SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

MODULE I

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Investment:

Investment is putting money into something with the expectation of profit. The word originates in the Latin "vestis", meaning garment, and refers to the act of putting things (money or other claims to resources) into others' pockets.

The term "investment" is used differently in economics and in finance. Economists refer to a real investment (such as a machine or a house), while financial economists refer to a financial asset, such as money that is put into a bank or the market, which may then be used to buy a real asset**.**

Features and Objectives: Investment involves making of a sacrifice in the present with the hope of deriving future benefits. Two most important features of an investment are current sacrifice and future benefit. Investment is the sacrifice of certain present values for the uncertain future reward. It involves numerous decisions such as type, mix, amount, timing, grade etc., of investment. The decision making has to be continuous as well. Investment may be defined as an activity that commits funds in any financial/physical form in the present with an expectation of receiving additional return in the future. The expectation brings with it a probability that the quantum of return may vary from a minimum to a maximum.

This possibility of variation in the actual return is known as investment risk. Thus every investment involves a return and risk. Investment has many meaning and facets. However, investment can be interpreted broadly from three perspectives:

- Economic
- Layman
- Financial

Economic investment includes the commitment of the fund for net addition to the capital stock of the economy. The net additions to the capital stock means an increase in building equipment or inventories over the amount of equivalent goods that existed, say, one year ago at the same time.

The layman uses of the term investment as any commitment of funds for a future benefit not necessarily in terms of return. For example a commitment of money to buy a new car is certainly an investment from an individual point of view.

Financial investment is the commitment of funds for a future return, thus investment may be understood as an activity that commits funds in any financial or physical form in the presence of an expectation of receiving additional return in future.

In the present context of portfolio management, the investment is considered to be financial investment, which implies employment of funds with the objective of realizing additional income or growth in value of investment at a future date. Investing encompasses very conservative position as well as speculation the field of investment involves the study of

investment process. Investment is concerned with the management of an investors' wealth whichis the sum of current income and the present value of all future incomes. Financial investments are commitments of funds to derive income in form of interest, dividend premium, pension benefits or appreciation in the value of initial investment. Hence the purchase of shares, debentures post office savings certificates and insurance policies **all are** financial investments. Such investment generates financial assets. These activities are undertaken by anyone who desires a return, and is willing to accept the risk from the financial instruments

FEATURES/CHARACTERISTICS OF INVESTMENT

Return: All investments are characterized by the expectation of a return. In fact, investments aremade with the primary objective of deriving return. The expectation of a return may be from income (yield) as well as through capital appreciation. Capital appreciation is the difference between the sale price and the purchase price. The expectation of return from an investment depends upon the nature of investment, maturity period, and market demand and so on.

Risk: Risk is inherent in any investment. Risk may relate to loss of capital, delay in repaymentof capital, non-payment of return or variability of returns. The risk of an investment is determined by the investments, maturity period, repayment capacity, nature of return commitment and so on. Risk and expected return of an investment are related. Theoretically, the higher the risk, higher is the expected returned. The higher return is a compensation expected by investors for their willingness to bear the higher risk.

Safety: The safety of investment is identified with the certainty of return of capital without loss of time or money. Safety is another feature that an investor desires from investments. Every investor expects to get back the initial capital on maturity without loss and without delay.

Liquidity: An investment that is easily saleable without loss of money or time is said to be liquid. A well-developed secondary market for security increases the liquidity of the investment. An investor tends to prefer maximization of expected return, minimization of risk, safety of funds and liquidity of investment.

Tax Saving: The investors should get the benefit of tax exemption from the investments. There are certain investments which provide tax exemption to the investor. The tax saving investments increases the return on investment. Therefore, the investors should also think of saving income tax and invest money in order to maximize the return on investment.

OBJECTIVES OF INVESTMENT

In broad terms, four main investment objectives cover how you accomplish most financial goals. These investment objectives are important because certain products and strategies work for one objective, but may produce poor results for another objective. It is quite likely you will use several of these investment objectives simultaneously to accomplish different objectives without any conflict. Let's examine these objectives and see how they differ.

Capital Appreciation: Capital appreciation is concerned with long-term growth. This strategy is most familiar in retirement plans where investments work for many years inside a qualified plan. However, investing for capital appreciation is not limited to qualified retirement accounts. If this is your objective, you are planning to hold the stocks for many years. You are content to let them grow within your portfolio, reinvesting dividends to purchase more shares. A typical strategy employs making regular purchases. You are not very concerned with day-to-day fluctuations, but keep a close eye on the fundamentals of the company for changes that could affect long-term growth.

Current Income: If your objective is current income, you are most likely interested in stocks that pay a consistent and high dividend. Many people who pursue a strategy of current income are retired and use the income for living expenses. Other people take advantage of a lump sum of capital to create an income stream that never touches the principal, yet provides cash for certain current needs (college, for example).

Capital Preservation: Capital preservation is a strategy you often associate with elderly people who want to make sure they don‘t outlive their money. Retired on nearly retired people often use this strategy to hold on the detention has. For this investor, safety is extremely important – even to the extent of giving up return for security. The logic for this safety is clear. If they lose their money through foolish investment and are retired, it is unlike they will get a chance to replace it. Investors who use capital preservation tend to invest in bank CDs, Treasury Bills and savings accounts.

Speculation: The speculator is not a true investor, but a trader who enjoys jumping into and out of stocks as if they were bad shoes. Speculators or traders are interested in quick profits and used advanced trading techniques like shorting stocks, trading on the margin, options and otherspecial equipment. They have no love for the companies they trade and, in fact may not know much about them at all other than the stock is volatile and ripe for a quick profit. Speculators keep their eyes open for a quick profit situation and hope to trade in and out without much thought about the underlying companies. Many people try speculating in the stock market with the misguided goal of getting rich. It doesn‘t work that way. If you want to try your hand, make sure you are using money you can afford to lose. It‘s easy to get addicted, so make sure you understand the real possibilities of losing your investment.

The secondary objectives are tax minimization and Marketability or liquidity.

Tax Minimization: An investor may pursue certain investments in order to adopt tax minimization as part of his or her investment strategy. A highly-paid executive, for example, may want to seek investments with favourable tax treatment in order to lessen his or her overall income tax burden. Making contributions to tax-sheltered retirement plan can be an effective tax minimization strategy.

Marketability/Liquidity: Many of the investments we have discussed are reasonably illiquid, which means they cannot be immediately sold and easily converted into cash. Achieving a degree of liquidity, however, requires the sacrifice of a certain level of income or potential for capital gains.

Common stock is often considered the most liquid of investments, since it can usually be sold within a day or two of the decision to sell. Bonds can also be fairly marketable, but some bonds are highly illiquid, or non-tradable, possessing a fixed term. Similarly, money market instruments may only be redeemable at the precise date at which the fixed term ends. If an investor seeks liquidity, money market assets and non-tradable bonds aren't likely to be held in his or her portfolio.

Investment Avenues:

Investment generally involves commitment of funds in two types of assets: - Real assets - Financial assets.

Real assets: Real assets are tangible material things like building, automobiles, land, gold etc. **Financial assets:** Financial assets are piece of paper representing an indirect claim to real assets held by someone else. These pieces of paper represent debt or equity commitment in the form of IOUs or stock certificates. Investments in financial assets consist of – ***Securitised (i.e. security forms of) investment - Non-securities investment***

The term _securities' used in the broadest sense, consists of those papers which are quoted and are transferable. Under section 2 (h) of the Securities Contract (Regulation) Act, 1956 (SCRA) _securities' include:

- ♣ Shares, scrip's, stocks, bonds, debentures, debenture stock or other marketable securities of a like nature in or of any incorporated company or other body corporate.
- ♣ Government securities.
- ♣ Such other instruments as may be declared by the central Government as securities, and,
- ♣ Rights of interests in securities.

Therefore, in the above context, security forms of investments include Equity shares, preference shares, debentures, government bonds, Units of UTI and other Mutual Funds, and equity shares and bonds of Public Sector Undertakings (PSUs). Non-security forms of investments include all those investments, which are not quoted in any stock market and are not freely marketable. viz., bank deposits, corporate deposits, post office deposits, National Savings and other small savings certificates and schemes, provident funds, and insurance policies. Another popular investment avenue are investment in physical assets such as Gold, Silver, Diamonds, Real estate, Antiques etc. Indian investors have always considered the physical assets to be very attractive investments. There are a large number of investment avenues for savers in India. Some of them are marketable and liquid, while others are non-marketable; some of them are highly risky while some others are almost risk less. The investor has to choose proper avenues from among them, depending on his specific need, risk preference, and return expectation. Investment avenues can be broadly categorized under the following heads: -

1. Corporate securities. Equity shares .Preference shares, Debentures/Bonds, GDRs /ADRs
2. Deposits in banks and non-banking companies
3. Post office deposits and certificates
4. Life insurance policies
5. Provident fund schemes
6. Government and semi government securities
7. Mutual fund schemes
8. Real assets

CORPORATE SECURITIES

Joint stock companies in the private sector issue corporate securities. These include equity shares, preference shares, and debentures. Equity shares have variable dividend and hencebelong to the high risk high return category; preference shares and debentures have fixed returns with lower risk. The classification of corporate securities that can be chosen as investment avenues can be depicted as shown below.

Equity Shares-: By investing in shares, investors basically buy the ownership right to that company. When the company makes profits, shareholders receive their share of the profits in the form of dividends. In addition, when a company performs well and the future expectation from the company is very high, the price of the company's shares goes up in the market. This allows shareholders to sell shares at profit, leading to capital gains. Investors can invest in shares either through primary market offerings or in the secondary market. Equity shares can be classified in different ways but we will be using the terminology of Investors. It should be noted that the line of demarcation between the classes are not clear and such classification are not mutually exclusive.

Blue Chips (also called Stalwarts): These are stocks of high quality, financially strong companies which are usually the leaders in their industry. They are stable and matured companies. They pay good dividends regularly and the market price of the shares does not fluctuate widely. Examples are stocks of Colgate, Pond's Hindustan Lever, TELCO, Mafatlal Industries etc.

Growth Stocks: Growth stocks are companies whose earnings per share is grows faster than the economy and at a rate higher than that of an average firm in the same industry. Often, the earnings are ploughed back with a view to use them for financing growth. They invest in research and development and diversify with an aggressive marketing policy. They are evidenced by high and strong EPS. Examples are ITC, Dr. Reddy's Bajaj Auto, Sathyam Computers and Infosys Technologies etc. The high growth stocks are often called *–GLAMOUR STOCK' or HIGH FLYERS'.*

Income Stocks: A company that pays a large dividend relative to the market price is called an income stock. They are also called defensive stocks. Drug, food and public utility industry shares are regarded as income stocks. Prices of income stocks are not as volatile as growth stocks.

Cyclical Stocks: Cyclical stocks are companies whose earnings fluctuate with the business cycle. Cyclical stocks generally belong to infrastructure or capital goods industries such as general engineering, auto, cement, paper, construction etc. Their share prices also rise and fall in tandem with the trade cycles.

Discount Stocks: Discount stocks are those that are quoted or valued below their face values. These are the shares of sick units.

Under Valued Stock: Undervalued shares are those, which have all the potential to become growth stocks, have very good fundamentals and good future, but somehow the market is yet to price the shares correctly.

Turn Around Stocks: Turn around stocks are those that are not really doing well in the sense that the market price is well below the intrinsic value mainly because the company is going through a bad patch but is on the way to recovery with signs of turning around the corner in the near future. Examples- EID – Parry in 80's, Tata Tea (Tata Finlay), SPIC, Mukand Iron and steel etc.

Preference Shares: Preference shares refer to a form of shares that lie in between pure equity and debt. They have the characteristic of ownership rights while retaining the privilege of a consistent return on investment. The claims of these holders carry higher priority than that of ordinary shareholders but lower than that of debt holders. These are issued to the general public only after a public issue of ordinary shares.

Debentures and Bonds: These are essentially long-term debt instruments. Many types of debentures and bonds have been structured to suit investors with different time needs. Though having a higher risk as compared to bank fixed deposits, bonds, and debentures do offer higher returns. Debenture investment requires scanning the market and choosing specific securities that will cater to the investment objectives of the investors.

Depository Receipts (GDRs/ADRs): Global Depositary Receipts are instruments in the form of a depositary receipt or certificate created by the overseas depositary bank outside India and issued to non-resident investors against ordinary shares or Foreign Currency Convertible Bonds (FCCBs) of an issuing company. A GDR issued in America is an American Depositary Receipt (ADR). Among the Indian companies, Reliance Industries Limited was the first company to raise funds through a GDR issue. Besides GDRs, ADRs are also popular in the capital market. As investors seek to diversify their equity holdings, the option of ADRs and GDRs are very lucrative. While investing in such securities, investors have to identify the capitalization and risk characteristics of the instrument and the company's performance in its home country (underlying asset).

Warrants: A warrant is a certificate giving its holder the right to purchase securities at a stipulated price within a specified time limit or perpetually. Sometimes a warrant is offered with debt securities as an inducement to buy the shares at a later date. The warrant acts as a value addition because the holder of the warrant has the right but not the obligation of investing in the equity at the indicated rate. It can be defined as a long-term call option issued by a company on its shares. A warrant holder is not entitled to any dividends; neither does he have a voting right. But the exercise price of a warrant gets adjusted for the stock dividends or stock splits. On the expiry date, the holder exercises an option to buy the shares at the predetermined price. This enables the investor to decide whether or not to buy the shares or liquidate the debt from the company. If the market price is higher than the exercise price, it will be profitable for the

investor to exercise the warrant. On the other hand, if the market price falls below the exercise price, the warrant holder would prefer to liquidate the debt of the firm.

Derivatives: The introduction of derivative products has been one of the most significant developments in the Indian capital market. Derivatives are helpful risk-management tools that an investor has to look at for reducing the risk inherent in as investment portfolio. The first derivative product that has been offered in the Indian market is the index future. Besides index futures, other derivative instruments such as index options, stock options, have been introduced in the market. Stock futures are traded in the market regularly and in terms of turnover, have exceeded that of other derivative instruments. The liquidity in the futures market is concentrated in very few shares. Theoretically the difference between the futures and spot price should reflect the cost of carrying the position to the future of essentially the interest. Therefore, when futures are trading at a premium, it is an indication that participants are bullish of the underlying security and vice versa. Derivative trading is a speculative activity. However, investors have to utilize the derivative market since the opportunity of reducing the risk in price movements is possible through investments in derivative products.

Deposits: Among non-corporate investments, the most popular are deposits with banks such as savings accounts and fixed deposits. Savings deposits carry low interest rates whereas fixed deposits carry higher interest rates, varying with the period of maturity, Interest is payable quarterly or half-yearly or annually. Fixed deposits may also be recurring deposits wherein savings are deposited at regular intervals. Some banks have reinvestment plans whereby savings are re-deposited at regular intervals or reinvested as the interest gets accrued. The principal and accumulated interests in such investment plans are paid on maturity.

Savings Bank Account with Commercial Banks: A safe, liquid, and convenient investment option, a savings bank account is an ideal investment avenue for setting aside funds for emergencies or unexpected expenses. Investors may prefer to keep an average balance equal to three months of their living expenses. A bank fixed deposit is recommended for those looking for preservation of capital along with current income in the short term. However, over the long-term the returns may not keep pace with inflation.

Company Fixed Deposits: Many companies have come up with fixed deposit schemes to mobilize money for their needs. The company fixed deposit market is a risky market and ought to be looked at with caution. RBI has issued various regulations to monitor the company fixed deposit market. However, credit rating services are available to rate the risk of company fixed deposit schemes. The maturity period varies from three to five years. Fixed deposits in companies have a high risk since they are unsecured, but they promise higher returns than bank deposits. Fixed deposit in non-banking financial companies (NBFCs) is another investment avenue open to savers. NBFCs include leasing companies, hire purchase companies, investment companies, chit funds, and so on. Deposits in NBFCs carry higher returns with higher risk compared to bank deposits.

Post Office Deposits and Certificates: The investment avenues provided by post offices are non-marketable. However, most of the savings schemes in post offices enjoy tax concessions. Post offices accept savings deposits as well as fixed deposits from the public. There is also a recurring deposit scheme that is an instrument of regular monthly savings. National Savings Certificates (NSC) is also marketed by post office to investors. The interest on the amount invested is compounded half-yearly and is payable along with the principal at the time of maturity, which is six years from the date of issue. There are a variety of post office savings certificates that cater to specific savings and investment requirements of investors and are a risk free, high yielding investment opportunity. Interest on these instruments is exempt from income tax. Some of these deposits are also exempt from wealth tax.

Life Insurance Policies: Insurance companies offer many investment schemes to investors. These schemes promote savings and additionally provide insurance cover. LIC is the largest life insurance company in India. Some of its schemes include life policies, convertible whole life assurance policies, and endowment assurance policies, Jeevan Saathi, Money Back Plan, Jeevan Dhara, and Marriage Endowment Plan. Insurance policies, while catering to the risk compensation to be faced in the future by investors, also have the advantage of earning a reasonable interest on their investment insurance premiums. Life insurance policies are also eligible for exemption from income tax.

Provident Fund Scheme: Provident fund schemes are deposit schemes, applicable to employees in the public and private sectors. There are three kinds of provident funds applicable to different sectors of employment, namely, Statutory Provident Fund, Recognised Provident Fund, and Unrecognised Provident Fund. In addition to these, there is a voluntary provident fund scheme that is open to any investor, employed or not. This is known as the Public Provident Fund (PPF). Any member of the public can join the PPF, which is operated by the State Bank of India.

Equity Linked Savings Schemes (ELSSs): Investing in ELSSs gets investors a tax rebate of the amount invested. ELSSs are basically growth mutual funds with a lock-in period of three years. ELSSs have a risk higher than PPF and NSCs, but have the potential of giving higher returns.

Pension Plan: Certain notified retirement/pension funds entitle investors to a tax rebate. UTI, LIC, and ICICI are some financial institutions that offer retirement plans to investors.

Government and Semi-Government Securities: Government and semi-government bodies such as the public sector undertakings borrow money from the public through the issue of government securities and public sector bonds. These are less risky avenues of investment because of the credibility of the government and government undertakings. The government issues securities in the money market and in the capital market. Money market instruments are traded in the Wholesale Debt Market (WDM) trades and retail segments. Instruments traded in the money market are short-term instruments such as treasury bills and repos. The government also introduced the privatisation programme in many corporate enterprises and these securities are traded in the secondary market. These are the semi-government securities.

Mutual Fund Schemes: A mutual fund is a kind of investment that uses money from investors to invest in stocks, bonds or other types of investment. A fund manager (or "portfolio manager") decides how to invest the money, and for this he is paid a fee, which comes from the money in the fund. The Unit Trust of India is the first mutual fund in the country. A number of commercial banks and financial institutions have also set up mutual funds. Mutual funds have been set up in the private sector also. These mutual funds offer various investment schemes to investors. The number of mutual funds that have cropped up in recent years is quite large and though, on an average, the mutual fund industry has not been showing good returns, select funds have performed consistently, assuring the investor better returns and lower risk options.

Real Assets: Investments in real assets are also made when the expected returns are very attractive. Real estate, gold, silver, currency, and other investments such as art are also treated as investments since the expectation from holding of such assets is associated with higher returns.

Real Estate: Buying property is an equally strenuous investment decision. Real estate investment is often linked with the future development plans of the location. It is important to check the value while deciding to movable/immovable property other than buildings. Besides making a personal assessment from the market, the assistance of government-approved valuers may also be sought. A valuation report indication the value of the each of the major assets and also the basis and manner of valuation can be obtained from an approved valuer against the payment of a fee. In case of a plantation, a valuation report may also be obtained from recognized private valuers.

Bullion Investment: The bullion market offers investment opportunity in the form of gold, silver, and other metals. Specific categories of metals are traded in the metals exchange. The bullion market presents an opportunity for an investor by offering returns and end value in future. It has been observed that on several occasions, when the stock market failed, the gold market provided a return on investments. The changing pattern of prices in the bullion market also makes this market risky for investors. Gold and silver prices are not consistent and keep changing according to the changing local/global demands in the market. The fluctuation prices, however, have been compensated by real returns for many investors who have followed a buy and hold strategy in the bullion market.

Investment vs. Speculation – Key Differences

BASIS OF COMPARISON	INVESTMENT	SPECULATION
Meaning	The purchase of an asset with the hope of getting returns is called investment.	Speculation is an act of conducting a risky financial transaction, in the hope of substantial profit.

Basis for Decision	Fundamental Factors, i.e. Performance of the Company.	Hearsay, Technical Charts and Market Psychology.
Time Horizon	Longer Term	Short Term
Risk Involved	Moderate Risk	High Risk
Intent to Profit	Changes in value	Changes in prices
Expected Rate of Return	Modest rate of return	High rate of return
Funds	An investor uses his own funds.	A speculator uses borrowed funds.
Income	Stable	Uncertain and Erratic
Behaviour of Participants	Conservative and Cautious	Daring and Careless

Investing and Gambling- Key Differences

1. Risk Management Tactics:

Both stock investing and gambling involve the simple principle of minimizing risk while maximizing profits. But how this principle adopted varies in both practices. While stock investors consider diversification across different investments as the strategy for minimizing potential losses, gamblers look into the risk capital to risk reward ratio and would only put in their money if the odds are favourable.

2. Gambling is Time-Bound:

The concept of time is another key difference between stock investing and gambling. Gambling is a time-bound practice, but stock investing can last several years. In gambling, once the game or hand is over, your chances to make more profit from your wager are closed. But in stock investing, you have good chances of making more profit as the years roll by. Returns from dividends are a key component to making money in stocks over a long period.

3. Limiting Losses:

Stock investors can prevent total loss of their risked capital if the market starts to turn sour and there are no hopes of a positive turnaround. Investors have certain options to help them prevent undue risk this way. For instance, if your stock drops by a certain percentage of your risk capital, you can stop your investment and sell that stock to someone else. This way, you would still hold on to 90% of your risk capital.

But in gambling, you cannot set stop losses on your bet. If you bet that a team will win a soccer match and that team loses, you cannot get any part of your money back. So, gambling prevents people from minimizing their loss.

4. Indicators are Different:

Both stock investors and gamblers adopt various strategies in order to boost their chances of winning. One of such strategies is careful analysis prior to risking their money. In stock investing, you analyse trading patterns by interpreting stock charts. This will help you predict what will likely happen in the market in the future. It is known as technical analysis. You can also choose to research the company you want to invest in. This is known as fundamental investing. In gambling however, you analyse the mannerisms and betting patterns of your opponents. This information may be all you need to make a well-informed decision and predict the likely outcome of a bet.

5. Availability of Information:

Of course, information is very necessary in both stock investing and gambling. But while information about companies (such as earnings, financial ratios, etc.) and their stocks are readily available for public use, gamblers have no way of getting information about what happened in the recent past. And where they have such information, it‘s usually not quantifiable.

6. Placing a Bet:

If you enter a casino and buy in, you won‘t be taking any risks with your money until you decide to place a bet. And if you don‘t place a bet, you can easily withdraw the exact amount you bought in; no profits, no losses. But in stock investing, your money starts working right from the moment you put it in. So, you will hardly get back the exact amount you invested; even if you decide to withdraw your funds. It‘s either you make some profit or some loss.

7. Entrepreneurship:

If you have invested funds in stocks in different companies, you can confidently claim to be an entrepreneur (an investor). Even if you have no other business to run, your funds will keep working for you. But gamblers are never regarded conventionally as entrepreneurs (and they don‘t see themselves as such). In fact, in some places, gambling is looked at with contempt.

8. Economic Benefits:

When you invest in a company‘s stocks, you are simply helping that company grow by making your funds available for that company to do business with. But in gambling, there are no economic benefits, as you are not investing in any company.

9. Frequency:

The more you gamble, the more likely you are to lose more money because gambling gives you no chance to stop loses, and you don‘t have the chance to revive your money once the odds are against you. But in stock investing, the more you trade with various companies, the better your chances of making profits. This is because stock investing allows you to stop your losses. Most of the time, you‘ll make money in the long term.

10. Chance or Luck:

Although some gamblers claim to be skilled at analysing the likely outcome of a placed bet, this is usually an empty claim. You can never have a ‗professional‘ gambler who doesn‘t lose money. But you can have a seasoned stock investor.

In other words, with the right research, you are very unlikely to lose in stock investing. But in gambling, experience is rarely is helping factor. So, while gambling is just playing by hazard, trading stocks is about understanding market trends and cycles and taking advantage of them.

Meaning of Risk:

All investments involve some degree of risk. In finance, risk refers to the degree of uncertainty and/or potential financial loss inherent in an investment decision. In general, as investment risks rise, investors seek higher returns to compensate themselves for taking such risks. Every saving and investment product has different risks and returns. Differences include: how readily investors can get their money when they need it, how fast their money will grow, and how safe their money will be. The main forces contributing to risk are price and interest. Risk is also influenced by external and internal considerations. External risks are uncontrollable and broadly affect the investments. These external risks are called systematic risk. Risk due to internal environment of a firm or those affecting a particular industry are referred to as unsystematic risk. Unsystematic risk is unique to a firm or industry. It does not affect the investor. Unsystematic risk is caused by factors like labour strike, irregular disorganised management policies and consumer preferences.

TYPES OF RISK:

1. SYSTEMATIC RISK: Market risk, interest rate risk and purchasing power risk are grouped under systematic risk. They are explained as under:
(i) Market Risk:
It is referred to as stock variability due to changes in investor‘s attitudes and expectations. The investor‘s reaction towards tangible and intangible events is the chief cause affecting market risk. Market risk cannot be eliminated but it can be reduced. Market risk includes such factors as business recessions, depressions and long term changes in consumption in the economy.

(ii) Interest Rate Risk:

There are four types of movements in prices of stocks in the market. These may be termed as long term, cyclical, intermediate and short term. Traditionally, investors could attempt to forecast cyclical savings in interest rates and prices merely by forecasting ups and downs in general business activity.

The effect of interest rate can be different for lending institution and borrowing institution. In India, a combination of factors has produced a situation where it is difficult to accurately find out the changes in interest rates. Interest-rate risk arises due to variability in the interest rates from time to time. It particularly affects debt securities as they carry the fixed rate of interest. The types of interest-rate risk are Price risk and Reinvestment rate risk. Price risk arises due to the possibility that the price of the shares, commodity, investment, etc. may decline or fall in the future. Reinvestment rate risk results from fact that the interest or dividend earned from an investment can't be reinvested with the same rate of return as it was acquiring earlier.

(iii) Purchasing Power Risk:

It is also known as inflation risk. It is so, since it emanates (originates) from the fact that it affects a purchasing power adversely. It is not desirable to invest in securities during an inflationary period. It arises out of changes in the prices of goods and services and technically it covers both inflation and deflation periods. In India, purchasing power risk is associated with inflation and rising prices. All investors should have an approximate estimate in their minds before investing their funds of the expected return after making an allowance for purchasing power risk.

Demand pull inflation risk arises due to increase in price, which result from an excess of demand over supply. It occurs when supply fails to cope with the demand and hence cannot expand anymore. In other words, demand inflation occurs when production factors are under maximum utilization.

Cost push inflation risk arises due to sustained increase in the prices of goods and services. It is actually caused by higher production cost. A high cost of production inflates the final price of finished goods consumed by people.

2. UNSYSTEMATIC RISK:

It arises out of the uncertainty surrounding a particular firm or industry due to factors like labour strike, consumer preferences and management policies.

The two kinds of unsystematic risks in a business organisation are business risk and financial risk which are explained below:

(i) Business Risk: Business risk refers to the basic viability of a business—the question of whether a company will be able to make sufficient sales and generate sufficient revenues to cover its operational expenses and turn a profit. While financial risk is concerned with the costs of financing, business risk is concerned with all the other expenses a business must cover to remain operational and functioning. These expenses include salaries, production costs, facility rent, and office and administrative expenses.

Every firm has its own objectives and aims at a particular gross profit and operating income. It also hopes to plough back some profits. Business risk is also classified into internal business risk and external business risk. Internal business risk may be represented by a firm's limiting environment within which it conducts its business. External risks are due to many factors and some of the important factors are business cycle, demographic factors, political policies, monetary policy and the economic environment of the economy.

(ii) Financial Risk:

It is associated with the method through which it plans its financial structure. If the capital structure of a company tends to make earnings unstable, the company may fail financially. Large amounts of debt financing also increase the risk. Financial risk can be stated as being between Earnings before Interest and Taxes, and Earnings Before Taxes.

Measurement of Risk:

Quantification of risk is known as measurement of risk.

Two approaches are followed in measurement of risk:

(i) Mean-variance approach, and

(ii) Correlation or regression approach.

s. Under this approach the variance and standard deviation measure the extent of variability of possible returns from the expected return and is calculated as:

$$\sigma^2 = \sum_{i=1}^{n}[(X_i - \overline{X})^2 p(X_i)]$$

Where, X_i = Possible return,

P = Probability of return, and

n = Number of possible returns.

Correlation or regression method is used to measure the systematic risk. Systematic risk is expressed by β and is calculated by the following formula:

$$\beta_i = \frac{r_{im}\sigma_i\sigma_m}{\sigma_m^2}$$

Where, r_{im} = Correlation coefficient between the returns of stock i and the return of the market index,

σ_m = Standard deviation of returns of the market index, and

σ_i = Standard deviation of returns of stock i.

Using regression method we may measure the systematic risk.

The form of the regression equation is as follows:

$$Y = \alpha + \beta X$$

It is used in the following form

or $$\alpha = \overline{Y} - \beta \overline{X}$$

and, $$\beta = \frac{n\sum XY - (\sum X)(\sum Y)}{n\sum X^2 - (\sum X)^2}$$

Where, n = Number of items,
Y = Mean value of the company's return,
X = Mean value of return of the market index,
α = Estimated return of the security when the market is stationary, and
β = Change in the return of the individual security in response to unit change in the return of the market index.

Concept of Return:

Return can be defined as the actual income from a project as well as appreciation in the value of capital. Thus there are two components in return—the basic component or the periodic cash flows from the investment, either in the form of interest or dividends; and the change in the price of the asset, commonly called as the capital gain or loss.
The term yield is often used in connection to return, which refers to the income component in relation to some price for the asset. The total return of an asset for the holding period relates to all the cash flows received by an investor during any designated time period to the amount of money invested in the asset.

It is measured as: Total Return = Cash payments received + Price change in assets over the period /Purchase price of the asset.

In connection with return we use two terms—realized return and expected or predicted return. Realized return is the return that was earned by the firm, so it is historic. Expected or predicted return is the return the firm anticipates to earn from an asset over some future period.

CONCEPT OF RISK-RETURN IN PORTFOLIO CONTEXT:

So far our analysis of risk-return was confined to single assets held in isolation. In real world, we rarely find investors putting their entire wealth into single asset or investment. Instead they build portfolio of investments and hence risk-return analysis is extended in context of portfolio.

A portfolio is composed of two or more securities. Each portfolio has risk-return characteristics of its own. A portfolio comprising securities that yield a maximum return for given level of risk

or minimum risk for given level of return is termed as _efficient portfolio'. In their Endeavour to strike a golden mean between risk and return the traditional portfolio managers diversified funds over securities of large number of companies of different industry groups.

However, this was done on intuitive basis with no knowledge of the magnitude of risk reduction gained. Since the 1950s, however, a systematic body of knowledge has been built up which quantifies the expected return and riskiness of the portfolio. These studies have collectively come to be known as _portfolio theory'.

A portfolio theory provides a normative approach to investors to make decisions to invest their wealth in assets or securities under risk. The theory is based on the assumption that investors are risk averse. Portfolio theory originally developed by Harry Markowitz states that portfolio risk, unlike portfolio return, is more than a simple aggregation of the risk, unlike portfolio return, is more than a simple aggregation of the risks of individual assets
This is dependent upon the interplay between the returns on assets comprising the portfolio. Another assumption of the portfolio theory is that the returns of assets are normally distributed which means that the mean (expected value) and variance analysis is the foundation of the portfolio.

i. Portfolio Return: The expected return of a portfolio represents weighted average of the expected returns on the securities comprising that portfolio with weights being the proportion of total funds invested in each security (the total of weights must be 100).
The following formula can be used to determine expected return of a portfolio:

$$\bar{R}p = \sum_{j=1} Wj\,Rj \qquad \ldots(5.5)$$

where $\bar{R}$ = Expected return of a portfolio

$\bar{P}$ = The proportion, or weights of total funds invested in security j

Rj = The expected return for security j

m = The total number of different securities in the portfolio

Applying formula (5.5) to possible returns for two securities with funds equally invested in a portfolio, we can find the expected return of the portfolio as below:

	Security X	Security Y
Expected Return, Rj	15.0%	12.6%
Standard deviation, 0j	10.7	1.5

The expected return of the portfolio is = (.5)15.0% + (.5)12.6 = 13.8%

ii. Portfolio Risk: Unlike the expected return on a portfolio which is simply the weighted average of the expected returns on the individual assets in the portfolio, the portfolio risk, σp is not the simple, weighted average of the standard deviations of the individual assets in the portfolios.

It is for this fact that consideration of a weighted average of individual security deviations amounts to ignoring the relationship, or covariance that exists between the returns on securities. In fact, the overall risk of the portfolio includes the interactive risk of asset in relation to the others, measured by the covariance of returns. Covariance is a statistical measure of the degree to which two variables (securities' returns) move together. Thus, covariance depends on the correlation between returns on the securities in the portfolio.

Covariance between two securities is calculated as below:

1. Find the expected returns on securities.
2. Find the deviation of possible returns from the expected return for each security
3. Find the sum of the product of each deviation of returns of two securities and respective probability.

The formula for determining the covariance of returns of two securities is:

$$COVAB = \sum^{n} [RA - E(R_A)][R_B - E(R_B)] \times Pi \quad \ldots (5.6)$$

where COVAB = The covariance of returns on securities A and B

R_A and R_B = Returns on securities A and B

$E(R_A)$ and $E(R_B)$ = Expected returns of A and B

Pi = Probability of occurrence of the state of economy

Let us explain the computation of covariance of returns on two securities with the help of the following illustration:

Table 5.3.

Covariance of Returns on Securities A and B

State of Economy	Probability	Returns		Deviations from Expected Returns		Product of deviation and probability
		A	B	A	B	
Highly Buoyant	0.1	–2	10	–10	5	–50
Buoyant	0.2	8	–5	6	–10	–120
Normal	0.3	6	4	4	–2	–2.4
Recession	0.2	4	10	0	6	0.0
Depression	0.2	–3	10	–8	12	–19.2
		$E(R_A)$ 3.8%		$E(R_B)$ 5.2%		Covar = – 38.6

So far as the nature of relationship between the returns of securities A and B is concerned, there may be three possibilities, viz., positive covariance, negative covariance and zero covariance.

Positive covariance shows that on an average the two variables move together. A's and B's returns could be above their average returns at the same time or they could be below their

average returns at the same time. This signifies that as the proportion of high return and high risk assets is increased, higher returns on portfolio come with higher risk.

Negative covariance suggests that, on an average, the two variables move in opposite direction. It means A‘s returns could be above its average returns while B‘s return could be below its average returns and vice-versa. This implies that it is possible to combine the two securities A and B in a manner that will eliminate all risk.

Zero covariance means that the two variables do not move together either in positive or negative direction. In other words, returns on the two securities are not related at all. Such situation does not exist in real world. Covariance may be non-zero due to randomness and negative and positive terms may not cancel each other.

In the above example, covariance between returns on A and B is negative i.e., -38.6. This suggests that the two returns are negatively related.
The above discussion leads us to conclude that the riskiness of a portfolio depends much more on the paired security covariance than on the riskiness (standard deviations) of the separate security holdings. This means that a combination of individually risky securities could still comprise a moderate-to-low-risk portfolio as long as securities do not move in lock step with each other. In brief, low covariance‘s lead to low portfolio risk.
iii. Diversification: Diversification is venerable rule of investment which suggests –Don‘t put all your eggs in one basket‖, spreading risk across a number of securities. Diversification may take the form of unit, industry, maturity, geography, type of security and management. Through diversification of investments, an investor can reduce investment risks. Investment of funds, say, Rs. 1 lakh evenly among as many as 20 different securities is more diversified than if the same amount is deployed evenly across 7 securities. This sort of security diversification is naive in the sense that it does not factor in the covariance between security returns.

The portfolio comprising 20 securities could represent stocks of one industry only and have returns which are positively correlated and high portfolio returns variability. On the other hand, the 7-stock portfolio might represent a number of different industries where returns might show low correlation and, hence, low portfolio returns variability.

Meaningful diversification is one which involves holding of stocks of more than one industry so that risks of losses occurring in one industry are counterbalanced by gains from the other industry. Investing in global financial markets can achieve greater diversification than investing in securities from a single country. This is for the fact that the economic cycles of different countries hardly synchronize and as such a weak economy in one country may be offset by a strong economy in another.

Fig. 5.2 portrays meaningful diversification. It may be noted from the figure that the returns overtime for Security X are cyclical in that they move in tandem with the economic fluctuations.

In case of Security Y returns are moderately counter cyclical. Thus, the returns for these two securities are negatively correlated.

If equal amounts are invested in both securities, the dispersion of returns, up, on the portfolio of investments will be less because some of each individual security's variability is offsetting. Thus, the gains of diversification of investment portfolio, in the form of risk minimization, can be derived if the securities are not perfectly and positively correlated.

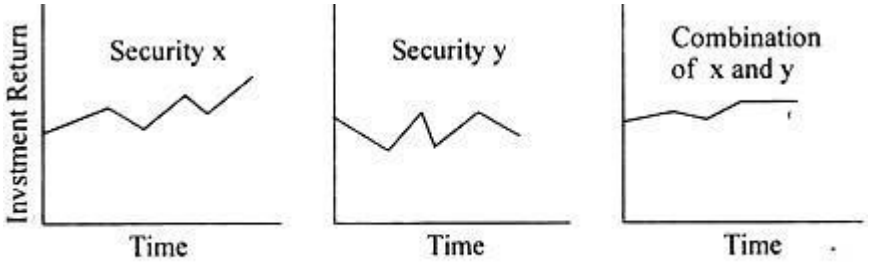

Fig. 5.2.

iv. Systematic and Unsystematic Risk: Thus, the variance of returns on a portfolio moving in inverse direction can minimize portfolio risk. However, it is not possible to reduce portfolio risk to zero by increasing the number of securities in the portfolio. According to the research studies, when we begin with a single stock, the risk of the portfolio is the standard deviation of that one stock.

As the number of securities selected randomly held in the portfolio increase, the total risk of the portfolio is reduced, though at a decreasing rate. Thus, degree of portfolio risk can be reduced to a large extent with a relatively moderate amount of diversification, say 15-20 randomly selected securities in equal-rupee amounts.

Portfolio risk comprises systematic risk and unsystematic risk. Systematic risk is also known as non- diversifiable risk which arises because of the forces that affect the overall market, such, as changes in the nation's economy, fiscal policy of the Government, monetary policy of the Central bank, change in the world energy situation etc.

Such types of risks affect securities overall and hence, cannot be diversified away. Even if an investor holds well diversified portfolio, he is exposed to this type of risk which is affecting the overall market. This is why, non-diversifiable or unsystematic risk is also termed as market risk which remains after diversification.

Another risk component is unsystematic risk. It is also known as diversifiable risk caused by such random events as law suits, strikes, successful and unsuccessful marketing programmes, winning or losing a major contract and other events that are unique to a particular firm.

Unsystematic risk can be eliminated through diversification because these events are random; their effects on individual securities in a portfolio cancel out each other.

Thus, not all of the risks involved in holding a security are relevant because part of the risk can be diversified away. What is relevant for investors is systematic risk which is unavoidable and they would like to be compensated for bearing it. However, they should not expect the market to provide any extra compensation for bearing the avoidable risk, as is contended in the Capital Asset Pricing Model. Figure 5.3 displays two components of portfolio risk and their relationship to portfolio size.

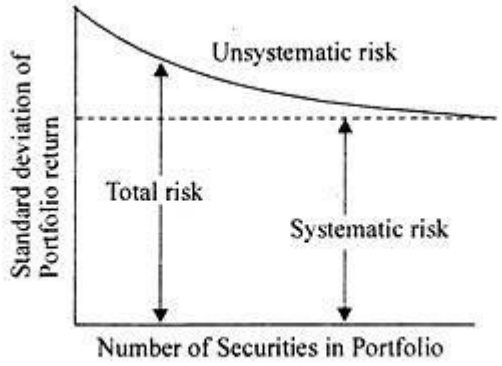

Fig. 5.3. Relationship of Total, Systematic and Unsystematic Risk to Portfolio size

BASICS OF STOCKMARKET OPERATIONS

Stock Exchange: Stock exchange is a virtual market where buyers and sellers trade in existing securities. It is a market hosted by an institute or any such government body where shares, stocks, debentures, bonds, futures, options, etc. are traded. A stock exchange is a meeting place for buyers and sellers. These can be brokers, agents, individuals. The price of the commodity is decided by the rules of demand and supply.

Before selling the securities through stock exchange, the companies have to get their securities listed in the stock exchange. The name of the company is included in listed securities only when stock exchange authorities are satisfied with the financial soundness and other aspects of the company. Previously the buying and selling of securities was done in trading floor of stock exchange; today it is executed through computer and it involves the following steps:

Trading Procedure on a Stock Exchange:

The Trading procedure involves the following steps:

1. Selection of a broker: The buying and selling of securities can only be done through SEBI registered brokers who are members of the Stock Exchange. The broker can be an individual, partnership firms or corporate bodies. So the first step is to select a broker who will buy/sell securities on behalf of the investor or speculator.

2. Opening Demat Account with Depository: Demat (Dematerialized) account refer to an account which an Indian citizen must open with the depository participant (banks or stock brokers) to trade in listed securities in electronic form. Second step in trading procedure is to open a Demat account. The securities are held in the electronic form by a depository. Depository

is an institution or an organization which holds securities (e.g. Shares, Debentures, Bonds, Mutual (Funds, etc.) At present in India there are two depositories: NSDL (National Securities Depository Ltd.) and CDSL (Central Depository Services Ltd.) There is no direct contact between depository and investor. Depository interacts with investors through depository participants only. Depository participant will maintain securities account balances of investor and intimate investor about the status of their holdings from time to time.

3. Placing the Order: After opening the Demat Account, the investor can place the order. The order can be placed to the broker either (DP) personally or through phone, email, etc.

Investor must place the order very clearly specifying the range of price at which securities can be bought or sold. e.g. –Buy 100 equity shares of Reliance for not more than Rs 500 per share.‖

4. Executing the Order: As per the Instructions of the investor, the broker executes the order i.e. he buys or sells the securities. Broker prepares a contract note for the order executed. The contract note contains the name and the price of securities, name of parties and brokerage (commission) charged by him. Contract note is signed by the broker.

5. Settlement: Trade settlement is the process of transferring securities into the account of a buyer and cash into the seller's account following a trade. This is the last stage in the trading of securities done by the broker on behalf of their clients.

Trading Mechanisms:

Trading mechanisms refer to the logistics behind trading assets and securities, regardless of the type of market. These markets can be exchanges, dealers or OTC markets. The mechanisms are the operations by which buyers of an asset are matched with sellers. There are two main types of trading mechanisms:

- ♣ Order driven markets
- ♣ Quote driven markets

Quote Driven: In a quote driven market, continuous prices or –quotes‖ are provided to buyers and sellers. These prices are provided by market makers, which mean these types of systems are better suited for dealer or OTC markets. For a buyer, the price provided is the price a dealer is willing to sell at. For a seller, the price provided is the price a dealer is willing to buy at. Typically, the quoted buy price will be lower than the sell price. The spread is the profit that the market maker, the dealer, makes.

Order Driven: In an order driven market, buyers and sellers of assets are able to place orders for assets they wish to purchase or sell. They can list at market price, which executes a market order instantaneously at the best available price. Alternatively, they can list a fixed/limit price, which executes either a limit or stop order, not to be executed until certain pricing conditions are met.

In an order driven market, counterparties are not necessarily available immediately, depending on the listed price. Because this is so, order driven trading mechanisms are more suited for exchanges. Orders will execute once a suitable counterparty is found for each buyer or seller. In other words, a buy order will only execute if a seller is found who is willing to sell at the specified limit price. Order driven trading mechanisms are often supported by an order book.

TYPES OF ORDERS

An order can be for intraday or carry-forward trade. In intraday, the positions are squared off within the same trading session and in carry-forward trade, either delivery is taken or the position is carried forward to a later date (Futures and Options). There are different ways in which an order can be placed:

MIS – stands for Margin Intraday Square Off
CNC – stands for Cash and Carry
NRML – Normal

MIS is used for trading Intraday Equity, Intraday F&O, and Intraday Commodity Trading. Using the MIS product code you will get an intraday leverage between 3 to 10 times based on what stock you are trading. For F&O, the margins required will be 35% and 45% of total margin required (SPAN + Exposure), for index & stock contracts respectively. No margins will be provided for buying Options. All the positions under the MIS product code will get automatically squared off at 3.20 PM. If you use the MIS product code for Commodity, you will get extra leverage and you will need only 50% of overnight exchange stipulated margin (SPAN + exposure) by using this product type.

CNC is used for delivery based trading of equity. Using CNC product code you will not get any leverage nor will your position be auto squared off. You will not be able to sell using the product code CNC without holding the particular stock in your DEMAT account.

Note: CNC is just a product code. If you use CNC to buy and sell a share on the same day, it will still be considered as an intraday trade.

NRML is used for overnight trading of futures and options. If the client does not want any excess leverage, he can use the product type NRML, and he would not have to worry about auto square-offs. NRML product code is also used for Delivery based trading of Currency.

Market Order: Market Order is the simplest type of order. A market order is an order to buy or sell a security at the best possible price at the current market. Which means once the order to buy

or sell is entered; the system will execute the orders with best prices available in the market. .Market order gets executed almost immediately. In market order, the trader or investor do not have control on the price but there is very high probability that the order will get executed.

Limit Order: Limit order is an order, where the trader can set a price to buy or sell a security. Unlike market order, where the trader doesn‘t have any control over price, in limit order the trader will set the price. If a trader places a limit order to buy shares at Rs. 100, the shares will be bought at Rs. 100 or lower. If the trader places a limit order to sell shares at Rs. 100, the shares will be sold at Rs. 100 or higher.

A limit order can be used during high volatility to control the price at which we buy or sell a security. Limit order can be used if someone is not actively following the price movement of a stock and want to buy or sell at a pre-determined price. Limit order can also be left open with an expiration date.

- A limit buy order will execute at order price or lower than that price.
- A limit sell order will execute at order price or higher than that price.

Stop-Loss Order: Stop-Loss order is an order where a trader can limit his or her losses by exiting a trade if a specific price is reached. By placing a stop-loss order, one can save himself from incurring high losses if the price goes against them.

When a trader places a buy order, he is expecting the price to rise, so that he can earn a profit. But it may so happen, instead of the price rising, the price falls. To avoid high losses when prices fall, he can place a stop-loss order at a price below the buy price.

Example: A trader places a buy order:

- Share price = Rs. 500
- Stop loss at Rs. 498

He expects the share price to go higher, to earn profit. In case the price falls below Rs. 500, say it falls to Rs. 495.The trader will book a loss of Rs. 2 per share (500 – 498) and exit the trade. If he had not put a stop-loss, the loss would have been Rs (500-495) = Rs 5 per share, which is greater than the above scenario.

Similarly, when a trader places a sell order, he expects the price fall, so that he can earn a profit. But it may so happen, instead of the price going down, the price goes up. To avoid high losses when prices go down, he can put a stop-loss at a price higher than the sell price.

Stop-loss Market Order: Stop-loss market order is an order, where the trader sets a trigger price to exit the trade if the price goes against his expectation. Suppose there is a sell position at Rs. 1000 and trigger price for stop-loss is placed at Rs. 1002. If the price hits Rs.1002, it will place a buy order to exit the trade. The buy order will get executed at market price. It is used by traders to make certain that the exit trades get executed if the price goes against the

.

In stop-loss market order, trades are placed with a trigger price. If a buy trade is placed and the price falls and hits the trigger price, it will exit the trade at any price available in the current market. In stop-loss market order, the losses can be more if there is high volatility in price

Stop-loss Limit Order: Stop-loss limit order is almost similar to stop-loss market order but it does not get executed at market price. It will get executed at specified limit price set by the trader. In Stop-loss limit order the trader will have to set a trigger price and a limit price.

Eg: We place a stop-loss limit sellorder when we already have a long position. Long position at price – Rs. 1000, Stop-loss limit price- Rs. 990, Trigger price – Rs. 991 If the price falls to Rs. 991, it will trigger a sell order at Rs. 990. And if the price gets to Rs. 990, it will get executed.

After Market Order (AMO): After-market orders are orders that are placed beyond market hours. The normal market hours are between 9.15 am to 3.30 pm.

But, the entire period outside market hours cannot be used to place after market orders. Different brokers specify a time interval, within which we can place the AMOs. There are also conditions on the price of security you can set in limit orders, normally it is in range of 5-10% of adjusted closing price but the exact range varies among different brokers. AMOs can also be set at market price.

Bracket Order (BO): Bracket order is an order with 3 orders bundled into one. You can enter a new position with a target and a stop-loss. All bracket orders are limit orders. The stop-loss and target will have to be in absolute points (i.e. 1, 2,5,10, etc). Eg: If share of ABC is trading at Rs. 1000. We can put a bracket order to buy it at Rs. 1000 with a target of 10 points and stop loss of 5 points.

For every bracket order that gets executed, we have 2 corresponding orders that gets placed automatically. One is target order and another is stop-loss order.

Cover Order: Cover order is an order by which we can enter a position along with a stop-loss ina same order form

Based on Time Duration: Also based on time duration, there can be:

Good For Day Order – order will stay valid till the end of current trading session.
Good Till Day Order – by using we can keep our order active for few days.

Eg- If we place an order on 1st March and it does not get executed, we can carry forward to say till 4th march. If it doesn‘t get executed even on 4th march, the order will be cancelled.

Immediate or Cancel Order- The order once placed will be executed immediately, if it is not executed it will cancel itself. In this case, it may so happen that the order will be partially executed.

Eg- If we place an order to buy 1000 shares and only 600 shares gets immediately purchased, the rest order of 400 will gets cancelled.

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CLEARING AND SETTLEMENT PROCESS

The Indian share market has a complex mechanism that ensures investors receive the shares they bought or the money they made by selling the same. The process by which the shares are settled in the Indian stock market is called the trading cycle. The trading cycle includes performing three basic tasks:

Trading
Clearing
Settlement

Trading: Trading is the process of buying the security of a company. The investor takes a decision of investing in a particular company based on its past performance and future potential. Trading is said to have happened when the investor has confirmed the order and the money has been debited from his/her account towards the shares of the company.

Clearing: Clearing is the process by which an organization acts as a link between a buyer and a seller to ensure a smooth transaction of money and the shares. Clearing is necessary for matching the sell and buy orders from each other. Investors, to avoid complications, transfer the money to the clearing corporation rather than crediting the account of the company itself. This enables a smooth transaction and reduces the chances of fraud on account of both the parties. The clearing corporation is responsible for post-trade activities such as risk management and clearing and settlement of trades executed on a stock exchange. The first clearing corporation to be established in the country and also the first clearing corporation in the country to introduce settlement guarantee is the National Securities Clearing Corporation Ltd. (NSCCL), a wholly owned subsidiary of NSE.

The process: The two depositories of the Indian share market - National Securities Depositories Limited (NSDL) and Central Depositories Services Limited (CDSL) - are responsible for the transfer of shares which is done in dematerialized form. The required securities are made available through the pool account of members/custodians with the depository participants (brokers, banks, investment firms, etc.) according to the prescribed pay-in time of the securities.

The depository then transfers the shares from the pool account of custodians/members to the account of the other party according to the prescribed pay-out day. The investor is informed electronically about his/her obligations regarding the fund transfer on the pay-in day. He/she ensures that the required funds are available in his/her account so that they can be transferred to the concerned company. The funds' obligation file is then forwarded to the clearing bank by the clearing agency which debits the account of the investor and credits the account of the clearing agency. The clearing agency, after clearing the obligations, moves to the next step of settlement and credits the funds from its account to the account of the company and credits the shares into the account of the investor.

The trading cycle is the most crucial processes that enable an effortless transaction between the investor and the company. The process has evolved over time, and 99% of the total turnover is settled in electronic form, making it quick and easy.



SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT (UNIT II)

MARKOWITZ'S MODERN PORTFOLIO THEORY

Central concepts of Markowitz's Modern Portfolio Theory: In 1952, Harry Markowitz presented an essay on "Modern Portfolio Theory" for which he also received a Noble Price in Economics. His findings greatly changed the asset management industry, and his theory is still considered as cutting edge in portfolio management.

Modern Portfolio Theory (MPT) is an investing model in which investor invest with the motive of taking the minimum level of risk and earning the maximum amount of return for that level of acquired risk. The modern portfolio theory is a helpful tool for the investors as it helps them in choosing the different types of investments for the purpose of the diversification of the investment and then making one portfolio by considering all the investments.

According to the modern portfolio theory, all the investments that are selected are combined together in a way that it reduces the risk in the market through the means of diversification and at the same time also generates the good return in the long term to the investors.

Example of the Modern Portfolio Theory (MPT)

There is an individual who wants to invest in a portfolio. He got an option of two portfolios which are as follows:

1. The first portfolio consists of a mix of the bonds and different stocks that gave the return of 10 % annually on an average, but at the same time differed by the range of as much as 15 % annually (returns, in this case, differed usually between -5 % and + 25 %).
2. On the other hand, the second portfolio consists of a mix of the bonds and different stocks that gave the return of 10 % annually on an average, but at the same time differed by a range of only 3 % annually (returns, in this case, differed usually between 7 % and 13 %)

According to modern portfolio theory which investment portfolio the person should consider?

Analysis:

- In both scenarios, the average expected return on the investment is 10 %. However, in the first portfolio, one could get the return of as much as 25 % which sounds attractive, but at the same time, there prevails a huge risk where one might lose 5 % as well because the range differs usually between -5 % and + 25 %.
- On the other side in case of the second portfolio, a less return range of between 7 % and 13 % may be less attractive to the investor but in that case, it is expected that one will not lose his money which makes the investment less risky than the first portfolio.

- According to the Modern portfolio, theory investor invests with the motive of taking the minimum level of risk and earning the maximum amount of return with that minimum risk taken, so in the present case, one should choose the second portfolio as he is getting the same average expected return with the less level of risk.

Assumptions of Modern Portfolio Theory:

Modern Portfolio theory has the certain assumption that is to be considered while making any decisions in order to arrive at the conclusion that risk, return and the diversification relationships hold true. The different assumptions of the modern portfolio theory are as follows:

- Returns from the assets are distributed normally.
- The investor making the investment is rational and will avoid all the unnecessary risk associated.
- Investors will give his best in order to maximize returns for all the unique situations provided.
- All investors are having access to the same information.
- The cost pertaining to the taxes and trading is not considered while making decisions
- All the investors are having the same views on the rate of return expected.
- The single investors along are not sizeable and capable enough for influencing the prices prevailing in the market.
- Unlimited capital at the risk-free rate of return can be borrowed.

Advantages of the Modern Portfolio Theory (MPT):

There are several different advantages of the Modern portfolio theory providing the opportunity for the investors investing their money in the market. Some of the advantages are of the Modern portfolio theory as follows:

1. It helps in evaluation and in managing risks and returns associated with the investments. With the help of analysis, the assets which are under-performing assets and the assets having an excessive risk with respect to returns can be scrutinized and then replaced with the new one.
2. The theory is an important tool for avoiding the financial ruin because by following these theory traders don‟t rely on only one investment for their financial stability rather they diversify their portfolio in order to get the maximum return with minimum risk.

Disadvantages of the Modern Portfolio Theory (MPT):

Along with the different advantages, there exist the limitations and drawbacks also of the Modern portfolio theory which includes the following:

1. In the case of the modern portfolio theory, past performance of the company under consideration is taken. The performance of the past never provides the guarantee for the result that could arise in the future. Considering only the past performances sometimes leads to over passing of the newer circumstances which might not be there when historical data were considered but could play an important role in taking the decision.
2. This theory assumes that there is a normal distribution of the return on an asset within a class of assets which is proved to be wrong for individual equities as the correlations of asset class may change over the period of time.
3. In this theory, there is an assumption that securities of any of the sizes can be bought and sold which doesn‟t hold true as some of the securities have minimum order sizes which cannot be dealt in the fraction.
4. Modern Portfolio Theory even though is accepted widely all over the world and also applied by different investment institution, but at the same time it has also been criticized by different persons particularly by representatives of the behavioural economics who challenges the assumptions of the Modern portfolio theory on the parameters of investor rationality and the expectations for the return.

THE EFFICIENT FRONTIER

The efficient frontier, also known as the portfolio frontier, is a set of ideal or optimal portfolios that are expected to give the highest return for a minimal level of return. This frontier is formed by plotting the expected return on the y-axis and the standard deviation as a measure of risk on the x-axis. It evinces the risk-and return trade-off of a portfolio. For building the frontier there are three important factors to be taken into consideration:

- Expected Return,
- Variance/ Standard Deviation as a measure of the variability of returns also known as risk and
- The covariance of one asset‟s return to that of another asset.

This model was established by the American Economist Harry Markowitz in the year 1952. After that, he spent a few years on the research about the same which eventually led to him winning the Nobel Prize in 1990.

Example of the Efficient Frontier:

Let us understand the construction of the efficient frontier with the help of a numerical example: Assume there are two assets A1 and A2 in a particular portfolio. Calculate the risks and returns for the two assets whose expected return and standard deviation are as follows:

Particulars	A1	A2
Expected Return	10%	20%
Standard Deviation	15%	30%
Correlation Coefficient	-0.5	

Let us now give weights to the assets i.e., a few portfolio possibilities of investing in such assets as given below:

Portfolio	Weights (in %)	
	A1	A2
1	100	0
2	75	25
3	50	50
4	25	75
5	0	100

Using the formulae for Expected Return and Portfolio Risk i.e.:

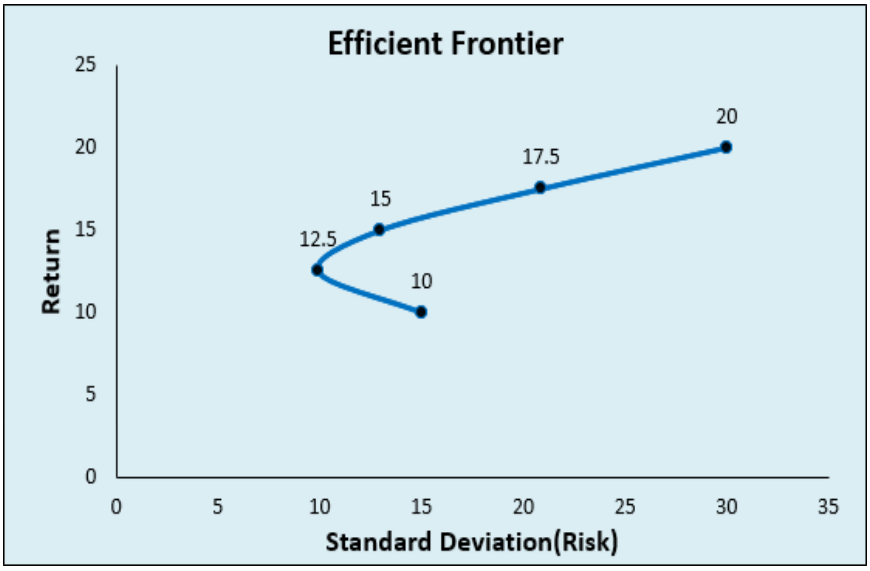
Expected Return = (Weight of A1 * Return of A1) + (Weight of A2 * Return of A2)

Portfolio Risk = √ [(Weight of $A1^2$ * Standard Deviation of $A1^2$) + (Weight of $A2^2$ * Standard Deviation of $A2^2$) + (2 X Correlation Coefficient * Standard Deviation of A1 * Standard Deviation of A2)],

We can arrive at the portfolio risks and returns as below.

Portfolio	Risk	Return
1	15	10
2	9.92	12.5
3	12.99	15
4	20.88	17.5
5	30	20

By using the above table, if we plot the risk on X-axis and the Return on Y-axis, we get a graph which looks as follows and is called the efficient frontier, sometimes also referred to as the **Markowitz bullet**.



In this illustration, we have assumed that the portfolio consists of only two assets A1 and A2 for the sake of simplicity and easy understanding. We can in a similar fashion construct a portfolio for multiple assets and plot it to attain the frontier. In the above graph, any points outside to the frontier are inferior to the portfolio on the efficient frontier because they offer same return with higher risk or lesser return with the same amount of risk as those portfolios on the frontier.

From the above graphical representation of efficient frontier, we can arrive at two logical conclusions:

- It is where the optimal portfolios are.
- The efficient frontier is not a straight line. It is curved. It is concaved to the Y-axis.

However, the efficient frontier would be a straight line if we are constructing it for a complete risk-free portfolio.

Assumptions of the Efficient Frontier Model

- Investors are rational and have knowledge about all the facts of the markets. This assumption implies that all the investors are vigilant enough to understand the stock movements, predict returns and invest accordingly.
- All investors have a common goal and that is to avoid the risk because they are risk-averse and maximize the return as far as possible and practicable.
- There are not many investors who would affect the market price.
- Investors have unlimited borrowing power.
- Investors lend and borrow money at a risk-free interest rate.
- The markets are efficient.
- The assets follow a normal distribution.
- Markets absorb information quickly and accordingly base the actions.
- The decisions of the investors are always based on expected return and standard deviation as a measure of risk.

Merits

- This theory portrayed the importance of diversification.
- This efficient frontier graph helps investors choose the portfolio combinations with the highest returns with the least possible returns.
- It represents all the dominant portfolios in the risk-return space.

Drawbacks/Demerits

- The assumption that all investors are rational and make sound investment decisions may not always be true because not all investors would have enough knowledge about the markets.
- The theory can be applied or the frontier can be constructed only when there is a concept of diversification involved. In a case where there is no diversification, it is sure that the theory would fail.
- Also, the assumption that investors have unlimited borrowing and lending capacity is a faulty one.
- The assumption that the assets follow a normal distribution pattern might not always stand true. In reality, securities may have to experience returns that are far away from the respective standard deviations, sometimes like three standard deviations away from the mean.
- The real costs like taxes, brokerage, fee, etc. are not taken into consideration while constructing the frontier.

SINGLE-INDEX MODEL

William Sharpe tried to simplify the Markowitz method of diversification of portfolios. Sharpe‟s Index Model simplifies the process of Markowitz model by reducing the data in a substantive manner. He assumed that the securities not only have individual relationship but they are related to each other through some indexes represented by business activity. Sharpe has improved the method of Markowitz but in addition he has also put in some additional inputs. He made estimates of the expected return and variance of indexes which may be one or more and are related to economic activity. Sharpe‟s index showed that the return of each security is correlated by some securities markets in the U.S.A.

It is generally the Dow Jones Industrial Average or the Standard and Poor‟s 500 stock index. In India, it is Dalai Street Index which may be applied. Sharpe‟s index takes into consideration 3N + 2 kinds of information which is different to the Markowitz assumption of N (N + 3)/2. According to Markowitz, a portfolio of 100 securities would require the following bits of information: 100 (100 + 3)/2 = 5150, and Markowitz covariance shows that 100 securities would require (N2 – N)/2 = (1002 – 100)/2 = 9900/2 or 4950 covariance. Sharpe first made a single index model.

This was compared to multiple index models for conducting reliability test in finding out the full variance efficient frontier of Markowitz. Many researchers have taken into consideration the Sharpe Index Models. They have preferred the stock price index to the economic indexes in finding out the full covariance frontier of Markowitz for stake of simplicity.

The single-index model (SIM) is a simple asset pricing model to measure both the risk and the return of a stock. The model has been developed by William Sharpe in 1963 and is commonly used in the finance industry. Mathematically the SIM is expressed as:

$$r_s - r_f = \alpha + \beta\,(r_m - r_f) + \varepsilon$$

Where:

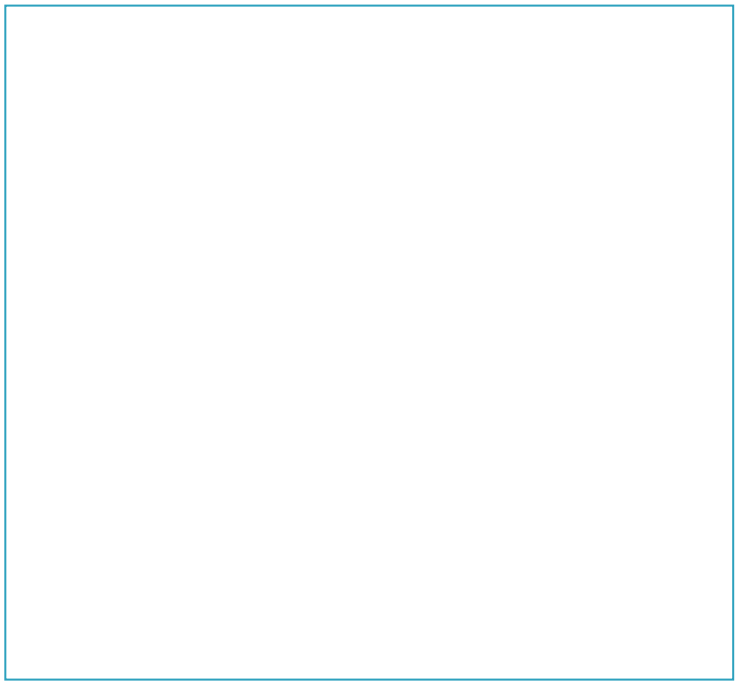
- r_s is return for the stock
- r_f is the risk free rate (i.e. the interest rate on treasury bills)
- r_m is the return to the market portfolio in period t
- Alpha (α) represents the abnormal returns for the stock
- $\beta(r_m - r_f)$ represents the movement of the market modified by the stock‟s beta
- ε represents the unsystematic risk of the security due to firm-specific factors.

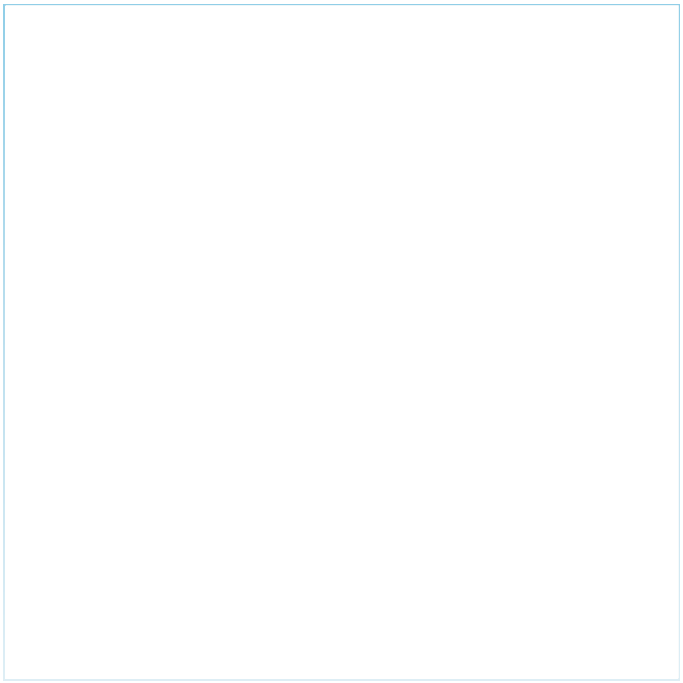
According to this equation, asset‟s returns is influenced by the market (reflected in beta), it has firm specific excess returns (reflected in alpha) and also has firm-specific risk (the residual). These equations show that the stock return is influenced by the market (beta), has a firm specific expected value (alpha) and firm-specific unexpected component (residual). Each stock's performance is in relation to the performance of a market index (such as the All Ordinaries). Security analysts often use the SIM for such functions as computing stock betas, evaluating stock selection skills, and conducting event studies.

Thus, in a hypothetical case if the return on the stock index is 0 (zero) X will be represented by 0 and the expected return would be 9.0% y = 9.0 – .05 (0). The beta coefficient helps in measuring the stocks return with the changes in the market‟s returns. When beta is + 1.0 it means that 1% return on the market index moves with a 1% return on the stock.

A 5% return on the index shows a greater responsiveness to change (i.e., 2.5 times 5%) or 12%. If the value of alpha and beta are known, Sharpe‟s Index takes into consideration the regression analysis through beta (β) coefficient and alpha (α) analysis α +β are utilized by the Sharpe‟s Index to find out systematic and unsystematic risk. The following example gives an analysis of alpha, beta and residual risk of a company.

The Sharpe‟s model generated series of “corner portfolios” along the efficient frontier. The corner portfolios can be calculated either when a security enters or leaves portfolio. The number of stocks increases until it reaches the corner portfolio. The corner portfolio provides the minimum risk of the lowest return. Figure 16.3 shows the regression equation and Figure 16.4 depicts frontier connecting the corner portfolio.





Corner portfolio = Stock with highest return and high risk.

CAPITAL ASSET PRICING MODEL

The Capital Asset Pricing Model predicts the relationship between the risk of an asset and its expected returns.

The capital asset pricing model asserts that the investor should be compensated in two ways: **Time value of money** and the **Risk**. The time value of money means, the value of money today worth more than the value of the same amount in the future. Thus, an investor is compensated for employing a certain sum of money in a particular investment over a period of time. The Time Value of money is represented by "rf" i.e. a risk-free rate in the formula of CAPM. The second part of the formula comprises of a risk; an investor should be compensated for the additional risk that he bears by placing his funds in a particular investment. The Risk is represented by beta (β) that compares the returns on asset for a particular time period against the market premium (Rm-Rf). The Capital Asset Pricing is given by the following equation:

ra = rf +β (rm-rf)

Where,
ra = return on asset
rf = risk-free rate
β = risk premium
rm = market rate of return

Assumptions of Capital Asset Pricing Model:

- Investors are risk averse, i.e. they place funds in the less risky investments.
- All investors have the same expectations from the market and are well informed.
- No investor is big enough to influence the price of the securities.
- The market is perfect: There are no taxes, no transaction costs, securities are completely divisible, and the market is competitive.
- Investors can borrow and lend unlimited amounts at a risk-free rate (zero bonds).

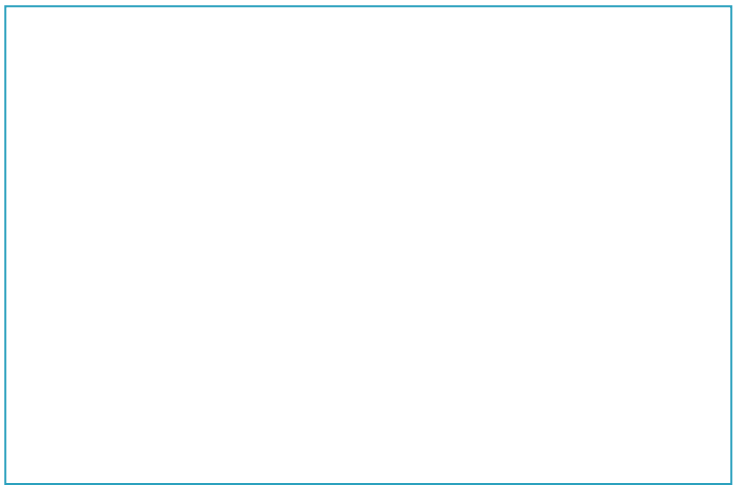
Generally, the capital asset pricing model helps in the pricing of risky securities, such that the implications of risk and the amount of risk premium necessary for the compensation can be ascertained.

The Security Market Line (SML)

Security market line (SML) is the graphical representation of the Capital Asset Pricing Model (CAPM). SML gives the expected return of the market at different levels of systematic or market risk. It is also called „characteristic line" where the x-axis represents beta or the risk of the assets and y-axis represents the expected return.

SML: $E(R_i) = R_f + \beta_i [E(R_M) – R_f]$ Where;

- $E(R_i)$ is the expected return on the security
- R_f is the risk-free rate and represents the y-intercept of the SML
- β_i is a non-diversifiable or systematic risk. It is the most important factor of SML. We will discuss in detail in this article.
- $E(R_M)$ is expected return on market portfolio M.
- $E(R_M) – R_f$ is known as Market Risk Premium



Characteristics of Security Market Line (SML):

Characteristics of Security Market Line (SML) are as below

- SML is a good representation of investment opportunity cost which provides the combination of risk-free asset and the market portfolio.
- Zero-beta security or zero-beta portfolio has an expected return on the portfolio which is equal to the risk-free rate
- The slope of the SML is determined by market risk premium which is: $(E(R_M) – R_f)$. Higher the market risk premium steeper the slope and vice-versa
- All the assets which are correctly priced are represented on Security Market Line (SML).
- The assets which are above the SML are undervalued as they give the higher expected return for a given amount of risk.
- The assets which are below the SML are overvalued as they have lower expected returns for the same amount of risk.

Security Market Line Example

Let the risk-free rate be 5% and the expected market return is 14%. Consider two securities one with a beta coefficient of 0.5 and other with the beta coefficient of 1.5 with respect to the market index. Now let‟s understand the security market line example, calculating the expected return for each security using SML:

Expected return for Security A as per security market line equation is as per below

- $E(R_A) = R_f + \beta_i [E(R_M) – R_f]$
- $E(R_A) = 5 + 0.5 [14 – 5]$
- $E(R_A) = 5 + 0.5 \times 9 = 9.5\%$

Expected return for Security B:

- $E(R_B) = R_f + \beta_i [E(R_M) – R_f]$
- $E(R_B) = 5 + 1.5 [14 – 5]$
- $E(R_B) = 5 + 1.5 \times 9 = 18.5\%$

Thus, as can be seen above Security A has lower beta thus, it has lower expected return while security B has higher beta coefficient and has the higher expected return. This is in line with general finance theory of higher risk higher expected return.

Important Measure in the Security Market Line Equation

Beta is a measure of volatility or systematic risk or a security or a portfolio as compared to the market as a whole. The market can be considered as an indicative market index or a basket of universal assets. If Beta = 1, then the stock has the same level of risk as the market. A higher beta i.e. greater than 1 represents a riskier asset than market and beta less than 1 represents risk less than the market.

The formula for Beta:

$\beta_i = Cov(R_i , R_M)/Var (R_M) = \rho_{i,M} * \sigma_i / \sigma_M$

- $Cov(R_i , R_M)$ is the covariance of the asset i and the market
- $Var (R_M)$ is the variance of the market
- $\rho_{i,M}$ is a correlation between the asset i and the market
- σ_i is the standard deviation of asset i
- σ_i is the standard deviation of the market index

Although, Beta provides a single measure to understand the volatility of an asset with respect to the market, however, beta does not remain constant with time.

Advantages of Security Market Line (SML):

Since, the SML is a graphical representation of CAPM, the advantages, and limitations of SML are same as that of the CAPM. Let us look at the advantages:

- **Easy to use:** SML and CAPM can be easily used to model and derive expected return from the assets or portfolio
- The model assumes the portfolio is well diversified hence neglects the unsystematic risk making to easier to compare two diversified portfolios
- CAPM or SML considers the systematic risk which is neglected by other models likes Dividend Discount model (DDM) and Weighted Average Cost of Capital (WACC) model.

Limitations of Security Market Line (SML):

Let us have a look at the limitations:

- The risk-free rate is the yield of short-term government securities. However, the risk-free rate can change with time and can have even shorter-term duration thus causing volatility

- Market return is the long-term return from a market index which includes both capital and dividend payments. Market return could be negative which is generally countered by using long-term returns.
- Market returns are calculated from past performance which cannot be taken for granted in the future.
- The slope of SML i.e. market risk premium and beta coefficient can vary with time. There can be macroeconomic changes like GDP growth, inflation, interest rates, unemployment etc. which can change the SML.
- Major input of SML is the beta coefficient; however, predicting accurate beta for the model is difficult. Thus, the reliability of expected returns from SML is questionable if proper assumptions for calculating beta are not considered.

Capital Market Line (CML)

The Capital Market Line is a graphical representation of all the portfolios that optimally combine risk and return. CML is a theoretical concept that gives optimal combinations of a risk-free asset and the market portfolio. The CML is superior to Efficient Frontier in the sense that it combines the risky assets with the risk-free asset.

- The slope of the Capital Market Line (CML) is the Sharpe Ratio of the market portfolio.
- The efficient frontier represents combinations of risky assets.
- If we draw a line from the risk-free rate of return which is tangential to the efficient frontier, we get the Capital Market Line. The point of tangency is the most efficient portfolio.
- Moving up the CML will increase the risk of the portfolio and moving down will decrease the risk. Subsequently, the return expectation will also increase or decrease respectively.

All investors will choose the same market portfolio given a specific mix of assets and the associated risk with them. The Capital Market Line (CML) formula can be written as follows:

$$ER_p = R_f + SD_p \times \frac{ER_m - R_f}{SD_m}$$

Where,

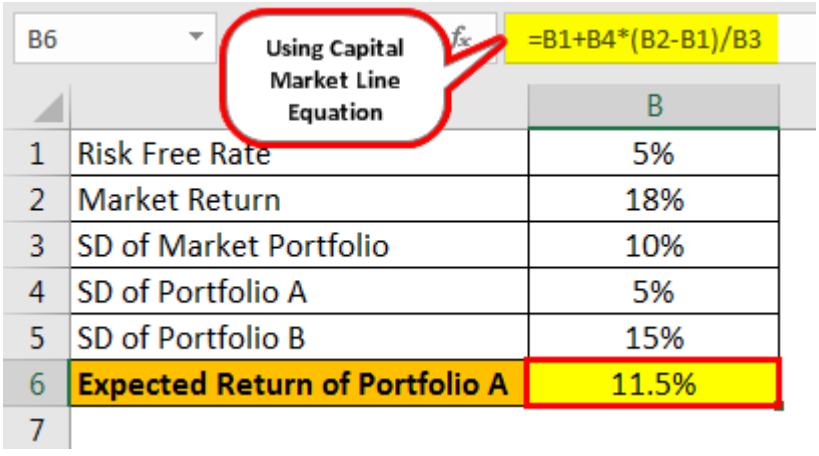
ER_p = Expected Return of Portfolio
R_f = Risk-Free Rate
SD_p = Standard Deviation of Portfolio
ER_m = Expected Return of the Market
SD_m = Standard Deviation of Market

Example of the Capital Market Line

Suppose that the current risk-free rate is 5% and the expected market return is 18%. The standard deviation of the market portfolio is 10%. Now let‟s take two portfolios, with different Standard Deviations:

- Portfolio A = 5%
- Portfolio B = 15%

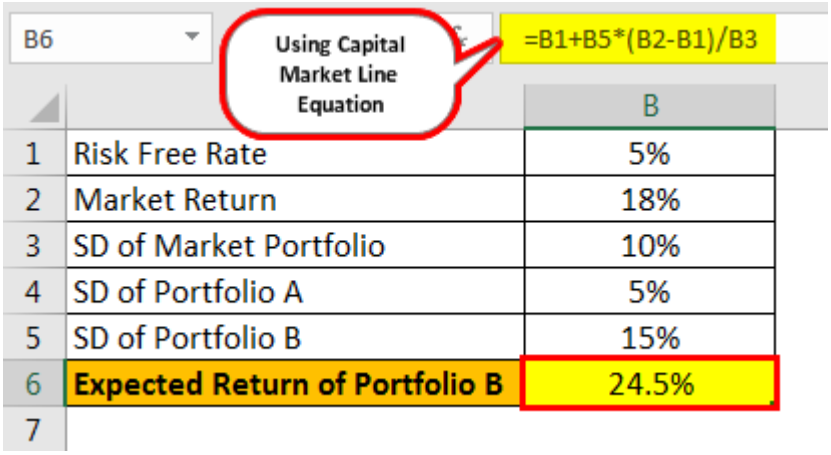
Calculation of Expected Return of Portfolio A



		B
1	Risk Free Rate	5%
2	Market Return	18%
3	SD of Market Portfolio	10%
4	SD of Portfolio A	5%
5	SD of Portfolio B	15%
6	**Expected Return of Portfolio A**	11.5%
7		

- = 5% +5%* (18%-5%)/10%
- **ER(A) = 11.5%**

Calculation of Expected Return of Portfolio B



		B
1	Risk Free Rate	5%
2	Market Return	18%
3	SD of Market Portfolio	10%
4	SD of Portfolio A	5%
5	SD of Portfolio B	15%
6	**Expected Return of Portfolio B**	24.5%
7		

- = 5% +15% (18%-5%)/10%
- **ER(B) = 24.5%**

As we increase the risk in the portfolio (moving up along the Capital Market Line), the expected return increases. The same is true vice-versa. But the excess return per unit of risk, which is the Sharpe ratio, remains the same. It means that the capital market line represents different combinations of assets for a specific Sharpe ratio.

Assumptions of the CML:

There are certain assumptions in the Capital Market Theory which hold true for the CML also.

- **Frictionless Markets –** The theory assumes the existence of frictionless markets. This means that there are no transaction costs or taxes applicable to such transactions. It assumes that investors can smoothly conduct transactions in the market without incurring any additional costs.
- **No Limits on Short Selling** – Short selling is when you borrow securities and sell them with an expectation of the securities‟ price going down. Capital Market Theory assumes that there are no limits on the usage of the funds received from short selling.
- **Rational Investors –** The Capital Market Theory assumes that investors are rational and they take a decision after assessing risk-return. It assumes that the investors are informed and take decisions after careful analysis.
- **Homogenous Expectation –** Investors have the same expectations of future returns in their portfolio. Given the 3 basic inputs of the portfolio model for calculating future returns, all investors will come up with the same efficient frontier. Since the risk-free asset remains the same, the tangency point which represents the Market Portfolio will be the obvious choice of all investors.

Limitations:

- **Assumptions** – There are certain assumptions that exist within the concept of Capital Market Line. However, these assumptions are often violated in the real world. For example, the markets are not frictionless. There are certain costs associated with the transactions. Also, investors are usually not rational. They often make decisions based on sentiments and emotions.
- **Borrowing/Lending at Risk-Free Rate** – Theoretically, it is supposed that investors can borrow and lend without any limits at the risk-free rate. However, in the real world, investors usually borrow at a higher rate than the rate at which they are able to lend. This increases the risk of a leveraged portfolio.

ARBITRAGE PRICING THEORY

Arbitrage Pricing Theory (APT) is an alternate version of the Capital Asset Pricing Model (CAPM). This theory, like CAPM, provides investors with an estimated required rate of return on risky securities. APT considers risk premium basis specified set of factors in addition to the correlation of the price of the asset with expected excess return on the market portfolio.

As per assumptions under Arbitrage Pricing Theory, return on an asset is dependent on various macroeconomic factors like inflation, exchange rates, market indices, production measures, market sentiments, changes in interest rates, movement of yield curves etc.

The Arbitrage pricing theory based model aims to do away with the limitations of the one-factor model (CAPM) that different stocks will have different sensitivities to different market factors which may be totally different from any other stock under observation. In layman terms, one can say that not all stocks can be assumed to react to single and same parameter always and hence the need to take multifactor and their sensitivities.

The Expected Rate of Return of an Asset Using Arbitrage Pricing Theory (APT)

$$E(x) = rf + b1 * (\text{factor } 1) + b2 * (\text{factor } 2) + \ldots + bn * (\text{factor } n)$$

Where,
E(X) = Expected rate of return on the risky asset
Rf = Risk-free interest rate or the interest rate that is expected from a risk-free asset
B = Sensitivity of the stock with respect to the factor; also referred to as beta factor 1, 2 …
N = Risk premium associated with respective factor

As the formula shows, the expected return on the asset/stock is a form of linear regression taking into consideration many factors that can affect the price of the asset and the degree to which it can affect it i.e. the asset‟s sensitivity to those factors.

If one is able to identify a single factor which singly affects the price, the CAPM model shall be sufficient. If there is more than one factor affecting the price of the asset/stock, one will have to work with a two-factor model or a multi-factor model depending on the number of factors that affect the stock price movement for the company. The factors as well as how many of them are used are subjective choices, which mean investors will have varying results depending on their choice. However, four or five factors will usually explain most of a security's return.

APT factors are the systematic risk that cannot be reduced by the diversification of an investment portfolio. The macroeconomic factors that have proven most reliable as price predictors include unexpected changes in inflation, gross national product (GNP), corporate bond spreads and shifts in the yield curve. Other commonly used factors are gross domestic product (GDP), commodities prices, market indices, and exchange rates. To understand APT, it is important for us to learn the underlying assumptions of this theory as given below.

Assumptions:

- The theory is based on the principle of capital market efficiency and hence assumes all market participants trade with the intention of profit maximization
- It assumes no arbitrage exists and if it occurs participants will engage to benefit out of it and bring back the market to equilibrium levels.
- It assumes markets are frictionless, i.e. there are no transaction costs, no taxes, short selling is possible and an infinite number of securities is available.

Let us now look at some arbitrage pricing theory advantages and disadvantages summarized as under:

Benefits:

- APT model is a multi-factor model. So, the expected return is calculated taking into account various factors and their sensitivities that might affect the stock price movement. Thus, it allows the selection of factors that affect the stock price largely and specifically.
- APT model is based on arbitrage-free pricing or market equilibrium assumptions which to a certain extent result in a fair expectation of the rate of return on the risky asset.
- The apt-based multi-factor model places emphasis on the covariance between asset returns and exogenous factors, unlike CAPM. CAPM places emphasis on the covariance between asset returns and endogenous factors.
- The APT model works better in multi-period cases as against CAPM which is suitable for single period cases only.
- APT can be applied to the cost of capital and capital budgeting decisions.
- The APT model does not require any assumption about the empirical distribution of the asset returns, unlike CAPM which assumes that stock returns follow a normal distribution and thus APT a less restrictive model.

Limitations:

- The model requires a short listing of factors that impact the stock under consideration. Finding and listing all factors can be a difficult task and runs a risk of some or the other factor being ignored. Also, the risk of accidental correlations may exist which may cause a factor to become substantial impact provider or vice versa.
- The expected returns for each of these factors will have to be arrived at, which depending on the nature of the factor, may or may not be easily available always.
- The model requires calculating sensitivities of each factor which again can be an arduous task and may not be practically feasible.
- The factors that affect the stock price for a particular stock may change over a period of time. Moreover, the sensitivities associated may also undergo shifts which need to be continuously monitored making it very difficult to calculate and maintain.

Conclusion: Arbitrage Pricing Theory-based models are built on the principle of capital market efficiency and aim to provide decision-makers and participants with estimates of the required rate of return on the risky assets. The required rate of return arrived using the APT model can be used to evaluate, if the stocks are over-priced or under-priced. Empirical tests conducted in the past have resulted from APT as a superior model over CAPM in many cases. However, in several cases, it has arrived at similar results as the CAPM model, which is relatively simpler in use.

EFFICIENT MARKET HYPOTHESIS:

The efficient market hypothesis states that share prices reflect all relevant information, and that it is impossible to beat the market or achieve above-average returns on a sustainable basis. There are many critics of this theory, such as behavioural economists, who believe in inherent market inefficiencies.

The efficient market hypothesis was developed from a Ph.D. dissertation by economist Eugene Fama in the 1960s, and essentially says that at any given time, stock prices reflect all available information and trade at exactly their fair value at all times. Therefore, it is impossible to consistently choose stocks that will beat the returns of the overall stock market. Basically, the hypothesis implies that the pursuit of market-beating performance is more about chance than it is about researching and selecting the right stocks.

Strong-form EMH: In its strongest form, the EMH says a market is efficient if all information relevant to the value of a share, whether or not generally available to existing or potential investors, is quickly and accurately reflected in the market price. For example, if the current market price is lower than the value justified by some piece of *privately* held information, the holders of that information will exploit the pricing anomaly by buying the shares. They will continue doing so until this excess demand for the shares has driven the price up to the level supported by their private information. At this point they will have no incentive to continue buying, so they will withdraw from the market and the price will stabilise at this new equilibrium

level. This is called the *strong form* of the EMH. It is the most satisfying and compelling form of EMH in a theoretical sense, but it suffers from one big drawback in practice. It is difficult to confirm empirically, as the necessary research would be unlikely to win the cooperation of the relevant section of the financial community – insider dealers.

Semi-strong-form EMH: In a slightly less rigorous form, the EMH says a market is efficient if all relevant *publicly available* information is quickly reflected in the market price. This is called the *semi-strong* form of the EMH. If the strong form is theoretically the most compelling, then the semi-strong form perhaps appeals most to our common sense. It says that the market will quickly digest the publication of relevant new information by moving the price to a new equilibrium level that reflects the change in supply and demand caused by the emergence of that information. What it may lack in intellectual rigour, the semi-strong form of EMH certainly gains in empirical strength, as it is less difficult to test than the strong form.

One problem with the semi-strong form lies with the identification of „relevant publicly available information". Neat as the phrase might sound, the reality is less clear-cut, because information does not arrive with a convenient label saying which shares it does and does not affect. Does the definition of „new information" include „making a connection for the first time" between two pieces of already available public information?

Weak-form EMH: In its third and least rigorous form (known as the *weak* form), the EMH confines itself to just one sub-set of public information, namely historical information about the share price itself. The argument runs as follows. „New" information must by definition be unrelated to previous information; otherwise it would not be new. It follows from this that every movement in the share price in response to new information cannot be predicted from the last movement or price, and the development of the price assumes the characteristics of the random walk. In other words, the future price cannot be predicted from a study of historic prices.

Each of the three forms of EMH has different consequences in the context of the search for excess returns, that is, for returns in excess of what is justified by the risks incurred in holding particular investments.

If a market is weak-form efficient, there is no correlation between successive prices, so that excess returns cannot consistently be achieved through the study of past price movements. This kind of study is called *technical* or *chart* analysis, because it is based on the study of past price patterns without regard to any further background information.

If a market is semi-strong efficient, the current market price is the best available unbiased predictor of a fair price, having regard to all publicly available information about the risk and return of an investment. The study of *any* public information (and not just past prices) cannot yield consistent excess returns. This is a somewhat more controversial conclusion than that of the weak-form EMH, because it means that *fundamental* analysis – the systematic study of companies, sectors and the economy at large – cannot produce consistently higher returns than are justified by the risks involved. Such a finding calls into question the relevance and value of a large sector of the financial services industry, namely investment research and analysis.

If a market is strong-form efficient, the current market price is the best available unbiased predictor of a fair price, having regard to all relevant information, whether the information is in the public domain or not. As we have seen, this implies that excess returns cannot consistently be

achieved even by trading on inside information. This does prompt the interesting observation that *somebody* must be the first to trade on the inside information and hence make an excess return. Attractive as this line of reasoning may be in theory, it is unfortunately well-nigh impossible to test it in practice with any degree of academic rigour.

Critics of EMH: Critics of EMH have produced a wide range of arguments, of which the following is a summary.

The assumption that investors are rational and therefore value investments rationally – that is, by calculating the net present values of future cash flows, appropriately discounted for risk – is not supported by the evidence, which shows rather that investors are affected by:

- Herd instinct
- A tendency to „churn" their portfolios
- A tendency to under-react or over-react to news
- Asymmetrical judgements about the causes of previous profits and losses.

Furthermore, many alleged anomalies have been detected in patterns of historical share prices. The best known of these are the „small firm" effect, the January effect and the mean reversion.

Perhaps the biggest piece of evidence to refute the efficient market hypothesis is the existence of market bubbles and crashes. For example, if the assumptions of the hypothesis were correct, the housing bubble and stock market crash of 2008 wouldn't have happened. The same can be said about the tech bubble of the late 1990s, when many tech companies were trading for sky-high valuations before crashing.

Also, there are some investors who *have* consistently beaten the market. As a famous example, Warren Buffett has been highly critical of the efficient market hypothesis. Using his value investing approach and trying to identify a margin of safety in stocks, Buffett has achieved returns that have been far superior to those of the market -- and he's done it steadily over a 50-year period of time.

Behavioural economists are also major critics of the efficient market hypothesis. In a nutshell, the study of behavioural finance is based on the assumption that investors are susceptible to certain biases, such as the belief that past performance is indicative of the future. These biases can lead to mispricing in stocks, according to proponents.

RANDOM WALK THEORY

The random walk theory states that market and securities prices are random and not influenced by past events. The idea is also referred to as the "weak form efficient-market hypothesis." The central idea behind the random walk theory is that the randomness of stock prices renders attempts to find price patterns or take advantage of new information futile. In particular, the theory claims that day-to-day stock prices are independent of each other, meaning that momentum does not generally exist and calculations of past earnings growth does not predict future growth. Malkiel states that people often believe events are correlated if the events come in "clusters and streaks," even though streaks occur in random data such as coin tosses.

The random walk theory also states that all methods of predicting stock prices are futile in the long run. Malkiel calls the notion of intrinsic value undependable because it relies on subjective estimates of future earnings using factors like expected growth rates, expected dividend pay-outs, estimated risk, and interest rates. The random walk theory also considers technical analysis undependable because, according to Malkiel, chartists buy only after price trends are established and sell only after price trends are broken; essentially, the chartists buy or sell too late and miss the boat. According to the theory, this happens because stock prices already reflect the information by the time the analyst moves on the stock. Malkiel also notes that the widespread use of technical analysis reduces the advantages of the approach.

Further, Malkiel finds fundamental analysis flawed because analysts often collect bad or useless information and then poorly or incorrectly interpret that information when predicting stock values. Factors outside of a company or its industry may affect a stock price, rendering further the fundamental analysis irrelevant.

There are two forms of the random walk theory. In both forms, the rapid incorporation of information is disadvantageous for investors and analysts. The semi-strong form states that public information will not help an investor or analyst select undervalued securities because the market has already incorporated the information into the stock price. The strong form states that no information, public or private, will benefit an investor or analyst because even inside information is reflected in the current stock price.

Malkiel acknowledges some statistical anomalies pointing to some exceptions to the random walk theory:
1. Prices of small, less liquid stocks seem to have some serial price correlation in the short-term because they do not incorporate information into their prices as quickly.
2. Contrarian strategies tend to outperform other strategies because reversals are often based on economic facts rather than investor psychology.
3. There are seasonal trends in the stock market, especially at the beginning of the year and the end of the week.
4. Stocks with low P/E ratios tend to outperform those with high P/Es, although the tendency is volatile over time.
5. High-dividend stocks tend to provide higher returns over time because during down markets the high dividend yields often create demand for these stocks and thus increases the price.

The random walk theory proclaims that it is impossible to consistently outperform the market, particularly in the short-term, because it is impossible to predict stock prices. This may be controversial, but by far the most controversial aspect of the theory is its claim that analysts and professional advisors add little or no value to portfolios. Malkiel therefore advocates a buy-and-hold investment strategy as the best way to maximize returns.

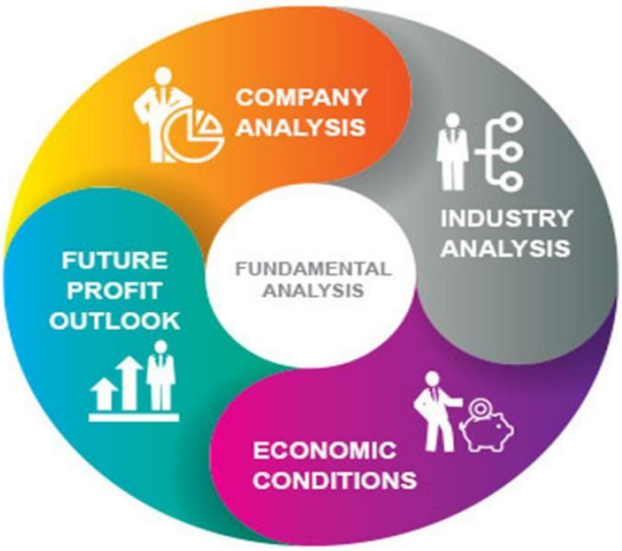
FUNDAMENTAL ANALYSIS

Fundamental analysis is the process of looking at a business at the most basic or fundamental financial level. This type of analysis examines the key ratios of a business to determine its financial health. Fundamental analysis can also give you an idea of the value of what a company's stock should be. It takes several factors into account, including revenue, asset management, and the production of a business as well as interest rate.

Theoretically, the fair value of a bond or an equity share is the sum of the discounted value of the expected future cash flows. The valuation is simpler in a bond, because the cash flows are predefined and end at a given point in time. Equity earnings are not pre-defined and equity is a perpetual investment with no pre-set maturity date. The focus in equity valuation is on the future earnings and the estimates of growth in earnings. Fundamental analysts maintain that market may misprice securities in the short run but in the long run, prices would merge with the securities‟ fair value or intrinsic value. Therefore, profits in investments come from not only identifying a good investment option but also making the investment at the right price.

Fundamental analysis considers both qualitative and quantitative dimensions of a business. While financials will reveal history of the business and the financial readiness to grow in the future, evaluating factors such as the economic conditions favourable to the business, the ability of the management to identify and exploit opportunities, the operating efficiencies that the business possesses and the risks that may affect the plans and its ability to meet these contingencies, will define the attractiveness of the business as an investment proposition. Accordingly, fundamental analysis includes following:

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



Fundamental Analysis

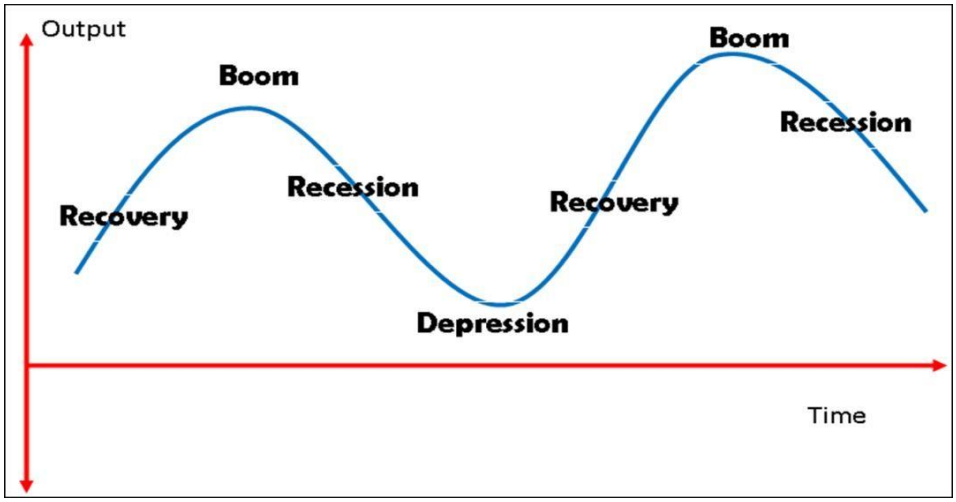
1. Economic analysis

Fundamental analysis may be triggered by changing macro-economic factors, both international and national, such as GDP growth rates, inflation, interest rates, exchange rates, productivity, prices of commodities, regulatory aspects and others. This can lead to an analysis of their impact on different industries and then to search to the best businesses in the industry. This is called top-down approach to fundamental research. For example, the regulatory uncertainty regarding spectrum auction in the telecom sector in India would trigger a re-look at the industry‟s prospects and its impact on the different companies in the sector. However, sometimes analysis is triggered by some news or piece of information on some company, which may move to industry analysis and then economic analysis to see whether broad industry and economic parameters favour the company. This is called bottom-up approach to fundamental research.

Various Macroeconomic Variables:

Economic Output (GDP): Economic output or income is measured in terms of the Gross Domestic Product (GDP). The Gross Domestic Product is the monetary value of final goods and services produced by an economy in a given period of time, usually one year. The Gross Domestic Product is usually used as a measurement of a nation‟s economic activity. If the GDP grows, it means that the economy increased its output.

A higher rate tends to indicate a more economically solvent nation. Analysts measure GDP income by adding consumer spending, private investment, and government spending and net exports. They calculate net exports by subtracting total imports from total exports. GDP reflects the total income earned from internal factors of production. It is also important to note that GDP calculations take into account the market value of the goods and services produced.



ECONOMIC CYCLE

Unemployment Rate: The unemployment rate is the percentage of the working population that is not currently employed. The percentage only takes into account the number of people who are actively seeking employment.

Those who are unemployed and not seeking jobs are "voluntarily" unemployed. Many governments set benchmark unemployment rates since they are aware that a zero rate is next to impossible. If the actual aggregate unemployment rate is at or below the benchmark rate, the economy is considered to be fully employed. Unemployment Rate is an important macroeconomic variable because it measures the percentage of the labour force currently unemployed and actively seeking employment. A high unemployment rate is an undesirable macroeconomic situation because it means that a lot of people cannot find a job.

Inflation Rate: Inflation is defined as the general increase in price levels of goods and services in the economy leading to an erosion of purchasing power of money. Inflation can be caused by demand pull factors or cost push factors. An increase in the price of goods and services because demand being in excess of available supply, is called demand pull inflation. An increase in prices because of an increase in input costs is called cost-push inflation. To defuse the inflation, policy makers adopt several measures to reduce the demand or increase the supply or both. Further, interest and inflation are closely linked parameters. Higher inflation demands higher rates for people to get motivated to save. As they save more and consume less, consumption goes down. On the other hand, higher rates reduce the investments (high cost of capital) and may slow down the overall economy.

Interest Rate: The Interest Rate is the cost of borrowing money. In terms of macroeconomic reporting, the interest rate is the nominal rate. Nominal rates are not adjusted for inflation. The real interest rate is the rate of interest an investor, saver or lender receives (or expects to receive) after allowing for inflation. Lower interest rates typically occur when there is a need to stimulate consumer spending. For example, if the housing market has an excess of inventory and a decline in the number of buyers, lenders might reduce mortgage interest rates to stimulate demand. Interest rates influence macroeconomics through several channels. For instance, a high interest rate can be associated with lower inflation, because people will buy more bonds and bank investments, and this will result in less monetary expansion.

Exchange rate & Foreign institutional investors: Exchange rate is a medium of financial transactions between the countries. The entire import and export process of any country depends upon the exchange rate of his currency. If, the country currency will depreciate immediately increase its import value and decrease its exports value or vice versa. If the domestic currency is stronger, it adversely affects the export oriented companies and benefit to import oriented companies. The stock market will get benefit when the domestic currency value is appreciating.

Foreign institutional investors: FIIs plays an important role in the Indian economy. It is a short term investment made by international investors. It has bidirectional causation with the returns of other financial markets such as money market, stock market and foreign

exchange market. It is really significant for an emerging economy as FII exerts a larger impact on the domestic financial markets in the short run and a real impact in the long run.

Trade Balance: It shows the difference between the monetary value of imports and exports of a country. It may be favourable or unfavourable for a country. The large trade deficits are perceived as problematic for an economy, but not the smaller ones. If it is favourable, it generates confidence among the investors. They would like to invest or vice versa.

Fiscal Policies and their Impact on Economy: Fiscal policy contains the measures of the Government which deal with its revenues and expenses. Budgeted excess of Government‟s expenditure over its revenues in a specific year is known as fiscal deficit, which is generally defined as a percentage of GDP. A large fiscal deficit, and consequently a higher borrowing by the government, will push up interest rates in the economy and make it difficult for corporate borrowers to access funds. A high interest rate environment is detrimental to economic growth.

INDUSTRY ANALYSIS

Industry analysis is a type of investment research that begins by focusing on the status of an industry or an industrial sector. A form of fundamental analysis involving the process of making investment decisions based on the different stages an industry is at during a given point in time. The type of position taken will depend on firm specific characteristics, as well as where the industry is at in its life cycle.

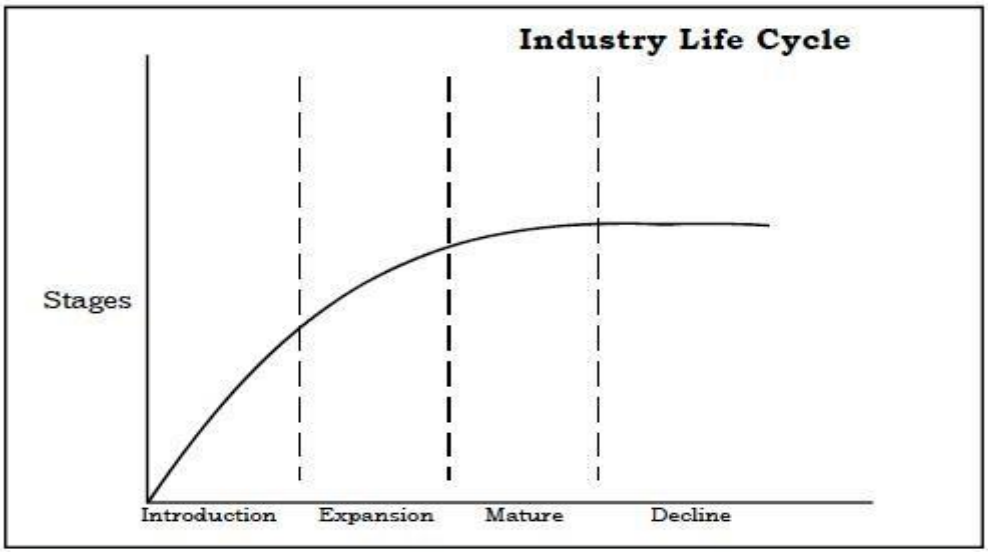
Industry Life Cycle Analysis: Many industrial economists believe that the development of almost every industry may be analysed in terms of following stages:

- **Pioneering stage:** New technologies like personal computers or wireless communication portray the initial stages of an industry. At this stage, it is very difficult to anticipate which firms will succeed; some firms will be a total success while some might fail completely. Hence, the risk involved in selecting any specific firm in the industry is quite high at this stage. However, at this stage, since the new product has not yet flooded its market, there will be a rapid growth in sales and earnings at industry level. Like, for example, in 1980‟s, personal computers were a part of very few houses, while on the other hand, products like fans or even refrigerators were part of almost every household. So naturally, the growth rate of products like refrigerators will be much less.

- **Rapid growth stage:** Once the product has proved itself in the market, several leaders in the industry start surfacing. The start-up stage survivors become more stable and market share can be easily envisaged. Thus, the performance of the industry in general will be more minutely tracked by the performance of the firms that have survived. As the product breaks through the market place and is used commonly, the growth rate of the industry is still faster than the rest of economy.

- **Maturity and stabilization stage:** The product has attained the full aptitude to be consumed at this stage by the users. So, any growth from this point just tracks the growth of the economy in general. At this stage, as the product gets more and more standardized, it compels the producers to compete heavily on price basis. As a result, the profit margins are lowered and add to the pressure on profits. Most often, firms at this stage are referred to as *cash cows* as their cash flows are quite consistent but offer very little opportunity for growth of profit. Instead of reinvesting the cash flows in the company, they are best *milked from*.

Industry Life Cycle



- **Decline stage:** In this stage following features are identified.
  - → Costs become counter-optimal
  - → Sales volume decline or stabilize
  - → Prices, profitability diminish
  - → Profit becomes a challenge of production/distribution efficiency than increased sales

Characteristics of an Industry Analysis: In an industry analysis, the following key characteristics should be considered by the analyst. These are explained as below:

1. **Post sales and Earnings performance:** The historical performance of sales and earnings should be given due consideration, to know how the industry have reacted in the past. With the knowledge and understanding of the reasons of the past behaviour, the investor can assess the relative magnitude of performance in future. The cost structure of an industry is also an important factor to look into. The higher the cost component, the higher the sales volume necessary to achieve the firm‟s break-even point, and vice-versa.
2. **Nature of Competition:** The top firms in the industry must be analysed. The demand of particular product, its profitability and price of concerned company scrip‟s also determine the nature of competition. The investor should analyse the scrip and should compare it with other companies. If too many firms are present in the industry, this will lead to a decline in price of the product.

3. **Raw Material and Inputs:** We need to have a look on industries which are dependent on raw material. An industry which has limited supply of raw material will have a less growth. Labour in also an input and problems with labour will also lead to growth difficulties.
4. **Attitude of Government towards Industry:** The government policy with regard to granting of clearance, installed capacity and reservation of the products for small industry etc. are also factors to be considered for industry analysis.
5. **Management:** An industry with many problems may be well managed, if the promoters and the management are efficient. The management has to be assessed in terms of their capabilities, popularity, honesty and integrity. A good management also ensures that the future expansion plans are put on sound basis.
6. **Labour Conditions and Other Industrial Problems:** The industries which depend on labour, the possibility of strike loom as an important factor to be reckoned with. Certain industries with problems of marketing like high storage costs, high transport costs etc. leads to poor growth potential and investors have to careful in investing in such companies.
7. **Nature of Product Line:** The position of industry in the different stages of the life cycle is to be noted. And the importance attached by planning commission on these industries assessment is to be studied.
8. **Capacity Installed and Utilized:** If the demand is rising as expected and market is good for the products, the utilization of capacity will be higher, leading to bright prospects and higher profitability. If the quality of the product is poor, competition is high and there are other constraints to the availability of inputs and there are labour problems, then the capacity utilization will be low and profitability will be poor.
9. **Industry Share Price Relative to Industry Earnings**: While making investment the current price of securities in the industry, their risk and returns they promise is considered. If the price is very high relative to future earnings growth, the investment in these securities is not wise. Conversely, if future prospects are dim but prices are low relative to fairly level future patterns of earnings, the stocks in this industry might be an attractive investment.
10. **Research and Development:** The proper research and development activities help in increasing economy of an industry and so while investing in an industry, the expenditure should also be considered.
11. **Pollution Standards:** These are very high and restricted in the industrial sector. These differ from industry to industry, for example, in leather, chemical and pharmaceutical industries the industrial effluents are more.

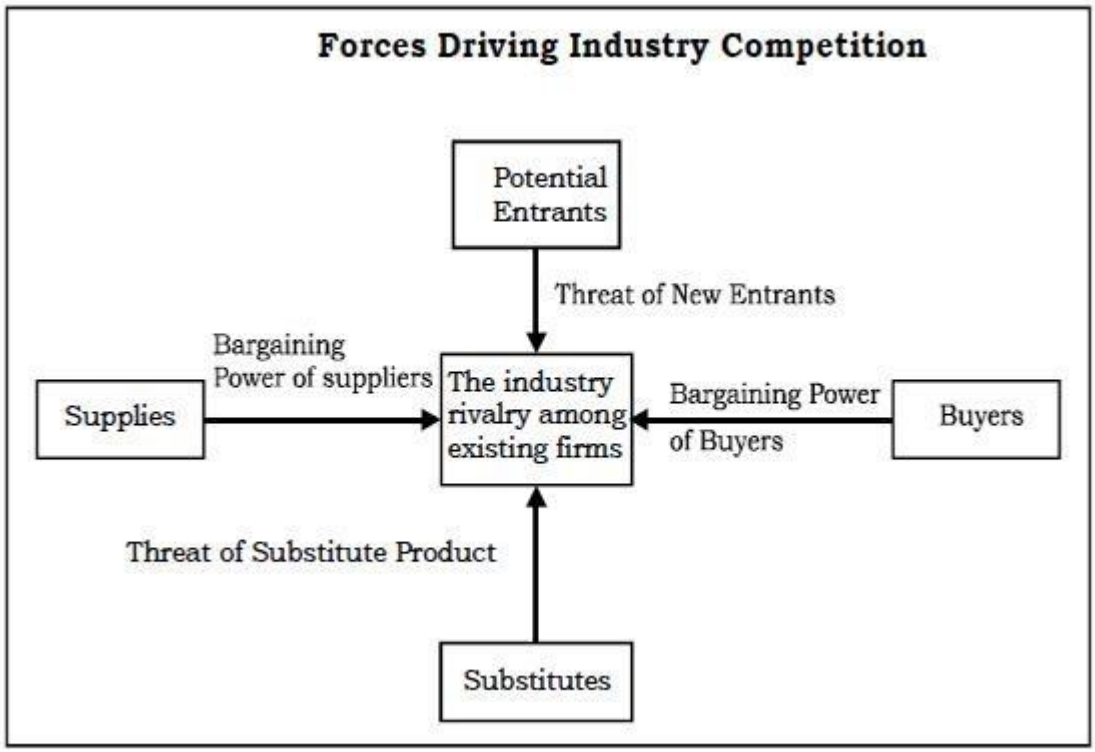
Profit Potential of Industries: Porter Model

Michael Porter (Harvard Business School Management Researcher) designed various vital frameworks for developing an organization‟s strategy. One of the most renowned among managers making strategic decisions is the five competitive forces model that determines industry structure. According to Porter, the nature of competition in any industry is personified in the following five forces:

- Threat of new potential entrants
- Threat of substitute product/services
- Bargaining power of suppliers
- Bargaining power of buyers
- Rivalry among current competitors

The five forces mentioned above are very significant from point of view of strategy formulation. The potential of these forces differs from industry to industry. These forces jointly determine the profitability of industry because they shape the prices which can be charged, the costs which can be borne, and the investment required to compete in the industry. Before making strategic decisions, the managers should use the five forces framework to determine the competitive structure of industry.

Forces driving industry competition



Let‟s discuss the five factors of Porter‟s model in detail:

Risk of entry by potential competitors: Potential competitors refer to the firms which are not currently competing in the industry but have the potential to do so if given a choice. Entry of new players increases the industry capacity, begins a competition for market share and lowers the current costs. The threat of entry by potential competitors is partially a function of extent of barriers to entry. The various barriers to entry are-

- Economies of scale
- Brand loyalty
- Government Regulation
- Customer Switching Costs
- Absolute Cost Advantage
- Ease in distribution
- Strong Capital base

Rivalry among current competitors: Rivalry refers to the competitive struggle for market share between firms in an industry. Extreme rivalry among established firms poses a strong threat to profitability. The strength of rivalry among established firms within an industry is a function of following factors:

- Extent of exit barriers
- Amount of fixed cost
- Competitive structure of industry
- Presence of global customers
- Absence of switching costs
- Growth Rate of industry
- Demand conditions

Bargaining Power of Buyers: Buyers refer to the customers who finally consume the product or the firms who distribute the industry‟s product to the final consumers. Bargaining power of buyers refer to the potential of buyers to bargain down the prices charged by the firms in the industry or to increase the firms cost in the industry by demanding better quality and service of product. Strong buyers can extract profits out of an industry by lowering the prices and increasing the costs. They purchase in large quantities. They have full information about the product and the market. They emphasize upon quality products. They pose credible threat of backward integration. In this way, they are regarded as a threat.

Bargaining Power of Suppliers: Suppliers refer to the firms that provide inputs to the industry. Bargaining power of the suppliers refer to the potential of the suppliers to increase the prices of inputs(labour, raw materials, services, etc) or the costs of industry in other ways. Strong suppliers can extract profits out of an industry by increasing costs of firms in the industry. Supplier‟s products have a few substitutes. Strong suppliers‟ products are unique. They have high switching cost. Their product is an important input to buyer‟s product. They pose credible threat of forward integration. Buyers are not significant to strong suppliers. In this way, they are regarded as a threat.

Threat of Substitute products: Substitute products refer to the products having ability of satisfying customer‟s needs effectively. Substitutes pose a ceiling (upper limit) on the potential returns of an industry by putting a setting a limit on the price that firms can charge for their product in an industry. Lesser the number of close substitutes a product has, greater is the opportunity for the firms in industry to raise their product prices and earn greater profits (other things being equal).

The power of Porter‟s five forces varies from industry to industry. Whatever be the industry, these five forces influence the profitability as they affect the prices, the costs, and the capital investment essential for survival and competition in industry. This five forces model also help in making strategic decisions as it is used by the managers to determine industry‟s competitive structure.

Porter ignored, however, a sixth significant factor- complementary. This term refers to the reliance that develops between the companies whose products work is in combination with each other. Strong complimentary might have a strong positive effect on the industry. Also, the five forces model overlooks the role of innovation as well as the significance of individual firm differences. It presents a stagnant view of competition.

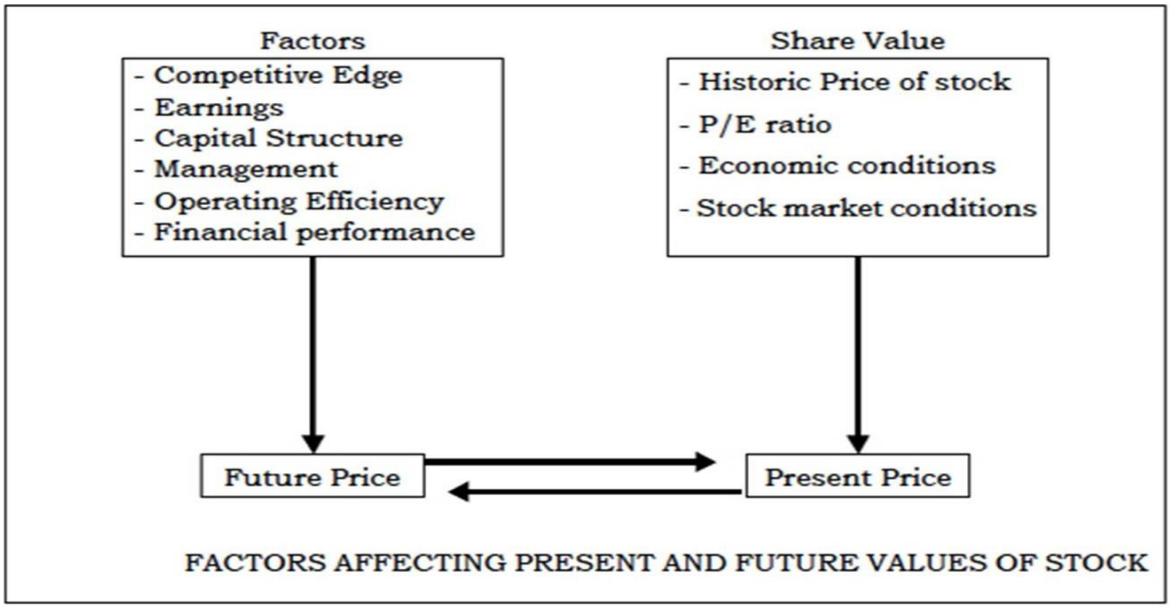
COMPANY ANALYSIS

Company analysis refers to the process of evaluating a company‟s profitability, profile and products or services. It is also known as “fundamental analysis,” and it is generally used by investors. It incorporates basic company information, such as the mission statement, goals and values. This process involves reviewing the history of a company and the events that contributed to shaping the firm. Moreover, it looks into the company‟s goods and services.

Company analysis studies the products manufactured by the company and analyses the quality and demand for these products. If the firm is in the service sector, the investor reviews the services offered to the related market. To evaluate a company, core elements, operations and functions are analysed. The reports from the analysis of various aspects of the firm put together the big picture of its corporate quality. Analysts use the SWOT (strength, weakness, opportunity, threat) approach to determine a firm‟s current and probable future position in its respective industry.

Thorough evaluation is essential in performing a company analysis, as it provides insight on the value of a company. This analysis helps investors assess the past performance and future prospects of the firm. It encompasses all aspects of the firm, including market share, profitability, growth prospects, finances and management structure. The results of a company analysis help external parties reach business decisions, such as investing or entering a partnership with the analysed company.

Fundamental analysis is not as simple as looking at numbers and computing ratios; it is also important to look at influences and qualities that do not have a number value. The present and future values are affected by the following factors:



FACTORS AFFECTING PRESENT AND FUTURE VALUES OF STOCK

1. **Competitive Edge:** Another business consideration for investors is competitive advantage. A company's long-term success is driven largely by its ability to maintain a competitive advantage - and keep it. Powerful competitive advantages, such as Coca Cola's brand name and Microsoft's domination of the personal computer operating system, create a moat around a business allowing it to keep competitors at bay and enjoy growth and profits. When a company can achieve competitive advantage, its shareholders can be well rewarded for decades.
   a. Market share: The market share of the company helps to determine a company‟s relative position within the industry. If the market share is high, the company would be able to meet the competition successfully. The size of the company should also be considered while analysing the market share, because the smaller companies may find it difficult to survive in the future.
   b. Growth of annual sales: Investor generally prefers to study the growth in sales because the larger size companies may be able to withstand the business cycle rather than the company of smaller size. The rapid growth keeps the investor in better position as growth in sales is followed by growth in profit. The growth in sales of the company is analysed both in rupee terms and in physical terms.
   c. Stability of annual sales: If a firm has stable sales revenue, other things being remaining constant, will have more stable earnings. Wide variation in sales leads to variation in capacity utilization, financial planning and dividends. This affects the Company‟s position and investor‟s decision to invest.
2. **Earnings:** The earning of the company should also be analyzed along with the sales level. The income of the company is generated through the operating (in service industry like banks- interest on loans and investment) and non-operating income (ant company, rentals from lease, dividends from securities). The investor should analyze the sources of income properly. The investor should be well aware with the fact that the earnings of the company may vary due to following reasons:
   - Change in sales.
   - Change in costs.
   - Depreciation method adopted.
   - Inventory accounting method.
   - Wages, salaries and fringe benefits.
   - Income tax and other taxes.
3. **Capital Structure:** Capital structure describes the mix of a firm's long-term capital, which consists of a combination of debt and equity. Capital structure is a permanent type of funding that supports a company's growth and related assets. By using three broad types of measurements—working capital, asset performance, and capital structure—you may evaluate the strength of a company's balance sheet, and thus its investment quality. A firm's judicious use of debt and equity is a key indicator of a strong balance sheet. A healthy capital structure that reflects a low level of debt and a high amount of equity is a positive sign of investment quality.

4. **Management:** Just as an army needs a general to lead it to victory, a company relies upon management to steer it towards financial success. Some believe that management is *the* most important aspect for investing in a company. It makes sense - even the best business model is doomed if the leaders of the company fail to properly execute the plan.
5. **Operating Efficiency:** Operational efficiency is the capability of an enterprise to deliver products or services to its customers in the most cost-effective manner possible while still ensuring the high quality of its products, service and support. Operational efficiency is often achieved by streamlining a company's core processes in order to more effectively respond to continually changing market forces in a cost-effective manner. In order to attain operational efficiency a company needs to minimize redundancy and waste while leveraging the resources that contribute most to its success and utilizing the best of its workforce, technology and business processes. The reduced internal costs that result from operational efficiency enable a company to achieve higher profit margins or be more successful in highly competitive markets.

6. Financial Performance:

a. *Balance Sheet*: The level, trends, and stability of earnings are powerful forces in the determination of security prices. Balance sheet shows the assets, liabilities and owner‟s equity in a company. It is the analyst‟s primary source of information on the financial strength of a company. Accounting principles dictate the basis for assigning values to assets. Liability values are set by contracts. When assets are reduced by liabilities, the book value of shareholder‟s equity can be ascertained. The book value differs from current value in the market place, since market value is dependent upon the earnings power of assets and not their cost of values in the accounts.

b. *Profit and Loss account*: It is also called as income statement. It expresses the results of financial operations during an accounting year i.e. with the help of this statement we can find out how much profit or loss has taken place from the operation of the business during a period of time. It also helps to ascertain how the changes in the owner‟s interest in a given period have taken place due to business operations. Last of all, for analysing the financial position of any company following factors need to be considered for evaluating present situation and prospects of company.

COMPANY ANALYSIS: THE STUDY OF FINANCIAL STATEMENTS

The massive amount of numbers in a company's financial statements can be bewildering and intimidating to many investors. On the other hand, if you know how to analyse them, the financial statements are a gold mine of information. Financial statements are the medium by which a company discloses information concerning its financial performance. The main techniques of financial analysis are:

1. Comparative Financial Statements
2. Trend Analysis
3. Common Size Statement
4. Fund Flow Statement
5. Cash Flow Statement
6. Ratio Analysis

1. ***Comparative Financial Statements:*** Financial statements of two or more firms may be compared for drawing inferences. This is known as inter-firm comparison. Similarly, there may be inter-period comparison, i.e., comparison of the financial statements of the same firm over a period of years known as trend analysis. This is also known as horizontal analysis, since each accounting variable for two or more years is analysed horizontally. Inter-firm or inter-period comparisons are very much facilitated by the preparation of comparative statements. In preparing these statements, the items are placed in the rows and the firms of years are shown in the columns. Such arrangement facilitates highlighting the difference and brings out the significance of such differences. The statement also provides for columns to indicate the change form one year to another in absolute terms and also in percentage form.
2. ***Trend Analysis*:** For analysing the trend of data shown in the financial statements it is necessary to have statements for a number of years. This method involves the calculation of percentage relationship that each statement item bears to the same item in the "base year". Trend percentages disclose changes in the financial and operating data between specific periods and make possible for the analyst to form an opinion as to whether favourable or unfavourable tendencies are reflected by the data.
3. ***Common Size Statement*:** Financial statements when read with absolute figures are not easily understandable, sometimes they are even misleading. It is, therefore, necessary that figures reported in these statements, should be converted into percentage to some common base. In profit and loss account sales figure is assumed to be equal to 100 and all other figures are expressed as percentage of sales. Similarly, in balance sheet the total of assets or liabilities is taken as 100 and all the figures are expressed as percentage of the total. This type of analysis is called vertical analysis. This is a static relationship because it is a study of relationship existing at a particular date. The statements so prepared are called common-size statements
4. ***Fund Flow Statement*:** Income Statement or Profit or Loss Account helps in ascertainment of profit or loss for a fixed period. Balance Sheet shows the financial position of business on a particular date at the close of year. Income statement does not fully explain funds from operations of business because various non-fund items are shown in Profit or Loss Account. Balance Sheet shows only static financial position of business and financial changes occurred during a year can"t be known from the financial statement of a particular date. Thus, Fund Flow Statement is prepared to find out financial changes between two dates. It is a technique of analysing financial statements. With the help of this statement, the amount of change in the funds of a business between two dates and reasons thereof can be ascertained. The investor could see clearly the amount of funds generated or lost in operations. These reveal the real picture of the financial position of the company.
5. ***Cash Flow Statement*:** The cash flow statement shows how much cash comes in and goes out of the company over the quarter or the year. At first glance, that sounds a lot like the income statement in that it records financial performance over a specified period. But there is a big difference between the two. What distinguishes the two is accrual accounting, which is found on the income statement. Accrual accounting requires companies to record revenues and expenses when transactions occur, not when cash is exchanged. At the same time, the income statement, on the other hand, often includes non-

cash revenues or expenses, which the statement of cash flows does not include. Indeed, one of the most important features you should look for in a potential investment is the company's ability to produce cash. Just because a company shows a profit on the income statement doesn't mean it cannot get into trouble later because of insufficient cash flows. A close examination of the cash flow statement can give investors a better sense of how the company will fare.

6. *Ratio Analysis*: Ratio is a relationship between two figures expressed mathematically. It is quantitative relationship between two items for the purpose of comparison. Ratio analysis is a technique of analysing financial statements. It helps in estimating financial soundness or weakness. Ratios present the relationships between items presented in profit and loss account and balance sheet. It summaries the data for easy understanding, comparison and interpretation. The ratios are divided in the following group:

Liquidity Ratios:

Liquidity ratios provide information about a firm's ability to meet its short-term financial obligations. They are of particular interest to those extending short-term credit to the firm. Two frequently-used liquidity ratios are the *current ratio* (or *working capital ratio*) and the *quick ratio*. The current ratio is the ratio of current assets to current liabilities:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Libilities}}$$

Short-term creditors prefer a high current ratio since it reduces their risk. Shareholders may prefer a lower current ratio so that more of the firm's assets are working to grow the business. One drawback of the current ratio is that inventory may include many items that are difficult to liquidate quickly and that have uncertain liquidation values. The quick ratio is an alternative measure of liquidity that does not include inventory in the current assets. The quick ratio is defined as follows:

$$\text{Quick Ratio} = \frac{\text{Current Assets - Inventory}}{\text{Current Liabiliites}}$$

The current assets used in the quick ratio are cash, accounts receivable, and notes receivable. These assets essentially are current assets less inventory. The quick ratio often is referred to as the *acid test*.

Asset Turnover Ratios: Asset turnover ratios indicate of how efficiently the firm utilizes its assets. They sometimes are referred to as efficiency ratios, asset utilization ratios, or asset management ratios. Two commonly used asset turnover ratios are *receivables turnover* and *inventory turnover*.

Receivables turnover is an indication of how quickly the firm collects its accounts receivables and is defined as follows:

$$\text{Receivables Tunover} = \frac{\text{Annual Credit Sales}}{\text{Accounts Receivable}}$$

Another major asset turnover ratio is *inventory turnover*. It is the cost of goods sold in a time period divided by the average inventory level during that period:

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Profitability ratios: Profitability ratios offer several different measures of the success of the firm at generating profits.

The *gross profit margin* is a measure of the gross profit earned on sales. The gross profit margin considers the firm's cost of goods sold, but does not include other costs. It is defined as follows:

$$\text{Gross Profit Margin} = \frac{\text{Sales - Cost of Goods Sold}}{\text{Sales}}$$

Return on assets is a measure of how effectively the firm's assets are being used to generate profits. It is defined as:

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Assets}}$$

Return on equity is the bottom line measure for the shareholders, measuring the profits earned for each dollar invested in the firm's stock. Return on equity is defined as follows:

$$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Shareholder Equity}}$$

Earnings and Role of Financing: Borrowing of money at a fixed cost and the use of these funds to earn return on assets is known as employing leverage. If one can earn more on borrowed money than you have to pay for it, the leverage is to firm‟s advantage. However, leverage should be used within reasonable limits because excessive use of debt relative to equity increases borrowing costs and also the cost of equity funds. The volatility of shareholders returns increases with the expansion of the degree of financial leverage. The greater volatility of earnings owing to increased leverage can, at certain levels of debt financing, cause the market to pay less per rupee of earnings. Further with the use of more debts it may become progressively difficult to maintain (or improve) the rate of return on assets. One of the best ways of measuring the proportions of debt and equity financing is:

a. Debt to asset ratio = Total Debt / Total Assets
b. Debt to equity ratio = Total Debt / Net Worth
c. Long term debt to equity = Long Term Debt/ Net Worth

Valuation Ratios:

Book value per share: A measure used by owners of common shares in a firm to determine the level of safety associated with each individual share after all debts are paid accordingly.

$$\text{Book Value Share} = \frac{\text{Total Shareholder Equity - Preferred Equity}}{\text{Total Out Standing Shares}}$$

Earnings per share (EPS): The portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serve as an indicator of a company's profitability. Calculated as:

$$= \frac{\text{Net Income - Dividends on preferred Stock}}{\text{Average Outstanding Shares}}$$

When calculating, it is more accurate to use a weighted average number of shares outstanding over the reporting term, because the number of shares outstanding can change over time. However, data sources sometimes simplify the calculation by using the number of shares outstanding at the end of the period.

Dividend per Share (DPS): The sum of declared dividends for every ordinary share issued. Dividend per share (DPS) is the total dividends paid out over an entire year (including interim dividends but not including special dividends) divided by the number of outstanding ordinary shares issued. DPS can be calculated by using the following formula:

Dividend per Share (DPS) = D- SD/S

Where:

→ D - Sum of dividends over a period (usually 1 year)
→ SD - Special, one time dividends
→ S - Shares outstanding for the period

Dividend Pay-out Ratio (D/P ratio): The percentage of earnings paid to shareholders in dividends. Calculated as: Dividend Yield per share/ Earnings per share

Dividend and Earnings Yield:

These ratios are used to evaluate the profitability from the stand point of ordinary shareholders. Earnings per share (EPS) and Dividend per Share (DPS) are calculated on the basis of book value of share but yield is always calculated on the basis of market value of shares. This ratio is called as Earnings Price ratio.

Dividend Yield = Dividend per share/ Market value per share
Earnings Yield = Earnings per share/ Market value per share

Price to Earnings Ratio:

A valuation ratio of a company's current share price compared to its per-share earnings. Calculated as: Market price per share/ Earnings per share

TECHNICAL ANALYSIS

Technical analysis is a process used to examine and predict the future prices of securities by looking at things like price movement, charts, trends, trading volume and other factors. Unlike fundamental analysis, technical analysis focuses on trading signals to delineate good investments and trading opportunities by examining an investment's trends through its trading data and other statistical elements. As a general rule, technical analysis prizes the current or past price of a security as the best indicator of the future price of that security. Technical analysis relies heavily on financial charts, data and statistics to uncover an investment's strengths or possible weaknesses and forecast trends in order to help analysts and investors decide if a security is viable or not, and for what action.

Assumptions:

Technical analysis is based on several underlying assumptions that it uses to examine stocks and securities:

History Repeats Itself: One of the major tenets of technical analysis is the assumption that history repeats itself, especially with regard to security prices. Technical analysts maintain that prices move in a cyclical nature over time, especially when considering market behaviour and human emotions. Looking at things like alternating bull markets and bear markets, the "history-repeating-itself" hypothesis makes sense in a broader sense of market psychology. Because of this assumption, technical analysis frequently looks at chart patterns to track how the market acts over time and how prices change, using that as a potential predictor for future price movements.

Price and the Market Discounts Everything: Another major assumption that technical analysts base their work on is that because price supposedly takes financials, the economy and the overall market into account inherently, examining these factors separately is unnecessary. In other words, technical analysts consider fundamental analysis largely unnecessary due to the fact that many of the things that fundamental analysts examine about a security or company are already factored in to the price of that security, thereby making technical analysis more important.

Prices Are Trend-Driven: Lastly, one of the biggest assumptions technical analysis makes is that prices follow trends and aren't random. Much of technical analysis involves examining data and chart patterns of historical prices as well as current ones, as technical analysts believe those prices move in trends of different lengths like short term, medium term and long term.

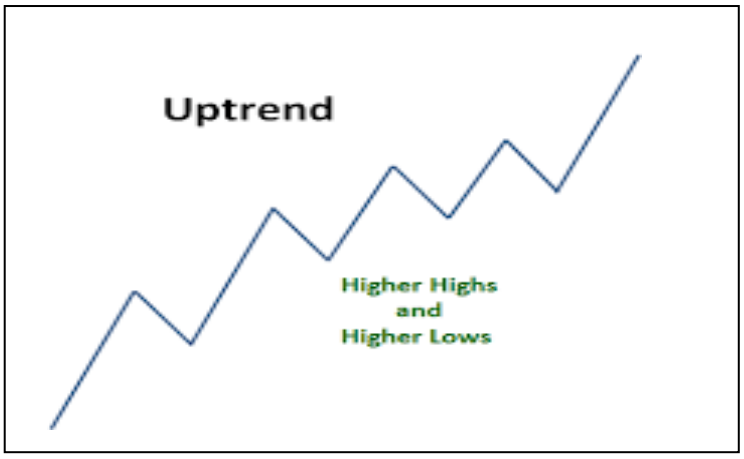
DOW THEORY

Any attempt to trace the origins of technical analysis would inevitably lead to Dow Theory. Dow believed that the stock market as a whole was a reliable measure of overall business conditions within the economy and that by analysing the overall market; one could accurately gauge those conditions and identify the direction of major market trends and the likely direction of individual stocks. Dow first used his Theory to create the Dow Jones Industrial Index and the Dow Jones Rail Index (now Transportation Index), which were originally compiled by Dow for The Wall Street Journal.

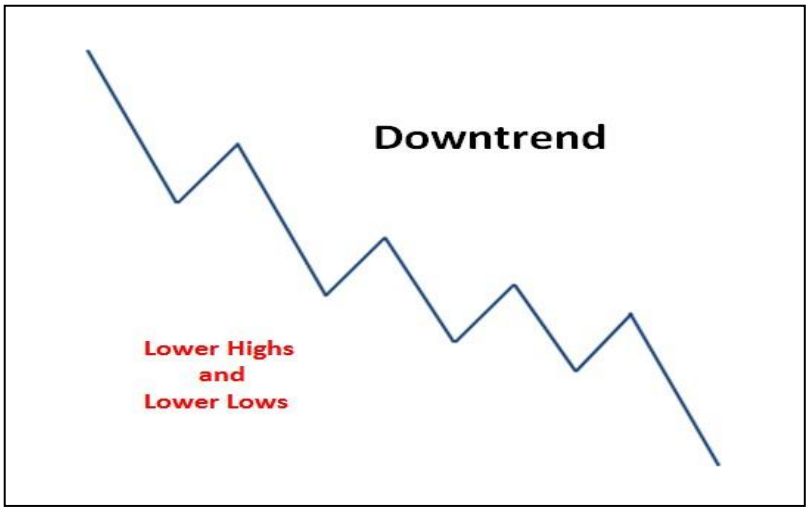
An important part of Dow Theory is distinguishing the overall direction of the market. To do this, the Theory uses trend analysis.

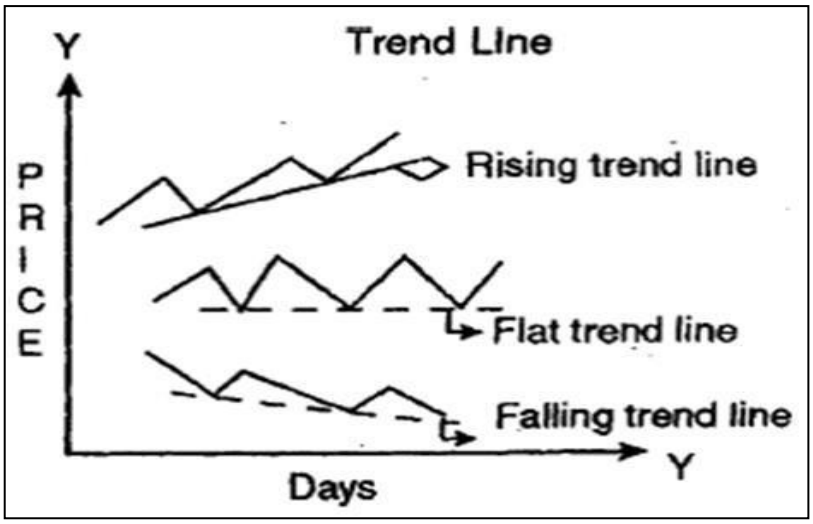
Before we can get into the specifics of Dow Theory trend analysis, we need to understand trends. First, it's important to note that while the market tends to move in a general direction, or trend, it doesn't do so in a straight line. The market will rally up to a high (peak) and then sell off to a low (trough), but will generally move in one direction.

An upward trend is broken up into several rallies, where each rally has a high and a low. For a market to be considered in an uptrend, each peak in the rally must reach a higher level than the previous rally's peak, and each low in the rally must be higher than the previous rally's low.



A downward trend is broken up into several sell-offs, in which each sell-off also has a high and a low. To be considered a downtrend in Dow terms, each new low in the sell-off must be lower than the previous sell-offs low and the peak in the sell-off must be lower than the peak in the previous sell-off.





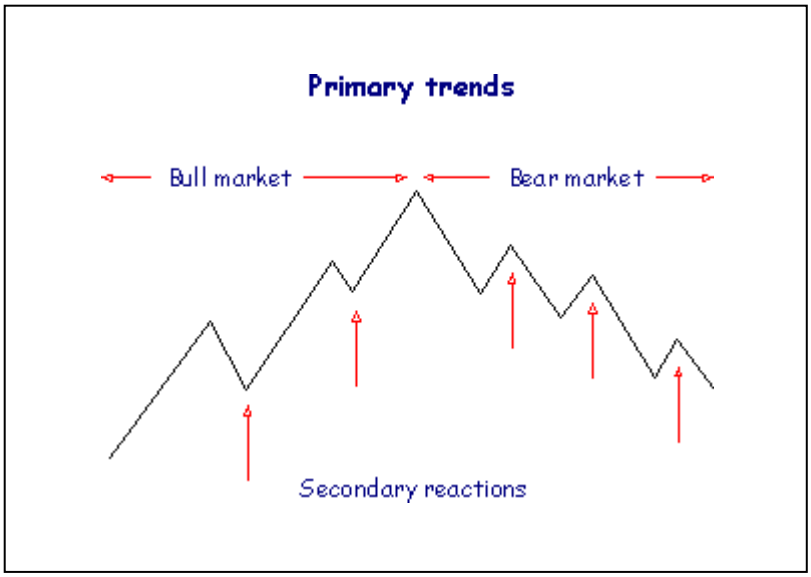
Now that we understand how Dow Theory defines a trend, we can look at the finer points of trend analysis. Dow Theory identifies three trends within the market: primary, secondary and minor. *A primary trend is the largest trend lasting for more than a year, while a secondary trend is an intermediate trend that lasts three weeks to three months and is often associated with a movement against the primary trend. Finally, the minor trend often lasts less than three weeks and is associated with the movements in the intermediate trend.*

Primary Trend

In Dow Theory, the primary trend is the major trend of the market, which makes it the most important one to determine. This is because the overriding trend is the one that affects the movements in stock prices. The primary trend will also impact the secondary and minor trends within the market. Dow determined that a primary trend will generally last between one and three years but could vary in some instances. Regardless of trend length, the primary trend remains in effect until there is a reverse trend.

For example, if in an uptrend the price closes below the low of a previously established trough, it could be a sign that the market is headed lower, and not higher.

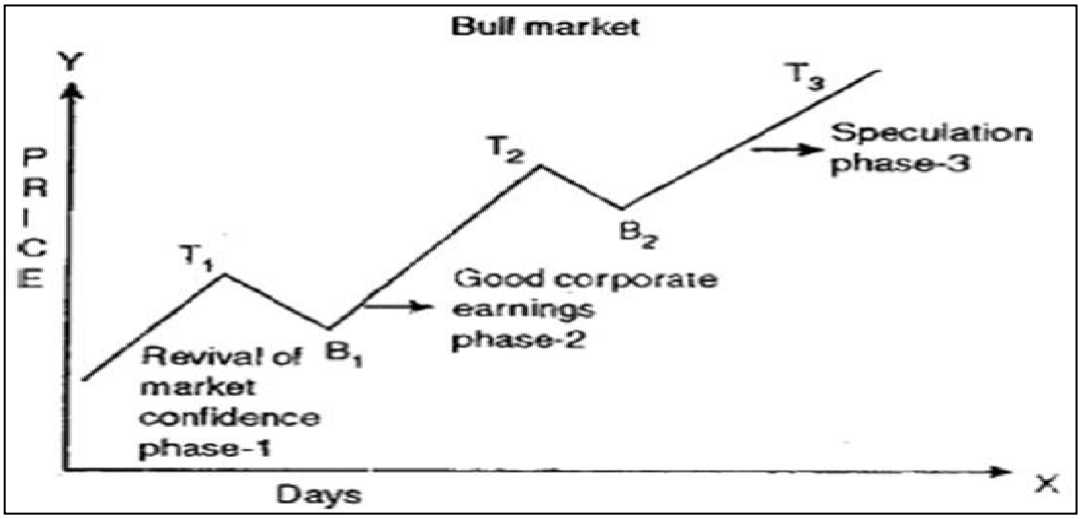
When reviewing trends, one of the most difficult things to determine is how long the price movement within a primary trend will last before it reverses. The most important aspect is to identify the direction of this trend and to trade with it, and not against it, until the weight of evidence suggests that the primary trend has reversed.

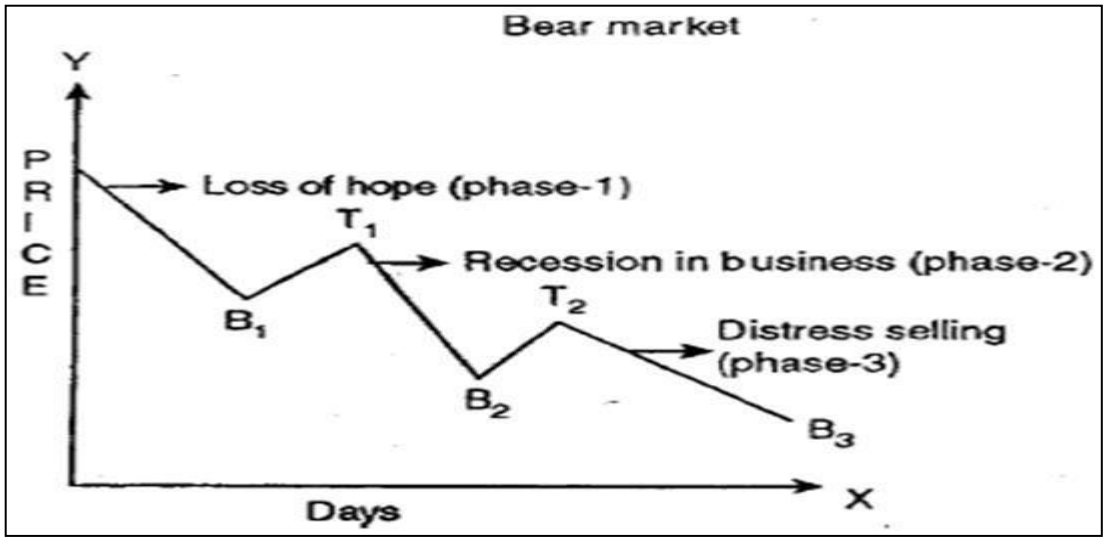


Secondary, or Intermediate, Trend

In Dow Theory, a primary trend is the main direction in which the market is moving. Conversely, a secondary trend moves in the opposite direction of the primary trend, or as a correction to the primary trend.

For example, an upward primary trend will be composed of secondary downward trends. This is the movement from a consecutively higher high to a consecutively lower high. In a primary downward trend the secondary trend will be an upward move, or a rally. This is the movement from a consecutively lower low to a consecutively higher low. Another important characteristic of a secondary trend is that its moves are often more volatile than those of the primary move.





Minor Trend:

The last of the three trend types in Dow Theory is the minor trend, which is defined as a market movement lasting less than three weeks. The minor trend is generally the corrective moves within a secondary move, or those moves that go against the direction of the secondary trend. Due to its short-term nature and the longer-term focus of Dow Theory, the minor trend is not of major concern to Dow Theory followers. But this doesn't mean it is completely irrelevant; the minor trend is watched with the large picture in mind, as these short-term price movements are a part of both the primary and secondary trends.

Most proponents of Dow Theory focus their attention on the primary and secondary trends, as minor trends tend to include a considerable amount of noise. If too much focus is placed on minor trends, it can to lead to irrational trading, as traders get distracted by short-term volatility and lose sight of the bigger picture.

Technical Analysis Basics:

Given that technical analysis focuses on price, movement, volume and trends, there are several basic aspects and charts that technical analysts look at rather than things like financial statements, which fundamental analysts look at.

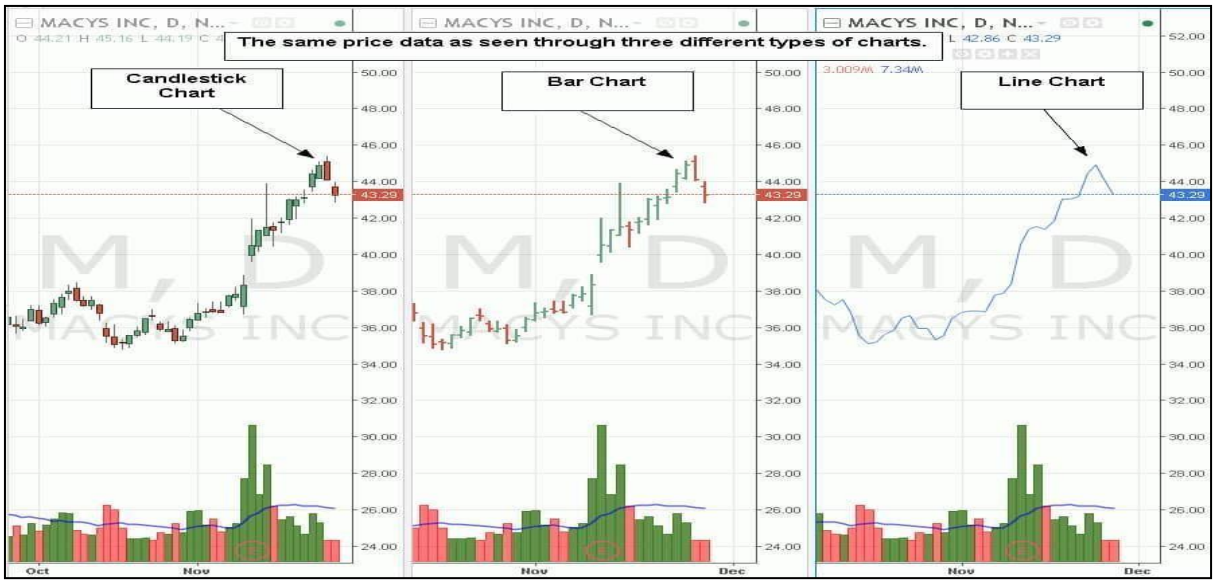
Price: One of the biggest factors technical analysts examine is the price of the security. In fact, price action is the primary measure considered when conducting technical analysis.

Technical analysts start by examining charts that show a security's price and trading volume to note its historical performance and help predict future movements. The basic function of using charts to examine stocks or other securities is to identify trends in the investment's price or trading volume and how those trends change over time.

Technical analysis views investor attitudes and behaviour (i.e., the market's psychological aspects) as the biggest movers of securities prices over time. And given the often-cyclical nature of trading patterns, they're also key indicators of how prices will move and change in the future.

Chart Patterns and Analysis: As the bread and butter of technical analysis, chart patterns are one of the main ways analysts examine and predict where a stock or security will trade down the road.

One of the most important parts of charts for technical analysis is a so-called "trend line," which shows a security's overall price trend. Additionally, things like "peak/trough analysis" and "moving averages" can help investors or analysts get a better prediction of what stocks are going to do. While charts look very mathematical, they're really based on plotting and giving a visual representation to investor emotion and market psychology, depicting moves in prices over time.



Volume: Another major factor used in technical analysis is volume. Volume is simply the number of shares or contracts that trade for a certain security over a certain period of time, which is generally one day. For technical analysis, looking at the volume of a stock or security can help analysts determine the strength of a price movement or trend by showing the amount of shares being traded in that direction (up or down). Technical analysts use volume as an excellent method of confirming the trend. Therefore, the analyst looks for a price increase on heavy volume relative to the stock"s normal trading volume as an indication of bullish activity. Conversely, a price decline with heavy volume is bearish. A generally bullish pattern would be when price increase are accompanied by heavy volume and the small price increase reversals occur with the light trading volume, indicating limited interest in selling and taking profits and vice-versa.

Breadth of the Market: The breadth of the market is the term often used to study the advances and declines that have occurred in the stock market. Advances mean the number of shares whose prices have increased from the previous day"s trading. Decline indicates the number of shares whose prices have fallen from the previous day"s trading. This is easy to plot and watch indicator because data are available in all business dailies.

The net difference between the number of stocks advanced and declined during the same period is the breadth of market. A cumulative index of net differences measures the net breadth. An illustrative calculation of the breadth of the market is shown in Table below:

Day	Advances	Declines	Net Advances or declines	Breadth of the market
Tuesday	630	527	103	103
Wednesday	690	475	215	318
Thursday	746	424	322	640
Friday	492	630	-138	502
Monday	366	701	-335	167
Tuesday	404	698	-294	-127

To analyse the breadth of the market, it is compared with one or two market indices. Ordinarily, the breadth of the market is expected to move in tandem with market indices. However, if there is a divergence between the two, the technical analysts believe that it signals something. It means, if the market index is moving upwards whereas the breadth of the market is moving downwards, it indicates that the market is likely to turn bearish. Likewise, if the market index is moving downwards but the breadth of the market is moving upwards, then it signals that the market may turn bullish.

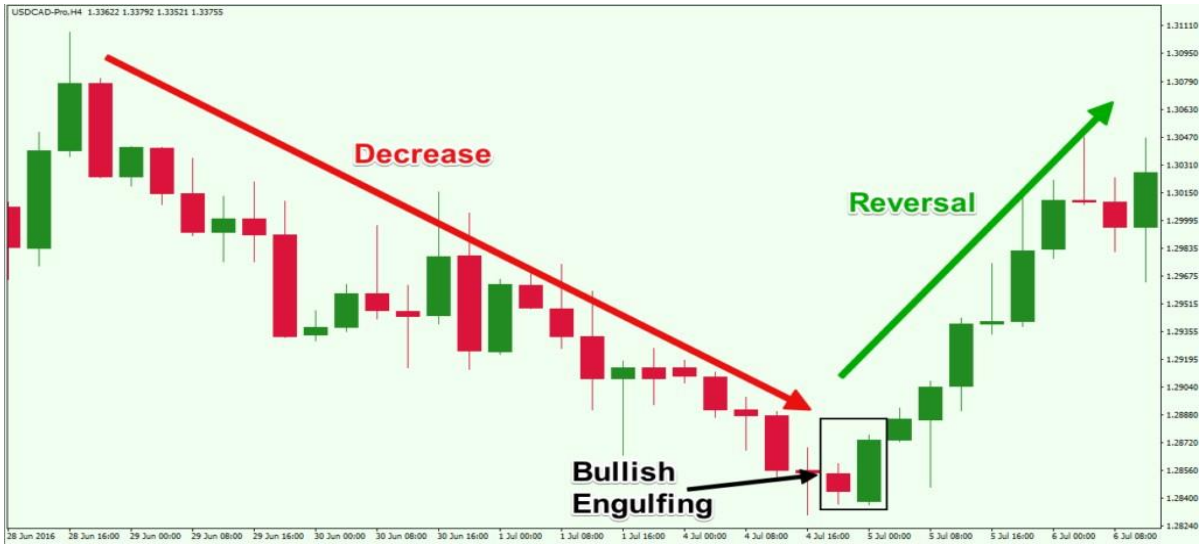
Trend: For a technical analyst, trend is perhaps one of the most important indicators of a stock or security's future performance. Technical analysis prizes examining historical trends to forecast what a stock's price might do in the future. For this reason, human behaviour and emotions play a surprisingly key role in technical analysis, as patterns of trading and price movements from the past often indicate how the stock or security might behave in the future.

The three main types of trends are **"uptrends," "downtrends" and "horizontal**" trends. Uptrends are characterized by higher lows and higher highs, while downtrends are characterized by lower lows and lower highs. (Horizontal trends involve highs and lows that are essentially unchanged.)

And while you could get into the weeds examining each different trend, in general, trends represent the overall direction of a stock's price, which might include its highs and lows. In addition, trends have various lengths that analysts use to interpret data -- most commonly "short term," "intermediate term" and "long term." Stocks can experience different trends in the short term (like a brief decrease in price) while still experiencing growth in the long term, so it's important to understand the time frame when analysing trends.

Trend Reversal: A trend reversal occurs when the direction of a stock (or any financial trading instrument) changes and moves back in the opposite direction. Up trends that reverse into downtrends and downtrends that reverse into up trends are examples of trend reversals.

An uptrend is bullish price action continues to make sequential higher highs and higher lows. A bullish reversal forms when the stock ceases making higher highs and starts to make lower highs and lower lows thereby reversing the direction from up to down. A bearish trend reversal follows the same lines inversely. A downtrend is bearish price action whereby the stock makes lower highs and lower lows. Each bounce attempt gets sold forming the lower high and each prior low gets sold harder to make lower lows. When the price stops making lower lows and establishes a higher low and continues to rise with higher highs and higher lows, it has formed a bearish trend reversal.



Support and Resistance: Support represents a price where demand for a stock is high enough to typically prevent the price from dipping below that line. Conversely, resistance represents the point where sellers of the stock will come in a dump their shares, keeping the security from moving above a higher price. If a stock's price dips below its recent support line, that's bad news that could indicate a bearish trend for the security. But if a stock breaks above its recent resistance line, that typically means that the name is experiencing a bullish

trend. In essence, support is the floor price of the stock supporting it to stay higher, while resistance is the ceiling that's keeping the stock's price from going higher. Examining where a stock's price currently sits between the support and resistance lines is a major tool that technical analysts use to determine price trends. Because stock prices tend to bounce between support and resistance lines, both are crucial to predicting when a price might move or not (and in which direction).

Support and resistance levels are extremely important in identifying trends and when they might reverse. That's why they're one of technical analysis' key concepts.

Breakout: Breakout is a point when the stock‟s price moves above resistance or below support. It is a technical analysis term, used to indicate a rise in a stock‟s price above its resistance level (such as its previous high price) or drop below its support level (commonly the last lowest price.) The assumption is that the stock will continue to move in the same direction following the breakout, which generates a buy or sell signal.

Indicators and Oscillators:

Apart from just resistance or support levels, technical analysts also examine some key indicators like "money flow," "volatility," "momentum" and more to get a mathematical view of the stock or other security.

Indicators: Indicators are calculations based on statistics like price and volume that help confirm chart patterns and other trends. They're designed to create buy or sell "signals" that help traders or analysts determine where to best enter or exit a trade (and therefore make the most money). By examining these indicators, analysts are able to better confirm a stock's price movements, and therefore the validity of specific chart patterns that experts think they're seeing.

There are plenty of indicators that technical analysts use. Some of the main ones include the "Moving Average Convergence/Divergence" (or "MACD")." Indicators can be "lagging" or

"leading," meaning that they're either using past data to help describe what's happening to a stock's price or that they're predicting future price action.

Simple Moving Average (SMA): A simple moving average (SMA) is an arithmetic moving average calculated by adding recent closing prices and then dividing that by the number of time periods in the calculation average. A simple, or arithmetic, moving average is calculated by adding the closing price of the security for a number of time periods and then dividing this total by that same number of periods. Short-term averages respond quickly to changes in the price of the underlying, while long-term averages are slow to react.

Exponential Moving Average – EMA: An exponential moving average (EMA) is a type of moving average (MA) that places a greater weight and significance on the most recent data points. The exponential moving average is also referred to as the exponentially weighted moving average. An exponentially weighted moving average reacts more significantly to recent price changes than a simple moving average (SMA), which applies an equal weight to all observations in the period.

$$EMA = (P * \alpha) + (Previous\ EMA * (1 - \alpha))$$

P = Current Price

α = Smoothing Factor = $\frac{2}{1+N}$

N = Number of Time Periods

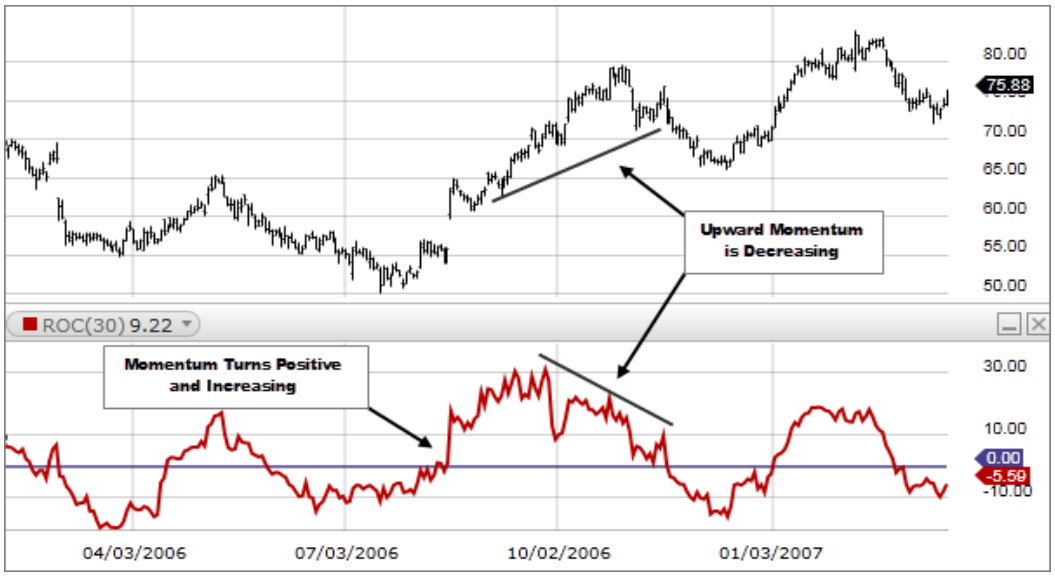
EMA vs. SMA

- The major difference between an exponential moving average and a simple moving average is the sensitivity each one shows to changes in the data used in its calculation.
- More specifically, the EMA gives a higher weighting to recent prices, while the SMA assigns equal weighting to all values.
- The two averages are similar because they are interpreted in the same manner and are both commonly used by technical traders to smooth out price fluctuations.
- Since EMAs place a higher weighting on recent data than on older data, they are more reactive to the latest price changes than SMAs are, which makes the results from EMAs timelier and explains why the EMA is the preferred average among many traders.

Oscillators:

Some of the indicators are also "oscillators," or tools that functions by showing short-term overbought or oversold conditions of stocks. Oscillators are typically bound in a certain range (or between set levels or lines).

Rate of Change (ROC): The Rate-of-Change (ROC) indicator, which is also referred to as simply Momentum, is a pure momentum oscillator. The ROC calculation compares the current price with the price "n" periods ago. The plot forms an oscillator that fluctuates above and below the zero line as the Rate-of-Change moves from positive to negative. Like other momentum indicators, ROC has overbought and oversold zones that may be adjusted according to market conditions. Remember, a security can become oversold / overbought and remain oversold/overbought for an extended period.

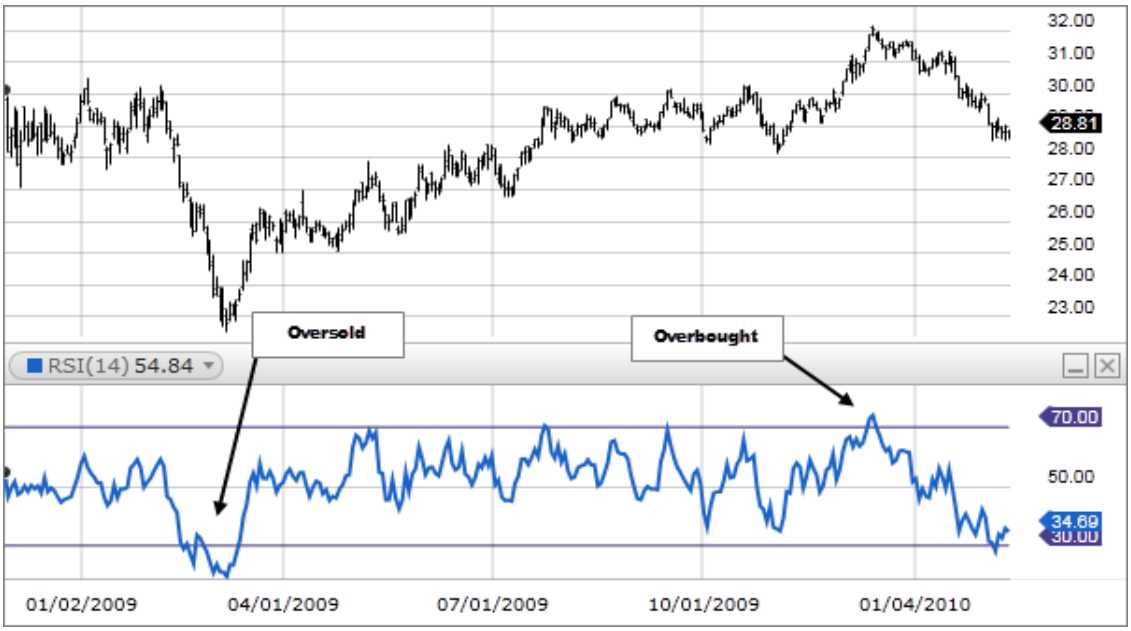


- An upward surge in the Rate-of-Change reflects a sharp price advance. A downward plunge indicates a steep price decline.
- In general, prices are rising as long as the Rate-of-Change remains positive. Conversely, prices are falling when the Rate-of-Change is negative.
- ROC expands into positive territory as an advance accelerates. ROC moves deeper into negative territory as a decline accelerates.

Formula:

ROC = *[(Today's Closing Price – Closing Price n periods ago) / Closing Price n periods ago]* x *100*

Relative Strength Index (RSI): The Relative Strength Index (RSI), is a momentum oscillator that measures the speed and change of price movements. The RSI oscillates between zero and 100. Traditionally the RSI is considered overbought when above 70 and oversold when below 30. Signals can be generated by looking for divergences and failure swings. RSI can also be used to identify the general trend.



RSI is considered overbought when above 70 and oversold when below 30. These traditional levels can also be adjusted if necessary to better fit the security. For example, if a security is repeatedly reaching the overbought level of 70 you may want to adjust this level to 80. During strong trends, the RSI may remain in overbought or oversold for extended periods.

Formula:

RSI = *100 – [100 / (1 + (Average of Upward Price Change / Average of Downward Price Change))]*

CHARTS IN TECHNICAL ANALYSIS

One of the main methods used by technical analysts to forecasting security prices is by the recognition of patterns and trends of security prices, and the easiest way to spot patterns and trends is through the use of charts. In fact, the use of charts is so prevalent, that technical analysts are often called chartists. Originally, charts were drawn by hand, but most charts nowadays are drawn by computer. Charts are graphical displays of price information of securities over time. Often, such charts also show volume. Besides allowing the technical analyst to easily spot patterns and trends, the main benefits of charts are the concise presentation of price and volume information over a given duration.

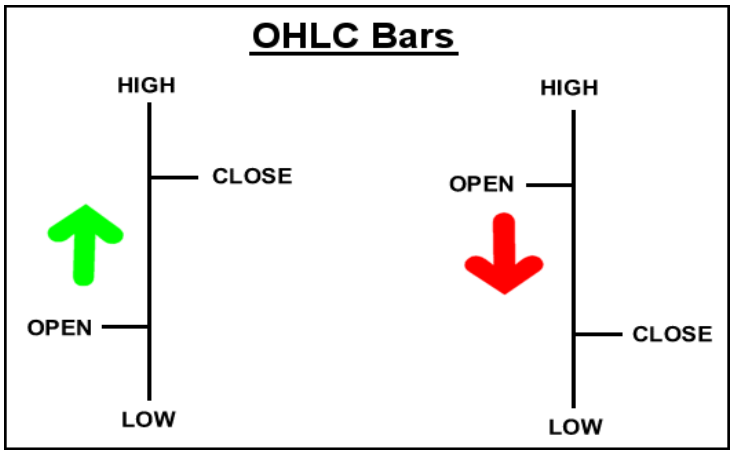
Line Charts

Line charts are the simplest form of charts depicting price changes over an interval of time. Usually, only the closing price is graphed, depicted by a single point. The series of these points constitutes a line—hence, the name. However, intraday price changes can also be plotted, either by plotting each trade, or by selecting the last price of a given interval, such as

an hour or 15 minutes. Because line graphs are simple, it is easier to compare the prices of multiple securities or indexes on the same graph.

Bar Chart

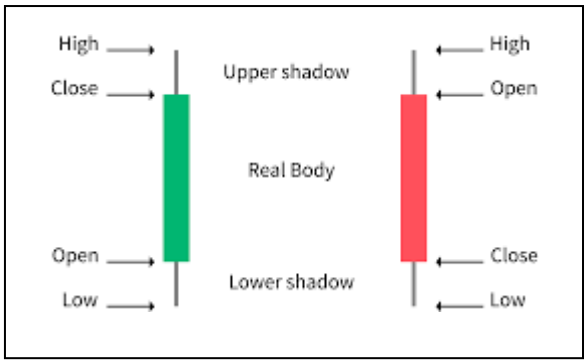
One of the basic tools of technical analysis is the bar chart. Bar charts are also referred to as open-high-low-close (OHLC) charts. They are comprised of a series of vertical lines that indicate the price range during that Time Frame. Bar charts enable traders to discover patterns more easily as they take into account all the prices, open, high, low and close. The opening price is the horizontal dash on the left side of the horizontal line and the closing price is located on the right side of the line. If the opening price is lower than the closing price, the line is often colored black (or green) to represent a rising period. The opposite is true for a falling period, which is represented by a red color.

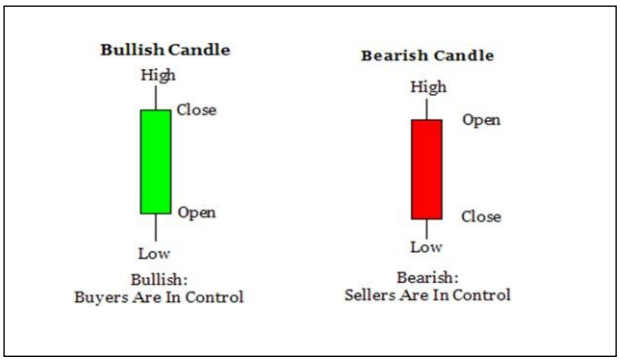


Japanese Candlestick or Candlestick Chart:

Another kind of chart used in the technical analysis is the candlestick chart, so-called because the main component of the chart which represents prices looks like a candlestick, with a thick „body" and usually, a line extending above and below it, called the upper shadow and lower shadow, respectively.

Japanese Candlestick or Candlestick Chart





The top of the upper shadow represents the high price, while the bottom of the lower shadow shows the low price. Patterns are formed both by the real body and the shadows. Candlestick patterns are most useful over short periods of time, and mostly have significance at the top of an uptrend or the bottom of a downtrend, when the patterns most often indicate a reversal of the trend.

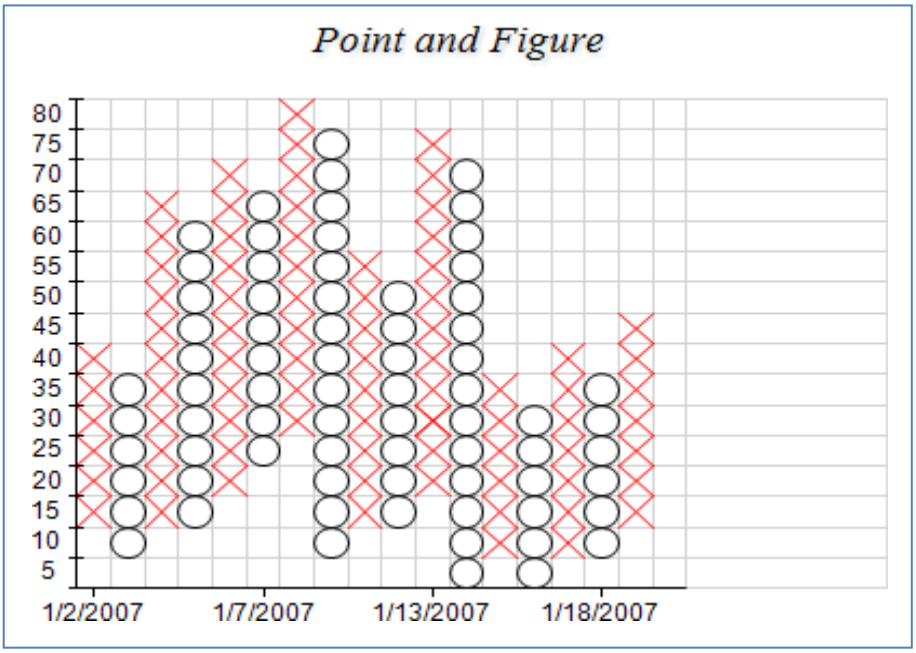
The wider part of the candlestick is shown between the opening and closing price. It is usually colored in black/red when the securities close on a lower price and white/green the other way around. The thinner parts of the candlestick are commonly referred to as the upper/lower wicks or as shadows. These show us the highest and/or lowest prices during that timeframe, compared to the closing as well as opening price.

The relationship between the bodies of candlesticks is important to candlestick patterns. Candlestick charts make it easy to spot gaps between bodies. A slight drawback of the candlestick chart is that candlesticks take up more space than OHLC bars. In most charting platforms, the most you can display with a candlestick chart is less than what you can with a bar chart.

Point-and-Figure Chart:

A point-and-figure chart is a graph which records discrete price changes without accounting for an associated period of time. They are often used in technical analysis as a means of predicting future price changes.

A point-and-figure chart records and displays specific whole-number changes in the price of a security. In other words, unless a change is large enough to accommodate this amount, referred to as a box, the change is not recorded (e.g. a change of Rs.0.50 where a box size is Rs.1.00 would not be recorded). The price scale is on the y-axis with no time series or other variable on the x-axis. Upward price changes are generally shown with an "X" and downward changes with an "O" as shown below:



Changes are recorded from left to right with each column exclusively displaying Xs or Os as price changes occur. Consecutive changes in the same direction are recorded in the same column. For this reason, a change in the direction of a price movement (i.e. from positive to negative) is represented by a new column. Multiple columns, therefore, always alternate between Xs and Os and no two consecutive columns can begin or end on the same line (i.e. price level).

Chart Patterns

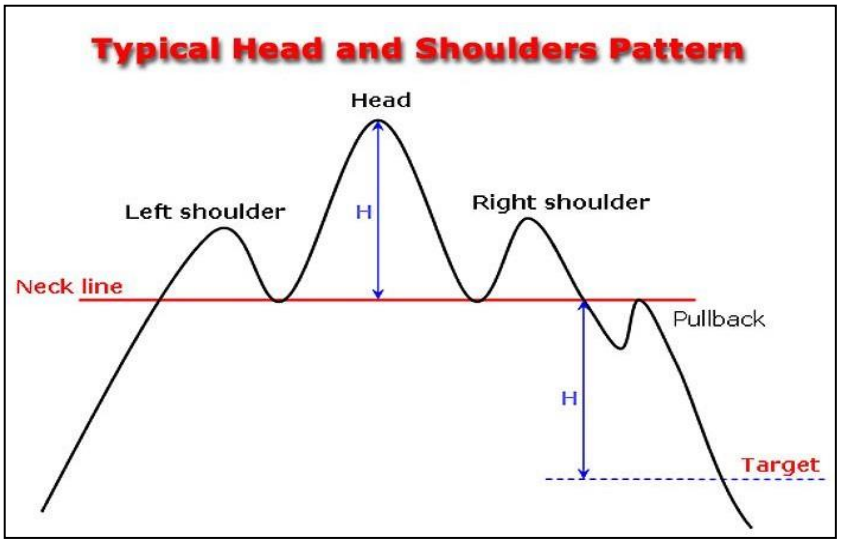
The technical analysis of chart patterns is based on the assumption that history repeats itself. The idea is that certain patterns are seen many times, and that these patterns signal a certain high probability move in a stock. Based on the historic trend of a chart pattern setting up a certain price movement, chartists are more likely to identify these patterns for trading or holding opportunities.

Reversal and Continuation in Stock Chart Patterns: Reversal and continuation are two types of patterns within this area of technical analysis. A reversal pattern signals that a prior trend will reverse upon completion of the pattern while a continuation pattern signals that a trend will continue once the pattern is complete. These patterns can be found over charts of any timeframe.

There tend be general ideas and components to every chart pattern, but unfortunately, there is no chart pattern that will tell you with complete certainty in which direction a security is headed. This creates some flexibility and deliberation as to what a good pattern looks like, which is why charting is often seen as more of an art than an absolute science.

Head and Shoulders Pattern:

Head and shoulders pattern is a technical analysis term referring to a chart formation in which a price exhibits three successive rallies, the second one being the highest. Head and shoulders pattern is one of the most widely used and reliable chart patterns in technical analysis.



The pattern gets its name from the fact that on a chart the first and third rallies look like shoulders and the second looks like a head because it is the highest of the three. Head and shoulders pattern is believed by technical analysts to be a bearish indicator. It is a reversal chart pattern that when formed, signals that the security is likely to move against the previous trend.

Cup and Handle Chart:

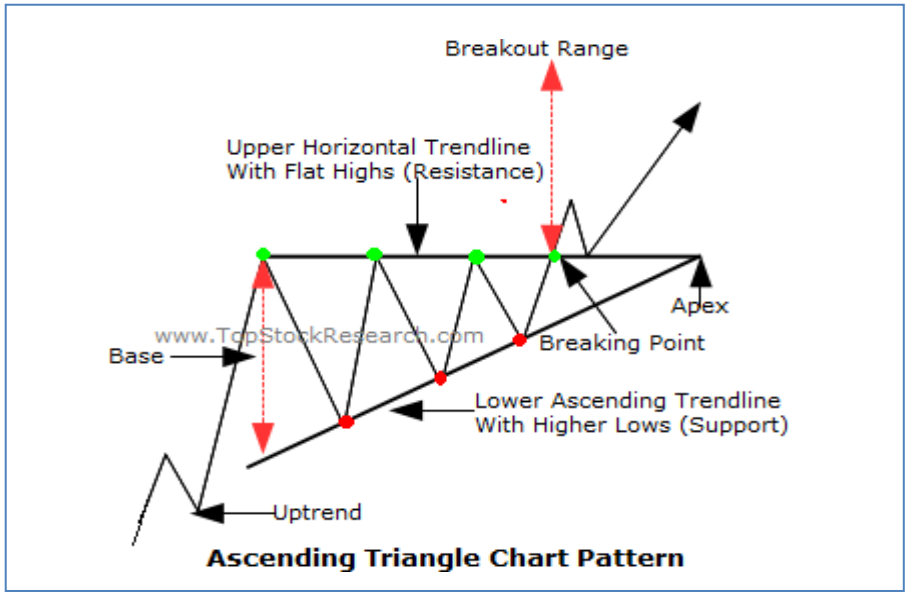
A technical analysis cup and handle chart is a pattern in which the upward trend has paused but will continue in an upward direction once the pattern is confirmed. It is a bullish continuation pattern that is basically a variation of the double top chart pattern. The cup and

handle pattern traditionally forms after a popular stock closes at a new high following a positive fundamental development. Because the stock is surging, investors feel more comfortable paying higher prices for it. Unfortunately, the stock price gets to a point where its story fails to continue to convert believers. When the stock hits this point, it begins to drift lower because the stock‟s new believers are now outnumbered by those who are looking to sell and lock-in their profits. Even though the stock is still producing positively, many investors eventually start to question whether or not the stock is really worth the current market price and over time, the value of the stock starts to slowly decline.

Triangle Pattern

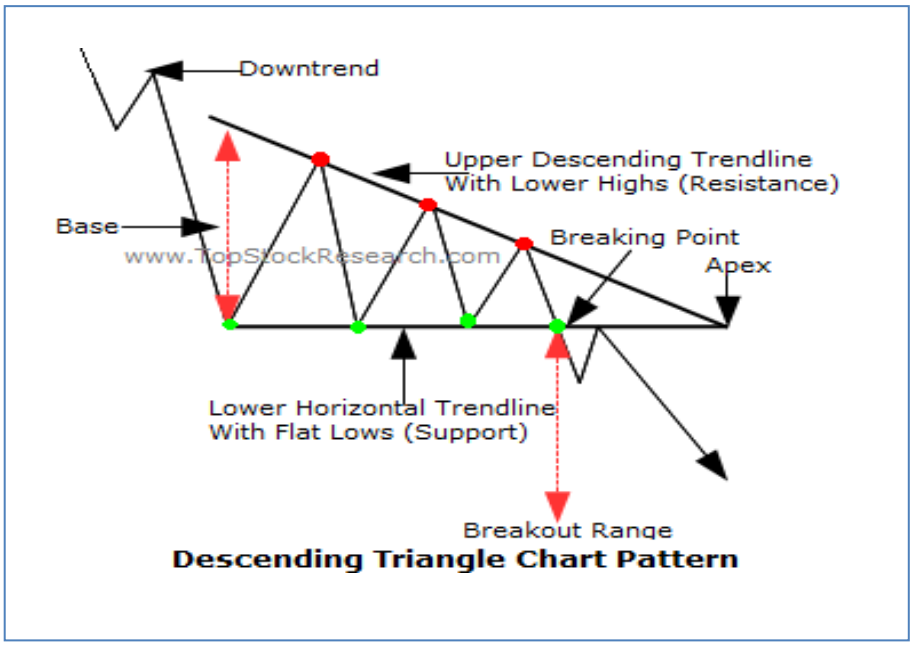
Triangles are known as continuation patterns, meaning the trend stalls out to gather steam before the next breakout or breakdown. They are named triangles as the upper and lower trend line eventually meet to form a tip and connecting the starting points of both trend lines completes a triangle shape. The support trend line continues to close the channel until the resistance price level breaks on heavy volume to resume the prior trend again. There are three types of triangle patterns.

Ascending Triangles: Ascending triangles are bullish continuation patterns that form when the upper trend line is flat or horizontal while the lower trend line continues to rise diagonally. This indicates the uptrend has stalled while the support line representing buyers continues to rise, thereby closing the distance between the lower and upper trend line. Eventually the lower trend line closes in the gap enough to cause impatient bidders to come off the fence in a buying spree that surges the price through the upper trend line resistance with heavy volume. This breakout action resumes the next leg on the up trend as prices climb to new highs.



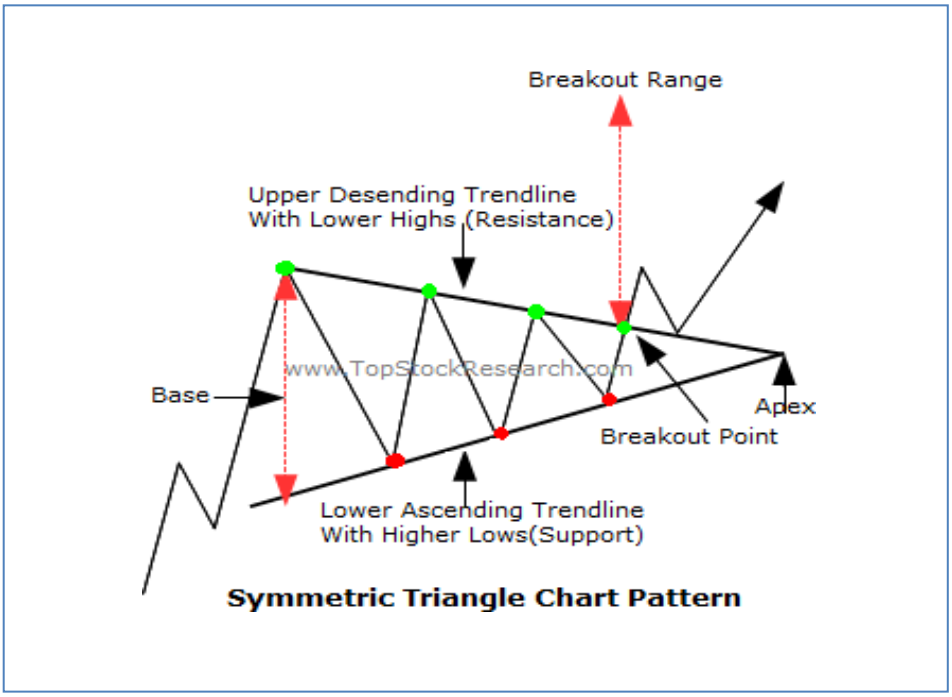
Ascending Triangle Chart Pattern

Descending Triangles: Descending triangles are bearish continuation patterns. They are an inverted version of ascending triangles. The form as a downtrend stalls out. The lower support trend line goes flat or horizontal as the upper trend line continues to fall diagonally closing the gap. The upper trend line represents sellers anxious to unload their position by lowering the ask/offer prices. Eventually sellers get impatient and overwhelm the support trend line by dumping shares. This triggers panic as the price collapses in a breakdown that kick starts the next leg of the downtrend making new lows.



Descending Triangle Chart Pattern

Symmetrical Triangles: Symmetrical triangles are continuation patterns of the prior trend, which may be bullish or bearish. These are indicated with a falling upper trend line and a rising lower trend line. This indicates both the sellers lowering their offers, while buyers are raising their bids. Eventually, one of the trend lines will break to trigger the next leg in the preceding trend. These triangles usually will have three contact points before they trigger the break. This means the lower, upper and lower or upper, lower and upper trend lines tag prior to the break that resumes the earlier trend. The longer the triangle goes without a break as the price gets closer to the pinnacle, the greater the chances of a failure.



Flags and Pennants

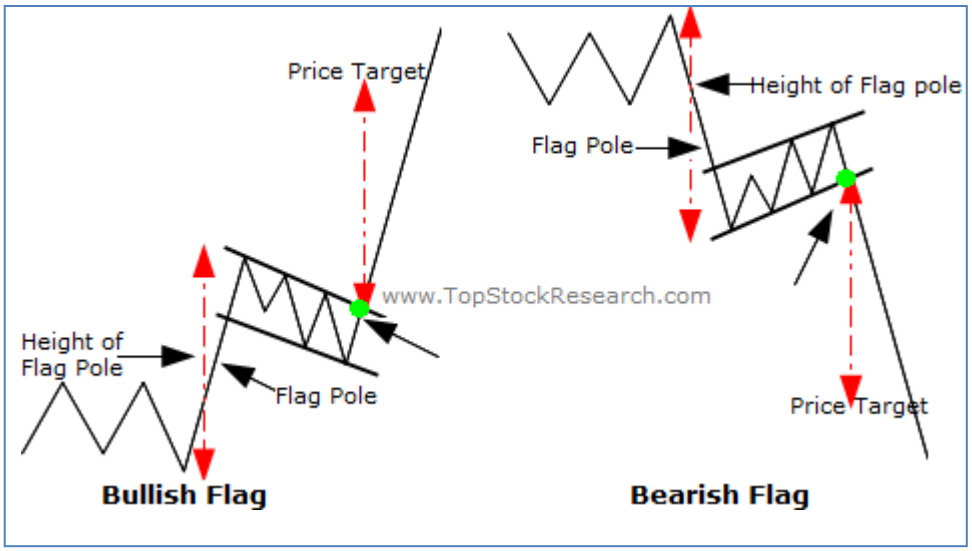
Flag and Pennants are very common and reliable short term congestion patterns formed between trends. Flag and pennant are considered to be strong continuation pattern. Flag and pennant differs from each other in their shapes only, other than that they resemble each other so much in their characteristic that the names flag and pennant are used interchangeably. As the name suggest a flag is a rectangular in shape while a pennant is triangular in shape. Flag/pennant gives the buyer very good opportunity to enter the trending market as they represent very short pauses in trends.

Composition of Flags and Pennants: It consists of two parts:

1. Flag pole: It is the distance between the first support level to the high of the flag/pennant in case of bullish flag/pennant. For bearish flag/pennant it is the distance between the first resistances to the low of flag/pennant.

2. Body: In case of flag the body is a small rectangular pattern that slopes against the trend. The rectangle is formed by two parallel trend lines. For example if the trend was up then it the flag slopes down and vice versa.

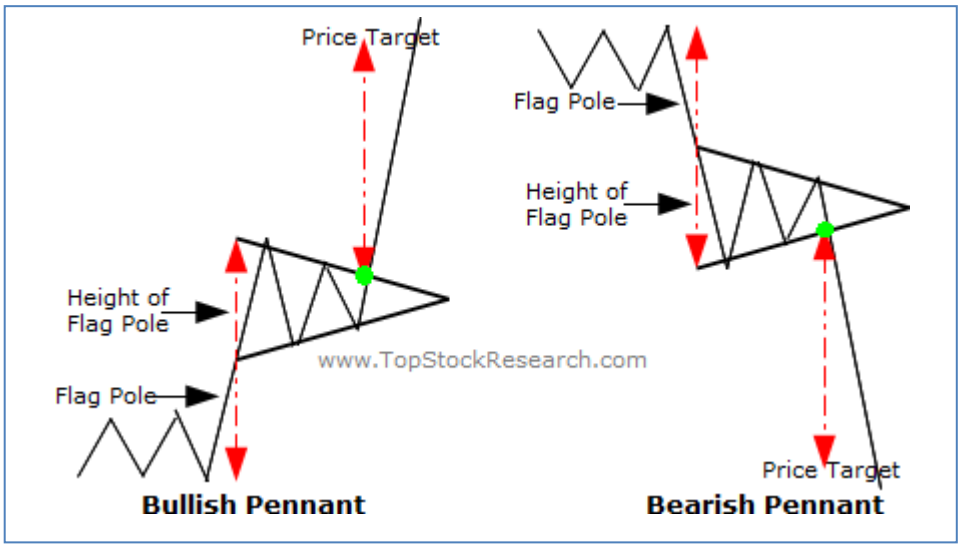
In case of pennants the body is a small symmetrical triangle and it‟s wide near the flagpole and tapering towards its end.



Types of Flags: Depending on the direction of trend they are of two types.

1. Bullish Flag: It is formed in an uptrend. It is a bullish signal confirming that the uptrend may continue further. It is a small pause, where the price is consolidated between the two parallel lines forming a rectangle flag, before the pattern continues.

2. Bearish Flag: It is formed in a downtrend. It is a bearish signal confirming that the downtrend may continue further. It is a small pause, where the price is consolidated between the two parallel lines forming a rectangle flag, before the pattern continues.



Types of Pennants: It is also of two types depending on the direction of the trend.

1. Bullish Pennants: It is formed in an uptrend. It is a bullish signal confirming that the uptrend may continue further. It is a small pause, where the price is consolidated between the two tapering converging trend lines forming a triangle pennant, before the pattern continues.

2. Bearish Pennants: It is formed in a downtrend. It is a bearish signal confirming that the downtrend may continue further. It is a small pause, where the price is consolidated between the two tapering converging trend lines forming a triangle pennant, before the pattern continues.

Important Characteristics of Flag and Pennant: Flag/pennant pattern is considered reliable only when they have following characteristics:

1. Prior Trend: Flag/pennant is considered as a continuation pattern only, when there is prior trend before the formation of flag/pennant.

2. Duration: Flag and pennant are considered as a short term continuation pattern. Flag/pennant pattern last form 1 to 12 weeks however if the pattern is longer than the above mentioned period it is considered as rectangle or channel pattern in case of flag. And in case of pennant pattern more than 12 weeks is considered as symmetrical triangle and it will no longer follow pennant characteristic. Ideally formed flag/pennant pattern are 1-4 weeks old.

3. Breakout: It is very important for the confirmation of this pattern. A breakout is supported by huge volumes. Breakout is the confirmation of this pattern the previous trend has resumed.

4. Volume: Volume plays a key role in confirming a number of chart patterns same applies here also. As flag/pennant formation develops there is decrease in volume activity while there is increase in volume as the pattern gives breakout.

5. Price Target: One can roughly place a price target after a breakout, and it should be the height of the flagpole, however other indicators have to consider as well like MACD, Relative Strength Indicator (RSI), etc.

FUNDAMENTAL VS TECHNICAL ANALYSIS

BASIS FOR COMPARISON	FUNDAMENTAL ANALYSIS	TECHNICAL ANALYSIS
Meaning	Fundamental Analysis is a practice of analysing securities by determining the intrinsic value of the stock.	Technical analysis is a method of determining the future price of the stock using charts to identify the patterns and trends.
Relevant for	Long term investments	Short term investments
Function	Investing	Trading

BASIS FOR COMPARISON	FUNDAMENTAL ANALYSIS	TECHNICAL ANALYSIS
Objective	To identify the intrinsic value of the stock.	To identify the right time to enter or exit the market.
Decision making	Decisions are based on the information available and statistic evaluated.	Decisions are based on market trends and prices of stock.
Focuses on	Both Past and Present data.	Past data only.
Form of data	Economic reports, news events and industry statistics.	Chart Analysis
Future prices	Predicted on the basis of past and present performance and profitability of the company.	Predicted on the basis of charts and indicators.
Type of trader	Long term position trader.	Swing trader and short term day trader.

PORTFOLIO PERFORMANCE EVALUATION

The portfolio performance evaluation primarily refers to the determination of how a particular investment portfolio has performed relative to some comparison benchmark. The evaluation can indicate the extent to which the portfolio has outperformed or under-performed, or whether it has performed at par with the benchmark.

The evaluation of portfolio performance is important for several reasons. First, the investor, whose funds have been invested in the portfolio, needs to know the relative performance of the portfolio. The performance review must generate and provide information that will help the investor to assess any need for rebalancing of his investments. Second, the management of the portfolio needs this information to evaluate the performance of the manager of the portfolio and to determine the manager‟s compensation, if that is tied to the portfolio performance. The performance evaluation methods generally fall into two categories, namely conventional and risk-adjusted methods.

Benchmark Comparison:

The most straightforward conventional method involves comparison of the performance of an investment portfolio against a broader market index. The most widely used market index in the United States is the S&P 500 index, which measures the price movements of 500 U.S. stocks compiled by the Standard & Poor‟s Corporation. If the return on the portfolio exceeds that of the benchmark index, measured during identical time periods, then the portfolio is said to have beaten the benchmark index. While this type of comparison with a passive index is very common in the investment world, it creates a particular problem. The level of risk of the investment portfolio may not be the same as that of the benchmark index portfolio. Higher risk should lead to commensurately higher returns in the long term. This means if the investment portfolio has performed better than the benchmark portfolio, it may be due to the investment portfolio being more risky than the benchmark portfolio. Therefore, a simple comparison of the return on an investment portfolio with that of a benchmark portfolio may not produce valid results.

Style Comparison:

A second conventional method of performance evaluation called “style-comparison” involves comparison of return of a portfolio with that having a similar investment style. While there are many investment styles, one commonly used approach classifies investment styles as value versus growth. The” value style” portfolios invest in companies that are considered undervalued on the basis of yardsticks such as price-to-earnings and price-to-topic value multiples. The”growth style” portfolios invest in companies whose revenue and earnings are expected to grow faster than those of the average company.

In order to evaluate the performance of a value-oriented portfolio, one would compare the return on such a portfolio with that of a benchmark portfolio that has value-style. Similarly, a growth-style portfolio is compared with a growth-style benchmark index. This method also suffers from the fact that while the style of the two portfolios that are compared may look similar, the risks of the two portfolios may be different. Also, the benchmarks chosen may not be truly comparable in terms of the style since there can be many important ways in which two similar style-oriented funds vary.

Risk-adjusted Methods:

The risk-adjusted methods make adjustments to returns in order to take account of the differences in risk levels between the managed portfolio and the benchmark portfolio. While there are many such methods, the most notables are the Sharpe ratio (S), Treynor ratio (T), Jensen‟s alpha.

Sharpe Ratio:

The Sharpe ratio computes the risk premium of the investment portfolio per unit of total risk of the portfolio. The risk premium, also known as excess return, is the return of the portfolio less the risk-free rate of interest as measured by the yield of a Treasury security. The total risk is the standard deviation of returns of the portfolio. The numerator captures the reward for investing in a risky portfolio of assets in excess of the risk-free rate of interest while the denominator is the variability of returns of the portfolio. In this sense, the Sharpe measure is also called the" reward-to-variability" ratio. Equation (34.1) gives the Sharpe ratio:

$$S = \frac{r_p - r_f}{\sigma_p} \qquad (34.1)$$

Where S is the Sharpe ratio, rp the return of the portfolio, rf the risk-free rate, and sp the standard deviation of returns of the portfolio.

The Sharpe ratio for an investment portfolio can be compared with the same for a benchmark portfolio such as the overall market portfolio. Suppose that a managed portfolio earned a return of 20 per cent over a certain time period with a standard deviation of 32 per cent. Also assume that during the same period the Treasury bill rate was 4 per cent, and the overall stock market earned a return of 13 per cent with a standard deviation of 20 per cent. The managed portfolio‟s risk premium is (20 per cent — 4 per cent) = 16 per cent, while its Sharpe ratio, S, is equal to 16 per cent/32 per cent = 0.50. The market portfolio‟s excess return is (13 per cent — 4 per cent) = 9 per cent, while its S equals 9 per cent/20 per cent = 0.45. Accordingly, for each unit of standard deviation, the managed portfolio earned a risk premium of 0.50 per cent, which is greater than that of the market portfolio of 0.45 per cent, suggesting that the managed portfolio outperformed the market after adjusting for total risk.

Treynor Ratio:

The Treynor ratiocomputes the risk premium per unit of systematic risk. The risk premium is defined as in the Sharpe measure. The difference in this method is in that it uses the systematic risk of the portfolio as the risk parameter. The systematic risk is that part of the total risk of an asset which cannot be eliminated through diversification. It is measured by the parameter known as „beta‟ that represents the slope of the regression of the returns of the managed portfolio on the returns to the market portfolio. The Treynor ratio is given by the following equation:

$$T = \frac{r_p - r_f}{\beta_p} \qquad (34.2)$$

Where, T is the Treynor ratio, rp the return of the portfolio, rf the risk-free rate, and bp the beta of the portfolio.

Suppose that the beta of the managed portfolio in the previous example is 1.5. By definition, the beta of the market portfolio is equal to 1.0. This means the managed portfolio has one-and-half times more systematic risk than the market portfolio. We would expect the managed portfolio to earn more than the market because of its higher risk. In fact, in the above example, the portfolio earned an excess return of 16 percent whereas the market earned only 9 percent. These two numbers alone do not tell anything about the relative performance of the portfolio since the portfolio and the market have different levels of market risk. In this instance, the Treynor ratio for the managed portfolio equals (20 percent — 4 percent)/1.5 = 10.67, while that for the market equals (13 percent — 4 percent)/1.00 = 9.00. Thus, after adjusting for systematic risk, the managed portfolio earned an excess return of 10.67 percent for each unit of beta while the market portfolio earned an excess return of 9.00 percent for each unit of beta. Thus, the managed portfolio outperformed the market portfolio after adjusting for systematic risk

Jensen's Alpha:

The alpha represents the amount by which the average return of the portfolio deviates from the expected return given by the CAPM. The CAPM specifies the expected return in terms of the risk-free rate, systematic risk, and the market risk premium. The alpha can be greater than, less than, or equal to zero. An alpha greater than zero suggests that the portfolio earned a rate of return in excess of the expected return of the portfolio. Jensen"s alpha is given by.

$$\alpha = r_p - [r_f \mid \beta_p(r_m - r_f)] \qquad (34.3)$$

Where a is the Jensen"s alpha, rp the return of the portfolio, rm the return of the market portfolio, rf the risk-free rate, and bp the beta of the portfolio.

Using the same set of numbers from the previous example, the alpha of the managed portfolio and the market portfolio can be computed as follows. The expected return of the managed portfolio is 4 percent + 1.5 (13 percent — 4 percent) = 17.5 percent. Therefore, the alpha of the managed portfolio is equal to the actual return less the expected return, which is 20 percent — 17.5 percent = 2.5 percent. Since we are measuring the expected return as a function of the beta and the market risk premium, the alpha for the market is always zero. Thus, the managed portfolio has earned a 2.5 percent return above that must be earned given its market risk. In short, the portfolio has a positive alpha, suggesting superior performance.

PORTFOLIO MANAGEMENT STRATEGIES

Portfolio Management Strategies refer to the approaches that are applied for the efficient portfolio management in order to generate the highest possible returns at lowest possible risks. There are two basic approaches for portfolio management including Active Portfolio Management Strategy and Passive Portfolio Management Strategy.

ACTIVE PORTFOLIO MANAGEMENT STRATEGY

The Active portfolio management relies on the fact that particular style of analysis or management can generate returns that can beat the market. It involves higher than average costs and it stresses on taking advantage of market inefficiencies. It is implemented by the advices of analysts and managers who analyze and evaluate market for the presence of inefficiencies. A lot of portfolio management strategies fit under the "Active Management" umbrella. With actively managed investment portfolios, the person who's managing them will do what they can to beat the market. This means they will typically...

- Be very "hands on" with their approach. Active managers will typically spend quite a lot of time analyzing stocks, buying them, selling them, and keeping up with stock market news. This is not one of the strategies lazy investors will want to try.
- Use quantitative analysis to figure out their moves. Math is the name of the game with Active Management. They will often spend tons of time just trying to learn ratios and values before they drop a dollar on stock.
- Diversify their portfolios. Lowering risk means that diversification is a huge portion of your management strategy.

The active management approach of the portfolio management involves the following styles of the stock selection.

Top-down Approach: In this approach managers observe the market as a whole and decide about the industries and sectors that are expected to perform well in the on-going economic cycle. After the decision is made on the sectors, the specific stocks are selected on the basis of companies that are expected to perform well in that particular sector.
Bottom-up: In this approach, the market conditions and expected trends are ignored and the evaluations of the companies are based on the strength of their product pipeline, financial statements, or any other criteria. It stresses the fact that strong companies perform well irrespective of the prevailing market or economic conditions.

PASSIVE PORTFOLIO MANAGEMENT STRATEGY

Passive asset management relies on the fact that markets are efficient and it is not possible to beat the market returns regularly over time and best returns are obtained from the low cost

investments kept for the long term. Most Passive Management strategies will mean that you will...

- Invest heavily in index funds and other similar funds. Index funds and other multi-stock funds are a way of reducing risk through diversification while keeping pace with the market's growth.
- Probably just let fund managers do the work. You won't be very active in Passive Management. Fund managers will do most of the work for you, and will manage all the turnaround in your portfolio for you.
- Work on the very long term rather than short term. If you want to day trade, this is not going to be one of the better portfolio management strategies you'll want to look into.
- Avoid checking your portfolio very frequently. This is a good option for people who want to put in minimum effort when it comes to maintaining investments.

The passive management approach of the portfolio management involves the following styles of the stock selection.

Efficient Market Theory: This theory relies on the fact that the information that affects the markets is immediately available and processed by all investors. Thus, such information is always considered in evaluation of the market prices. The portfolio managers who follows this theory, firmly believes that market averages cannot be beaten consistently.

Indexing: According to this theory, the index funds are used for taking the advantages of efficient market theory and for creating a portfolio that impersonate a specific index. The index funds can offer benefits over the actively managed funds because they have lower than average expense ratios and transaction costs.

Apart from Active and Passive Portfolio Management Strategies, there are three more kinds of portfolios including Patient Portfolio, Aggressive Portfolio and Conservative Portfolio.

Patient Portfolio: This type of portfolio involves making investments in well-known stocks. The investors buy and hold stocks for longer periods. In this portfolio, the majority of the stocks represent companies that have classic growth and those expected to generate higher earnings on a regular basis irrespective of financial conditions.

Aggressive Portfolio: This type of portfolio involves making investments in “expensive stocks” that provide good returns and big rewards along with carrying big risks. This portfolio is a collection of stocks of companies of different sizes that are rapidly growing and expected to generate rapid annual earnings growth over the next few years. High growth, risk-taking, and making the most of the ever-changing market are what Aggressive Management is all about. Aggressive portfolio management strategies are all about taking risk and maximizing profits, realizing you might incur extra losses as you chase your goal. People who choose an aggressive strategy will typically...

- Look for high volatility stocks, or riskier alternative investments. A person who's aggressive will not typically shy away from the most dangerous investments you can make.
- See loss as inevitable from time to time. This is the opposite from Defensive Management, simply because you embrace loss and hope that it'll average out.
- Research investments heavily before making a decision. Just because you're willing to take a risk doesn't mean that you'll do it willy-nilly. The phrase "look before you leap" still applies.
- Actively use risk management strategies to help curb losses. Just because loss is inevitable doesn't mean it can't be reduced. Successful aggressive investors tend to realize this and work to reduce loss via a wide range of methods.

Conservative/Defensive Portfolio: This type of portfolio involves the collection of stocks after carefully observing the market returns, earnings growth and consistent dividend history. Conservative Portfolio Management is one of the best portfolio management strategies for people who feel like a recession or bear market is right on the horizon. This is an ultra-conservative kind of portfolio that's more about loss prevention than it is about gaining profit. A lot of investors who choose this strategy do so temporarily, often right before a recession starts. If you have a defensive portfolio, then you will probably...

- Invest primarily in government bonds, low volatility stocks, CD ladders, as well as other investments that are notoriously safe. High risk is something you just won't see in a defensive portfolio
- Won't see very high returns, compared to a more aggressive method. It's not about getting high returns with this type of portfolio. It's about preventing loss during a bear market.
- Will focus on stocks that produce necessities, rather than luxuries. During times of hardship, necessities end up being the stocks that retain the most value—not luxuries.