p) = .30(-.20) + .40(-.30) + .30(-.09) = -.2070 \text{ or } -20.70\%$$

And the expected return of the portfolio is:

$$E(R_p) = .15(.3690) + .45(.1210) + .35(-.0720) + .05(-.2070) = .0743 \text{ or } 7.43\%$$

The Principle of Diversification

Spreading an investment across a number of assets will eliminate some, but not all, of the risk. The portion of variability present in a single security that is not present in a portfolio of securities is called diversifiable risk. The level of variance that is present in a portfolio of assets is non diversifiable risk

- **Diversification and Unsystematic Risk** - When securities are combined into portfolios, their unique or unsystematic risks tend to cancel out, leaving only the variability that affects all securities to some degree. Thus, diversifiable risk is synonymous with unsystematic risk. Large portfolios have little or no unsystematic risk.

- Diversification and Systematic Risk - Systematic risk cannot be eliminated by diversification since it represents the variability due to influences that affect all securities to some degree. Therefore, systematic risk and nondiversifiable risk are the same.

Total risk = Non diversifiable risk + Diversifiable risk = Systematic risk + Unsystematic risk

Systematic Risk and Beta

The Systematic Risk Principle - The systematic risk principle: The reward for bearing risk depends only on the systematic risk of the investment. The implication: The expected return on an asset depends only on that asset's systematic risk. A corollary: No matter how much total risk an asset has, its expected return depends only on its systematic risk.

Measuring Systematic Risk

The systematic risk of an asset is measured by its [beta coefficient](#) (β), which measures the amount of systematic risk for a particular asset relative to the amount of systematic risk for the average asset (by definition, β_M , the beta of the "market portfolio" equals 1.0). Since systematic risk is the relevant risk for a well-diversified investor, the expected return is dependent on β . This is true regardless of the stock's standard deviation.

Portfolio Betas

While portfolio variance is not a weighted average of the individual asset betas, portfolio betas are a weighted average of the individual asset betas.

$$\beta_p = (x_1 \times \beta_1) + (x_2 \times \beta_2) + (x_3 \times \beta_3) + \dots + (x_n \times \beta_n) ,$$

where n is the number of assets in the portfolio, $x_1, x_2, x_3,$ and x_n are the portfolio weights, and $\beta_1, \beta_2, \beta_3,$ and β_n are the betas of the assets in the portfolio.

Example:

Stock	Amount Invested	Portfolio Weight	Beta	Product
SBI	6,000	6,000 / 12,000 = 50%	1.47	.735
Infosys	4,000	4,000 / 12,000 = 33.33%	1.19	.397
ACC	2,000	2,000 / 12,000 = 16.67%	0.91	.152
	12,000	100%		1.284

Capital Market Line (CML)

The graphic representation of the relationship between systematic risk and expected return. The CML is an indicator of the trade-off between expected return and risk as measured by standard deviation for efficient portfolios.

Beta and the Risk Premium - The relationship between a portfolio's expected return, $E(R_p)$, and its systematic risk, β_p , is linear. The slope of the line is the reward-to-risk ratio, which indicates what an investor's compensation would be for taking on risk. The reward-to-risk ratio for a given asset equals its risk premium divided by its beta.

A riskless asset has a beta of 0. When a risky asset with $\beta > 0$ is combined with a riskless asset, the resulting expected return is the weighted sum of the expected returns and the portfolio beta is the weighted sum of the betas. By varying the amount invested in each asset, we can get an idea of the relationship between portfolio expected returns and betas. As can be seen, all of the risk-return combinations lie on a straight line. Remember that the equation for a line is:

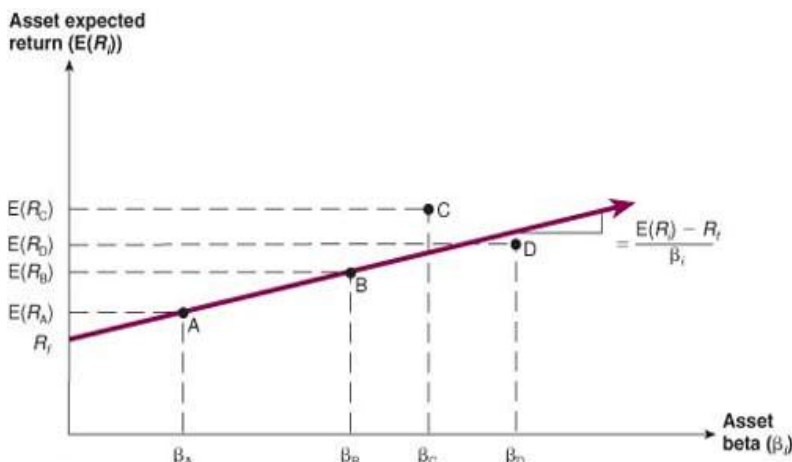
$$y = mx + b$$

where y = expected return, x = beta, m = slope* = $(E(R_M) - R_f)$, and b = y-intercept = risk-free rate

Assumptions:

- Homogeneous expectations
- No transaction costs
- All securities are infinitely divisible
- No taxes
- No trading price impacts, i.e., no individual impacts the market.
- One period time horizon
- Utilize the mean/variance criteria for decision making
- Borrowing/Lending at the risk free rate

Expected Returns and Systematic Risk



The fundamental relationship between beta and expected return is that all assets must have the same reward-to-risk ratio, $[E(R_i) - R_f] / \beta_i$. This means that they would all plot on the same straight line. Assets A and B are examples of this behavior. Asset C's expected return is too high; Asset D's is too low.

Capital Asset Pricing Model (CAPM)

The CAPM is an equation relating the required rate of return for any security (or portfolio) with the risk for that security as measured by beta.

$$R(R_i) = R_{Free} + S_i [E(R_M) - R_{Free}]$$

Required rate of return_i = risk-free rate + risk premium

Reward for waiting = price of time = y-intercept = R_{Free}

Reward per unit of Risk = the price of risk = slope = the market risk premium

$$R(R_i) = R_{Free} + \left(\frac{\dagger_{i,M}}{\dagger_M} \right) \left(\frac{(E(R_M) - R_{Free})}{\dagger_M} \right)$$

Required rate of return_i = (Price of time) + (Amount of risk) (Price of risk)

where the Beta of Security_i equals

$$S_i = \frac{\dagger_{iM}}{\dagger_M^2} = \frac{\dots_{iM} \dagger_i}{\dagger_M}$$

Market portfolio beta equals 1.

Risk-free security beta equals 0.

Derivatives

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

physical commodity. 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:

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

Types of Derivative Contracts

Derivatives comprise four basic contracts namely Forwards, Futures, Options and Swaps. Over the past couple of decades several exotic contracts have also emerged but these are largely the variants of these basic contracts. Let us briefly define some of the contracts

Forward Contracts

These are promises to deliver an asset at a pre- determined date in future at a predetermined price. Forwards are highly popular on currencies and interest rates. The contracts are traded over the counter (i.e. outside the stock exchanges, directly between the two parties) and 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. A forward contract is an agreement to buy or sell an asset on a specified date for a specified price. One of the parties to the contract assumes a long position and agrees to buy the underlying asset on a certain specified future date for a certain specified price. The other party assumes a short position and agrees to sell the asset on the same date for the same price. Other contract details like delivery date, price and quantity are negotiated bilaterally by the parties to the contract. The forward contracts are normally traded outside the exchanges.

Features of forward contracts

- They are bilateral contracts and hence exposed to counter-party risk.
- Each contract is custom designed, and hence is unique in terms of contract size, expiration date and the asset type and quality.
- The contract price is generally not available in public domain.
- On the expiration date, the contract has to be settled by delivery of the asset.
- If the party wishes to reverse the contract, it has to compulsorily go to the same counterparty, which often results in high prices being charged.

Limitations of forward markets

Forward markets world-wide are posed by several problems:

- Lack of centralization of trading,
- Illiquidity
- Counterparty risk

In the first two of these, the basic problem is that of too much flexibility and generality. The forward market is like a real estate market, in which any two consenting adults can form contracts against each other. This often makes them design the terms of the deal which are convenient in that specific situation, but makes the contracts non-tradable. Counterparty risk arises from the possibility of default by any one party to the transaction. When one of the two sides to the transaction declares bankruptcy, the other suffers. When forward markets trade standardized contracts, though it avoids the problem of illiquidity, still the counterparty risk remains a very serious issue.

Futures Contracts:

A futures contract is an agreement between two parties to buy or sell an asset at a certain time in future at a certain price. These are basically exchange traded, standardized contracts. The exchange stands guarantee to all transactions and counterparty risk is largely eliminated. The buyers of futures contracts are considered having a long position whereas the sellers are considered to be having a short position. It should be noted that this is similar to any asset market where anybody who buys is long and the one who sells in short. 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. It is a standardized contract with standard underlying instrument, a standard quantity and quality of the underlying instrument that can be delivered, (or which can be used for reference purposes in settlement) and a standard timing of such settlement. A futures contract may be offset prior to maturity by entering into an equal and opposite transaction. The standardized items in a futures contract are:

- Quantity of the underlying
- Quality of the underlying
- The date and the month of delivery
- The units of price quotation and minimum price change
- Location of settlement

Distinction between Futures and Forwards

Futures

Forwards

Trade on an organized exchange	OTC in nature
Standardized contract terms	Customized contract terms
More liquid	Less liquid
Requires margin payments payment	No margin
Follows daily settlement happens at end of period	Settlement

Futures Terminology

- **Spot price:** The price at which an underlying asset trades in the spot market.
- **Futures price:** The price that is agreed upon at the time of the contract for the delivery of an asset at a specific future date.
- **Contract cycle:** It is the period over which a contract trades. The index futures contracts on the NSE have one-month, two-month and three-month expiry cycles which expire on the last Thursday of the month. Thus a January expiration contract expires on the last Thursday of January and a February expiration contract ceases trading on the last Thursday of February. On the Friday following the last Thursday, a new contract having a three month expiry is introduced for trading.
- **Expiry date:** is the date on which the final settlement of the contract takes place.
- **Contract size:** The amount of asset that has to be delivered less than one contract. This is also called as the lot size.
- **Basis:** Basis is defined as the futures price minus the spot price. There will be a different basis for each delivery month for each contract. In a normal market, basis will be positive. This reflects that futures prices normally exceed spot prices.
- **Cost of carry:** Measures the storage cost plus the interest that is paid to finance the asset less the income earned on the asset.
- **Initial margin:** The amount that must be deposited in the margin account at the time a futures contract is first entered into is known as initial margin.

• **Marking-to-market:** In the futures market, at the end of each trading day, the margin account is adjusted to reflect the investor's gain or loss depending upon the futures closing price. This is called marking-to-market.

Options Contracts

Options give the buyer (holder) a right but not an obligation to buy or sell an asset in future. Options are of two types - **calls and puts**. Calls give the buyer the right but not the obligation to buy a given quantity of the underlying asset, at a given price on or before a given future date. Puts give the buyer the right, but not the obligation to sell a given quantity of the underlying asset at a given price on or before a given date. One can buy and sell each of the contracts. When one buys an option he is said to be having a long position and when one sells he is said to be having 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 settlement date. In case of options only the seller (also called option writer) is under an obligation and not the buyer (also called option purchaser). The buyer has a right to buy (call options) or sell (put options) the asset from / to the seller of the option but he may or may not exercise this 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 seller has to deliver the asset to the buyer of the option and for a put option the seller has to receive the asset from the buyer of the option). An option can be exercised at the expiry of the contract period (which is known as European option contract) or anytime up to the expiry of the contract period (termed as American option contract).

Option Terminology

- **Index options:** Have the index as the underlying. They can be European or American. They are also cash settled.
- **Stock options:** They are options on individual stocks and give the holder the right to buy or sell shares at the specified price. They can be European or American.
- **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 buyer exercises on him.

There are two basic types of options, call options and put options.

- **Call option:** It gives the holder the right but not the obligation to buy an asset by a certain date for a certain price.

- **Put option:** A It gives the holder the right but not the obligation to sell an asset by a certain date for a certain price.

- **Option price/premium:** It is the price which the option buyer pays to the option seller. It is also referred to as the option premium.

Expiration date: The date specified in the options contract is known as the expiration date, the exercise date, the strike 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 up to the expiration date.

- **European options:** These can be exercised only on the expiration date itself. European options are easier to analyze than American options and 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 > strike price). If the index is much higher than the strike price, the call is said to be deep ITM. In the case of a put, the put is 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 = strike price).

- **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 < strike price). 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.

- **Time value of an option:** 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.

Swaps

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

The two commonly used swaps are:

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

Participants in a Derivative Market

The derivatives market is similar to any other financial market and has following three broad Categories of participants:

Hedgers

These are investors with a present or anticipated exposure to the underlying asset which is subject to price risks. Hedgers use the derivatives markets primarily for price risk management of assets and portfolios.

Speculators

These are individuals who take a view on the future direction of the markets. They take a view whether prices would rise or fall in future and accordingly buy or sell futures and options to try and make a profit from the future price movements of the underlying asset.

Arbitrageurs

They take positions in financial markets to earn riskless profits. The arbitrageurs take short and long positions in the same or different contracts at the same time to create a position which can generate a riskless profit.

History of Derivatives Markets in India

Derivatives markets in India have been in existence in one form or the other for a long time. In the area of commodities, the Bombay Cotton Trade Association started futures trading way back in 1875. In 1952, the Government of India banned cash settlement and options trading. Derivatives trading shifted to informal forwards markets. In recent years, government policy has shifted in favour of an increased role of market-based pricing and less suspicious derivatives trading. The first step towards introduction of financial derivatives trading in India was the promulgation of the Securities Laws (Amendment) Ordinance, 1995. It provided for withdrawal of prohibition on options in securities. The last decade, beginning the year 2000, saw lifting of ban on futures

trading in many commodities. Around the same period, national electronic commodity exchanges were also set up. Derivatives trading commenced in India in June 2000 after SEBI granted the final approval to this effect in May 2001 on the recommendation of L. C Gupta committee. Securities and Exchange Board of India (SEBI) permitted the derivative segments of two stock exchanges, NSE and BSE, and their clearing house/corporation to commence trading and settlement in approved derivatives contracts. Initially, SEBI approved trading in index futures contracts based on various stock market indices such as, S&P CNX, Nifty and Sensex. Subsequently, index-based trading was permitted in options as well as individual securities. The trading in BSE Sensex options commenced on June 4, 2001 and the trading in options on individual securities commenced in July 2001. Futures contracts on individual stocks were launched in November 2001. The derivatives trading on NSE commenced with S&P CNX Nifty Index futures on June 12, 2000. The trading in index options commenced on June 4, 2001 and trading in options on individual securities commenced on July 2, 2001. Single stock futures were launched on November 9, 2001. The index futures and options contract on NSE are based on S&P CNX. In June 2003, NSE introduced Interest Rate Futures which were subsequently banned due to pricing issue.

Development of Indian Derivative Market
14 December 1995: NSE asked SEBI for permission to trade index futures.
18 November 1996 :SEBI setup L. C. Gupta Committee to draft a policy framework for index futures.
11 May 1998 : L. C. Gupta Committee submitted report.
7 July 1999 :RBI gave permission for OTC forward rate agreements (FRAs) and interest rate swaps
24 May 2000: SIMEX chose Nifty for trading futures and options on an Indian index.
25 May 2000: SEBI gave permission to NSE and BSE to do index futures trading.
9 June 2000 :Trading of BSE Sensex futures commenced at BSE.
12 June 2000: Trading of Nifty futures commenced at NSE.
31 August 2000 :Trading of futures and options on Nifty to commence at SIMEX.
June 2001: Trading of Equity Index Options at NSE
July 2001: Trading of Stock Options at NSE

November 9, 2002; Trading of Single Stock futures at BSE
June 2003; Trading of Interest Rate Futures at NSE
September 13, 2004: Weekly Options at BSE
January 1, 2008: Trading of Chhota(Mini) Sensex at BSE
January 1, 2008.; Trading of Mini Index Futures & Options at NSE
August 29,2008: Trading of Currency Futures at NSE
October 2,2008: Trading of Currency Futures at BSE

CHAPTER 5

INVESTOR PROTECTION

The term “investor protection” defines the entity of efforts and activities to observe, safeguard and enforce the rights and claims of a person in his role as an investor. This includes advice and legal action. The assumption of a need of protection is based on the experience that financial investors are usually structurally inferior to providers of financial services and products due to lack of professional knowledge, information or experience. Countries with stronger investor protections tend to grow faster than those with poor investor protections.

The securities and exchange board of India [SEBI] was constituted as a regulatory authority over various constituents of the capital market in the year 1988.though legally SEBI came into existence in 1988,it was made operational and effective from1992 when it was empowered to secure an autonomous position.

Functions of SEBI

1. To protect the interest of investors in securities and to promote the development of and to regulate the securities market by such measures it thinks fit.
2. Regulating the business in stock exchanges and any other securities markets.
3. Registering and regulating the working of stock brokers, sub brokers, share transfer agents, bankers to issue, trustees of trust deed, registrars to an issue, merchant bankers, underwriters, portfolio managers, investment advisors, and other such intermediaries who may be associated with securities market in any manner.
4. Registering and regulating the working of collective investment schemes including mutual funds.
5. Promoting and regulating self regulatory organizations.
6. Prohibiting fraudulent and unfair trade practices relating to securities markets.
7. Promoting investor education and training of intermediaries of security market.
- 8.Prohibiting insider trading in securities.
- 9.Regulating substantial acquisition of shares and takeover of companies.

10. Calling for information form, undertaking inspection, conducting inquiries and audits of the stock exchanges and intermediaries, and regulatory organization in security market.
11. Levying fees or other charges for carrying out the purposes of this section.
12. Conducting research for the above purposes.
13. Performing other such functions as may be prescribed.
14. Promoting fair practices and code of conduct for all SROs.

Stock exchanges in India

There are 24 stock exchanges in the country, 20 of them being regional ones with allocated areas. Three others set up in the reforms era, viz., National Stock Exchange (NSE) the Over the Counter Exchange of India Limited (OTCEI) and Inter-connected Stock Exchange of India Limited (ISE) have mandate to nationwide trading network. The ISE is promoted by 15 regional stock exchanges in the country and has been set up at Mumbai. The ISE provides a member-broker of any of these stock exchanges an access into the national market segment, which would be in addition to the local trading segment available at present. The NSE and OCTEI, ISE and majority of the regional stock exchanges have adopted the screen based trading system (SBTS) to provide automated and modern facilities for trading in a transparent, fair and open manner with access to investors across the country.

The following are the names of the various stock exchanges in India :

- The Mumbai Stock Exchange
- The Ahmedabad Stock exchange Association Ltd.
- Bangalore Stock Exchange Ltd.
- The Calcutta Stock Exchange Association Ltd.
- Cochin Stock Exchange Ltd.
- The Delhi Stock Exchange Association Ltd.
- The Guwahati Stock Exchange Ltd.
- The Hyderabad Stock Exchange Ltd.
- Jaipur Stock Exchange Ltd.
- Kanara Stock Exchange Ltd.
- The Ludhiana Stock Exchange Association Ltd.
- Madras stock Exchange Ltd.

- Madhya Pradesh Stock Exchange Ltd.
- The Magadh Stock Exchange Ltd.
- Mangalore Stock Exchange Ltd.
- Pune Stock Exchange Ltd.
- Saurashtra Kutch Stock Exchange Ltd.
- The Uttar Pradesh Stock Exchange Association Ltd.
- Vadodara Stock Exchange Ltd.
- Coimbatore Stock Exchange
- Meerut Stock Exchange Ltd.
- Over The Counter (OTC) Exchange of India
- The National Stock Exchange of India

Role of stock exchanges in investor protection

National Stock Exchange of India is India's leading stock exchange set up as a company limited by shares and recognized in the year April 1993. NSE has set up infrastructure that serves as a role model for the securities industry in terms of trading systems, clearing and settlement practices and procedures. The standards set by NSE in terms of market practices, products and technology have become industry benchmarks and are being replicated by many other market participants. It provides screen-based automated trading system with a high degree of transparency and equal access to investors irrespective of geographical location. The high level of information dissemination through on-line system has helped in integrating retail investors across the nation.

At NSE, strive to continuously upgrade and make the system more investor friendly. Since investors are the backbone of the securities market, awareness among investors is the foremost concern. It is of paramount importance to all concerned to protect the interest of the investors. However, the endeavour to safeguard the interest of the investors will have limited effect unless investors exercise certain precautions while making investment decisions. This booklet is meant to educate the investors in respect of the various market practices and serve as a quick reference guide.

Bombay Stock Exchange[BSE] has established a Department of Investors Services (DIS) to redress investors' grievances. Since its establishment in 1986, the DIS has played a pivotal role in enhancing and maintaining investors' faith and confidence by resolving their grievances either against listed companies or against BSE's Trading Members.

Functions of SEBI

Section 11 of the Securities and Exchange Board of India Act.
Regulation Of Business In The Stock Exchanges

A) A review of the market operations, organizational structure and administrative control of the exchange

- All stock exchanges are required to be **Body Corporates**.
- The exchange provides a fair, equitable and growing market to investors.
- The exchange's organization, systems and practices are in accordance with the Securities Contracts (Regulation) Act (SC(R) Act), 1956

B) Registration and Regulation of the Working of Intermediaries

- regulates the working of the depositories [participants], custodians of securities, foreign institutional investors, credit rating agencies and such other intermediaries
- SEBI (Mutual Funds) Regulations, 1996 lays down the provisions for the appointment of the trustees and their obligations
- Every new scheme launched by a mutual fund needs to be filed with SEBI and SEBI reviews the document in regard to the disclosures contained in such documents.
- Regulations have been laid down regarding listing of funds, refund procedures, transfer procedures, disclosures, guaranteeing returns etc
- SEBI has also laid down advertisement code to be followed by a mutual fund in making any publicity regarding a scheme and its performance
- SEBI has prescribed norms / restrictions for investment management with a view to minimize / reduce undue investment risks.
- SEBI also has the authority to initiate penal actions against an erring MF.
- In case of a change in the controlling interest of an asset management company, investors should be given at least 30 days time to exercise their exit option.

C) Registration and Regulation of Mutual Funds, Venture Capital Funds & Collective Investment Schemes

AMFI-Self Regulatory Organization-'promoting and protecting the interest of mutual funds and their unit-holders, increasing public awareness of mutual funds, and serving the investors' interest by defining and maintaining high ethical and professional standards in the mutual funds industry'.

- Every mutual fund must be registered with SEBI and registration is granted only where SEBI is satisfied with the background of the fund.
- SEBI has the authority to inspect the books of accounts, records and documents of a mutual fund, its trustees, AMC and custodian where it deems it necessary

D) Promoting & Regulating Self Regulatory Organizations

In order for the SRO to effectively execute its responsibilities, it would be required to be structured, organized, managed and controlled such that it retains its independence, while continuing to perform a genuine market development role

E) Prohibiting fraudulent and unfair trade practices in the Securities Market

SEBI is vested with powers to take action against these practices relating to securities market manipulation and misleading statements to induce sale/purchase of securities.

F) Prohibition of Insider Trading

Stock Watch System, which has been put in place, surveillance over insider trading would be further strengthened.

G) Investor Education and the training of Intermediaries

SEBI-strategies on financial education

SEBI Act, 1992 mandates SEBI [Securities and Exchange Board of India] to take such measures as may be required to protect the interests of investors in securities and to promote the development of, and to regulate the securities market. With a view to building the capacity of investors to undertake transactions in securities market, SEBI has been undertaking investor awareness and education activities. These activities focus on the basic care an investor should take while undertaking a transaction, his general rights and obligations, where and how to seek help and guidance in case of need, etc.

1. Dedicated Website

SEBI has a dedicated web site (<http://investor.sebi.gov.in>) which contains the relevant information for investors.

2. Investor Associations

At the end of 2010, there were 24 IAs recognized by SEBI. These associations provide inputs for making policy and regulations on behalf of investors. They conduct workshops / seminars on various topics relating to the securities market and expenses on such workshops/seminars are

Reimbursed by SEBI. SEBI also supports the programmes by providing faculty on occasions and supplying printed literature on relevant subjects.

3. Awareness Material

A large variety of awareness / educative pamphlets (Do's and Dont's, FAQs, Rights and Responsibilities) are available on web site as well as are distributed in various programmes

4. Awareness Campaigns - Short Messages

It is proposed to begin campaigns through mass media giving important messages to investors. These would be done in English, Hindi and 12 other regional languages.

Print: News paper advertisement in non-financial dailies,

Television: 30 second slots in prime time in TV channels,

Radio: Audio slots through radio, including FM channels.

5. Co-ordination with SROs, industry associations, etc.

SEBI would encourage stock exchanges, depositories, mutual funds, and various Self Regulatory Organizations and industry bodies like AMFI, ANMI etc. to undertake educational and awareness activities, preferably in rural and semi-urban areas. There would be targets for them and SEBI would monitor the same. Through them, it is proposed to have about 5,000 Programmes across the country.

6. Financial education programmes

Through NISM

SEBI initiated financial literacy program for school students jointly with National Institute of Securities Markets (NISM) in 2008-09 and positioned it as an important life skill at the school level targeting 8th and 9th standard students

Through Resource Persons (RPs)

With the help of NISM, SEBI has trained (7 days training programme and a certification) 600 resource persons from all over India. They are conducting programmes for the following target segments in regional language

- o Investment Planning for Retirement
- o Investment Planning for Executives
- o Investment Planning for Home Makers
- o Financial Planning for Self Help Group(s)
- o Financial Planning for Young Investors
- o Financial Education for School Children
- o Financial Education for Middle Income Group

These programmes aim at imparting understanding of financial concepts to the targeted groups.

7. Visit by School / College students to SEBI

It is proposed to welcome groups of students to visit SEBI and understand securities market. It would cover a general presentation followed by question answer session.

H) Inspection and Inquiries

I) Regulating substantial acquisition of Shares and take-overs

J) Performing such functions and exercising such powers under the provisions of the Securities Contracts (Regulation) Act, 1956 as may be delegated to it by the Central Government;

K) Levying fees or other charges for carrying out the purposes of this section

L) Conducting Research For The Above Purposes

SEBI has been vested with wide-ranging powers. Firstly, to oversee constitution as well as the operations of mutual funds including presentation of accounts, following the decision to allow the entry of private sector and joint sector mutual funds. Secondly, all stock exchanges in the country have been brought under the annual inspection regime of SEBI for ensuring orderly growth of stock markets and investors' protection. Thirdly, with the repealing of the Capital Issues (Control) Act, 1947, in May 1992, SEBI has been made the regulatory authority in regard to new issues of companies. An amendment to the SEBI Act (1992) carried out March 25, 1995 has empowered SEBI to register and regulate new intermediaries in the capital market. With this empowerment, all intermediaries associated with the securities market are now regulated by SEBI. *Fourthly*, with effect from 1995, the SEBI has been empowered to impose penalties on different intermediaries for defaults.

Steps taken by SEBI to improve Stock Market and Capital Market

To introduce improved practices and greater transparency in the stock markets and capital markets in the interest of healthy capital market development, a number of steps have been taken by SEBI during recent years. The important steps are;

1. SEBI has drawn up a programme for inspecting stock exchanges. Under this programme, inspections in of some stock exchanges have already been carried out. The basic objective of such inspections is to improve the functioning of stock exchanges.
2. SEBI has introduced a number of measures to reform the primary market. The objective is to strengthen the standards of disclosure, introduce certain

procedural norms for the issuers and intermediaries, and remove the inadequacies and systemic deficiencies in the issue procedures. For example, an advertisement code has been laid down to ensure that the advertisements are fair and do not contain statements to mislead the investors; a system of appointing SEBI representatives to supervise the allotment process has been introduced to minimize malpractices in allotment of oversubscribed issues; prudential norms have been laid down for rights issues, etc.

3. The process of registration of intermediaries such as stock brokers and sub-brokers has been provided under the provisions of the Securities and Exchange Board of India Act, 1992. The registration is on the basis of certain eligibility norms such as capital adequacy, infrastructure etc. According to the SEBI (Stock Brokers and Sub-Brokers) Rules 1992 announced on August 20, 1992, no person can act as a stock-broker for the purpose of buying/selling or dealing in securities, unless he holds a certificate granted by SEBI and conditions for grant of such certificates have been laid down in the rules. SEBI issued regulations relating to stock-brokers and sub-brokers in October 1992 which, inter alia, cover registration of brokers and sub-brokers, their general obligations and responsibilities, procedures for inspection of their operations and actions to be initiated in case of default.
4. Through an order under the Securities Contracts (Regulations) Act, 1956, SEBI has directed the stock exchanges to broad-base their governing boards and change the composition of their arbitration, default and disciplinary committees. The broad basing of the governing boards of the stock exchanges would help them function with greater degree of autonomy and independence so that they become truly self regulatory organizations.
5. Merchant banking has been statutorily brought under the regulatory framework of SEBI. The merchant bankers have to be authorized by SEBI. They will have to adhere to stipulated capital adequacy norms and abide by a code of conduct which specifies a high degree of responsibility towards inspectors in respect of the pricing and premium fixation of issues.
6. SEBI issued regulations pertaining to "Insider Trading" in November 1992 prohibiting dealings, communication or counseling in matters relating to insider trading. Such regulations will help in protecting and preserving the market's integrity, and in the long run inspire investor confidence in the market.
7. SEBI issued a separate set of guidelines for development financial institutions in September 1992 for disclosure and investment protection regarding their raising of funds from the market. As per the guidelines, there is no need for promoter's contribution. Besides, underwriting is not mandatory. Moreover, free pricing is permitted subject to consistent track

record for three years and credit rating is compulsory for debentures and bonds of more than 18 months.

8. SEBI has notified the regulations for mutual funds. For the first time mutual funds are governed by a uniform set of regulations which require them to be formed as trusts and managed by a separate asset management company (AMC) and supervised by a board of trustees or trustee company. The SEBI (Mutual Fund) Regulations also provide for an approval of the offer documents of schemes by SEBI. The regulations prescribe minimum amount to be raised by each scheme. A close ended scheme with a fixed size of mutual fund must raise a minimum of Rs. 20 crore and open ended scheme of Rs. 50 crore. The entire subscription amount must be refunded within six weeks of the closure of the scheme in case the amount collected by the scheme falls short of the prescribed amount. There will also be certain investment restrictions for AMCs. The advertisement code prescribes norms for fair and truthful disclosures by the mutual funds in advertisements and publicity materials. The regulations are intended to ensure that the mutual funds grow on healthy lines and investors' interests are protected. On January 30, 1997, SEBI allowed mutual funds to mention an indicative return for schemes for fixed income securities with certain disclosures to draw investors' attention.
9. To bring about greater transparency in transactions, SEBI has made it mandatory for brokers to maintain separate accounts for their clients and for themselves. They must disclose the transaction price and brokerage separately in the contract notes issued to their clients. They must also have their books audited and audit reports filed with SEBI.
10. SEBI has issued directives to the stock exchanges to ensure that contract notes are issued by brokers to clients within 24 hours of the execution of the contract. Exchanges are to see that time limits for payment of sale proceeds and deliveries by brokers and payment of margins by clients to brokers are complied with. For ensuring the fulfilment of deals (safety of the deals) in the market and protecting investors, SEBI has introduced capital adequacy norms for brokers.
11. The 'Banker to the issue' has been brought under purview of SEBI for investor protection. Unit Trust of India (UTI) has also been brought under the regulatory jurisdiction of SEBI.
12. With a view to expediting the process of dematerialization of securities and settlement of transactions in the depository, SEBI, on October 22, 1997, decided that with effect from January 15, 1998, settlement of trades in the depository would be compulsory for domestic financial institutions, banks, mutual funds and foreign institutional investors (FIIs) having a minimum portfolio of securities of Rs. 10 crore as on their latest balance sheet. In the interest of small investors, SEBI has allowed investors with very small holding to sell in the stock exchange in

physical form under a special scheme. Such securities are then dematerialized by the buyers.

13. SEBI has exempted infrastructure firms from certain norms while floating a public issue. In particular, they would be exempted from the requirements such as, making a minimum public offer of 25 per cent of equity, five shareholders per Rs. one lakh of offer, and minimum subscription of 90 per cent.
14. The Companies (Amendment) Ordinance (October 31, 1998 and January 7, 1999) allows companies to buy back their own shares subject to regulations laid down by SEBI. The new Sections (77A and 77B) in the Ordinance lay down the provisions/restrictions concerning buy back of shares. A company can finance its buy back out of (i) its free reserves, (ii) the securities premium account or (iii) proceeds of an earlier issue other than fresh issue of shares made specifically for buy back purposes.
15. SEBI has dispensed with the requirement to issue shares with a fixed par value of Rs. 10 and Rs. 100 and has given freedom to companies to determine the par value of shares issued by them. Companies with dematerialized shares have been allowed to alter the par value of a share indicated in the Memorandum and Articles of Association. The existing companies, which have issued shares at Rs. 10 and Rs. 100 can avail of this facility by consolidating/splitting their existing shares.
16. In order to popularize the book building mechanism for public issues, SEBI modified the existing framework for book building. It is optional for investors to use either the existing framework or the modified framework. Public issues are now being floated by many companies adopting the book-building route
17. SEB's regulations for Collective Investment Schemes (CIS) were notified on October 15, 1999.⁴ Under the SEBI Act and Regulations framed there under, no person can carry on any CIS unless he obtains a certificate of registration from SEBI. All existing collective investment schemes were required to apply for registration by December 14, 1999. An existing scheme which does not obtain registration from SEB shall have to wind up and repay the money to the investors.
18. In keeping with international best practice, SEBI introduced compulsory rolling settlement in ten select scrips on January 10, 2000. Since then more scrips have been brought under compulsory rolling settlement in a phased manner. In June 2000, SEBI introduced derivatives trading. The product spectrum for trading in equity derivatives was widened in 2001-02. As far as internet trading is concerned, SEBI has prescribed minimum technical standards to be enforced by the stock exchanges for ensuring safety and security of transactions via the internet.

19. An Ordinance promulgated on October 28, 2002 gave the following four powers to SEBI: (i) SEBI can search an entity's premises and seize documents; (ii) It can impound cash proceeds and securities connected to any transaction it is investigating and can even freeze bank accounts; (iii) Regardless of the nature or scale of market violation, SEBI could earlier fine an offender a maximum of Rs. 5 lakh. The Ordinance increased this limit manifold — in market manipulation or insider trading violations, to Rs. 25 crore or three times the profits made by the entity concerned, whichever is higher and for other violations like non-disclosures, up to Rs. 1 crore; and (iv) The size of the SEBI Board has been increased. The idea behind this is to move from individual-based to group-based decision making, thereby reducing the possibility of errors or bias. Moreover, insider trading and market manipulation has been defined clearly. The Ordinance was followed by the Securities and Exchange Board of India (Amendment) Act, 2002 adopted in December 2002.
20. In November 2002, SEBI approved the establishment of a 'Central Listing Authority' which would centralize the listing function that currently takes place at the exchange level.
21. In order to provide an additional route for raising funds in the domestic market, SEBI permitted listed companies in May 2006 to raise funds in the form of 'Qualified Institutional Placement' (QIP).
22. In June 2006, SEBI asked the stock exchanges to make the existing margining system more stock in the cash segment. The stock exchanges were directed to update risk arrays in the cash market at least five times in a day (as is done in derivatives market) and accordingly update applicable margin rates.
23. In September 2006, SEBI widened the range of international entities that can invest in the stock market by including an institution established as incorporate outside India as a pension fund, mutual fund, investment trust, insurance company and reinsurance company as registered FIIs (Foreign Institutional Investors). The list would also include international or multilateral agencies, foreign governmental agencies or foreign central banks.
24. PAN was made mandatory for all the entities/persons, desirous of transacting in cash market with effect from October 1, 2006.
25. In December 2006, SEBI directed BSE to set up and maintain corporate bond reporting platform. For that purpose, SEBI made it mandatory for market participants to report all corporate bond deals, aggregating Rs. 1 lakh or above to the Bombay Stock Exchange Limited (BSE) from January 1, 2007. All transact above Rs. 1 lakh shall be reported within 30 minutes of closing the deal. Settlements have to be reported within one trading day from completion of trades.

26. In March 2007 SEBI allowed the National Stock Exchange of India Ltd. (NSE) to set up and maintain a corporate bond reporting platform to capture all information relating to trading in corporate bonds as accurately as close to execution as possible. In this connection, SEBI ruled that trades executed by the members of BSE and NSE shall be reported on the reporting platforms of their respective stock exchanges who would host such information on their websites.
27. In April 2007, PAN was made the sole identification number for all transactions in securities market.
28. In April 2007, SEBI amended (Disclosure and Investor Protection) Guidelines, 2000 to make guarding of IPOs mandatory and permitted companies with listing history less than six months to raise money through preferential allotment.
29. In May 2007, SEBI decided that mutual funds can invest in ADRs/GDRs/foreign securities within overall limit of US \$ 4 billion. This will be with a sub-ceiling for individual mutual funds which should not exceed 10 per cent of the net assets managed by them as on March 31 of each relevant year and subject to a maximum of US \$ 200 million per mutual fund.
30. In August 2007, SEBI decided that companies issuing debentures and the respective debenture trustees/stock exchanges shall disseminate all information regarding debentures to investors and general public.
31. In August 2007, SEBI issued guidelines for overseas investment by VCFs (Venture Capital Funds).

As is clear from the above description, SEBI has introduced a number of measures to reform India's capital market. By improving market efficiency, enhancing transparency, preventing unfair trade practices, it has succeeded to a considerable extent in bringing up the Indian market to international standards. The important developments can be highlighted as under: (1) the issuers complying with the eligibility criteria are allowed freedom to issue the securities at market-determined rates; (2) the secondary market has overcome the geographical barriers by moving to screen-based trading; (3) all kinds of securities — debt and equity, government and corporate—are traded on exchanges, side by side; (4) trades enjoy counter-party guarantee; (5) the trading cycle has been shortened to a day and trades are settled within 2 working days; (6) physical security certificates (and attendant risks) have almost disappeared; (7) a variety of derivatives are permitted; (8) corporate governance has improved significantly; (9) the confidence of international investors in the Indian securities market has increased considerably and now more than 500 FIIs (Foreign Institutional Investors) are registered with SEBI ; and (10) the Indian market is getting integrated with the global market, though in a limited way, through euro issues