CHAPTER 1

"INTRODUCTION"
Introduction

The essential quality of an investment is that it involves ‘waiting’ for a reward. It involves the commitment of resources, which have been saved or put away from current consumption in the hope that some benefits will accrue in future. The term ‘investment’ does not appear to be as simple as it has been defined. Investment has been further categorized by financial experts and economists. It has also often been confused with the term speculation.

Process of exchanging income for an asset that is expected to produce earnings at a later time. An investor refrains from consumption in the present in hopes of a greater return in the future. (Britanica Encyclopedia).

The placement of a particular sum of money in business ventures, real estate, or securities of a permanent nature so that it will produce an income (Legal encyclopedia).

Investment may be influenced by rates of interest, with the rate of investment rising as interest rates fall, but other factors more difficult to measure may also be important — for example, the business community’s expectations about future demand and profit, technical changes in production methods, and expected relative costs of labor and capital. Investment cannot occur without saving, which provides funding. Because investment increases an economy’s capacity to produce, it is a factor contributing to economic growth.
**Investment** or **investing** is a term with several closely related meanings in business management, finance and economics, related to saving or deferring consumption. An asset is usually purchased, or equivalently a deposit is made in a bank, in hopes of getting a future return or interest from it. Literally, the word means the "action of putting something in to somewhere else"

In many instances the term **saving** and **investment** are used interchangeably which confuses this distinction. For example many deposit accounts are labeled as **investment accounts** by banks for marketing purposes. To help establish whether an asset is saving(s) or an investment you should consider where your money is invested. If the answer is cash then it is **savings**, if it is a type of asset which can fluctuate in value then it is **investment**.

**Various types of investment instruments**: Investment may be of the following type: Bonds, commercial paper, Post office investments, Stocks, Mutual Funds, money market investment, Derivative's investment, precious metals like gold and silver, foreign currencies and real estate.

**Financial and Economic meaning of Investment**

Investment is the allocation of monetary resources to assets that are expected to yield some gain or positive return over a given period of time. These assets range from safe investments to risky investments. Investments in this form are also called ‘Financial Investments’.
From the point of view of people who invest their funds, they are the suppliers of 'capital' and in their view, investment is a commitment of a person's funds to derive future income in the form of interest, dividends, rent, premiums, pension benefits or the appreciation of the value of their principal capital. To the financial investor, it is not important whether money is invested for a productive use or for the purchase of second-hand instruments such as existing shares and stocks listed on the stock exchanges. Most investments are considered to be transfers of financial assets from one person to another.

The nature of investment in the financial sense differs from its use in the economic sense. To the economist, 'Investment' means the net additions to the economy's capital stock which consists of goods and services that are used in the production of other goods and services. In this context, the term investment, therefore, implies the formation of new and productive capital in the form of new construction, new producers' durable equipment such as plant and equipment. Inventories and human capital are included in the economists' definitions or investment.

The financial and economic meaning of investments are related to each other because investments is a part of the savings of individual which flow in to the capital market either directly or through institutions, divided in 'new' and second-hand capital financing. Investors as 'suppliers' and investors as 'users' of long-term funds find a meeting place in the market.

**Investment**

Use of capital to create more money, either through income-producing vehicles or through more risk-oriented ventures
designed to result in capital gains. *Investment* can refer to a financial investment (where an investor puts money into a vehicle) or to an investment of effort and time on the part of an individual who wants to reap profits from the success of his labor. Investment connotes the idea that safety of principal is important. Speculation, on the other hand, is far riskier.

**Investment and speculation:** Traditionally, investment is distinguished from speculation in three ways which are based on the factors of:

a) Risk;
b) Capital gains and
c) Time period

a) **Risk:** The word 'Risk' has a definite financial meaning. It refers to the possibility of incurring a loss in a financial transaction. In a broad sense, Investment is considered to involve limited risk and is confined to those values where the principle is safe. 'Speculation' is considered as an involvement of funds of high risk. An example may be sited of the stock brokers' lists of securities, which labels and recommend securities separately for investment and speculation purposes. Risk, however, is a matter of degree and no clear-cut lines of demarcation can be drawn between high risk and low risk and sometimes these distinctions are purely arbitrary. No investments are completely risk free. Even if safety of principal and interest are considered, there are certain non-manageable risks, which are beyond the scope of personal power. These risks are a) purchasing power risk—in other words, it is the fall in the real of the interest and the principal and b) the money rate risk or the fall in market value when interest rate rises. These risks affect both the
speculator and the investor. High risk and low risk are therefore, general indicators to help an understanding between the terms investment and speculation.

b) **Capital gains:** Another distinction between investment and speculation emphasizes that if the motive is primarily to achieve profits through price changes, it is speculation. If purchase of securities if preceded by proper investigation and analysis and review to receive a stable return over a period of time, it is termed as investment. Thus, buying low and selling high, making a large capital gains is associated with speculation.

c) **Time:** The third difference is the consideration of the time period. A longer-term fund allocation is termed as investment. A short-term holding is associated with trading for the 'quick turn' and is called speculation.

Analysis of these distinction help to identify the role of investor and speculator. The investor constantly evaluate the worth of a security where as the speculator is interested in market action and price movement. These distinctions also draw out the fact that there is very fine-line between investment and speculation. There are no established rules and laws that identify securities which are permanently for investments. There has to be a constant review of securities to find out whether it is suitable investment. To conclude it, it will be appropriate to say that some financial experts have called investments 'a well grounded and carefully planned speculations', or good investment is a successful speculation. Therefore, investment and speculation are a planning of existing risks. If artificial and unnecessary risks are created for increased expected returns, it becomes gambling.
**Investment and Gambling:** The difference between investment and gambling is very clear. From the above discussion, it is established that investment is an attempt to carefully plan, evaluate and allocate funds in various investable outlets which offers safety of principal, moderate and continuous return and long-term commitment. Gambling is quite the opposite of investment. If connotes high risk and expectation of high return. It consists of uncertainty and high stakers for thrill and excitement. Typical example of gambling are horse racing, game of cards, lottery etc. Gambling is based on tips, rumours and hunches, it is unplanned known scientific and with out knowledge of the exact nature of the risk. These distinctions between investment, speculation and gambling give us a basic idea of their nature, purpose and role.

**Why investments are important?**

Investments are both important and useful in the context of present day conditions. Some factors that have made investment decisions increasingly important are:

**a) Longer life expectancy or planning for retirement:** Investment decisions have become significant as most people in India retire between the ages of 55 and 60. Also the trend shows the longer life expectancy. The earnings from employment should, therefore be calculated in such a manner that a portion should be put away as savings. Savings by themselves do not increase wealth; these must be invested in such a way that the principal and income will be adequate for a greater no. of retirement years.
The importance of investment decisions is further enhanced by the fact that there is an increasing number of women working in organizations. These women will be responsible for planning their own investments during their working life so that after retirement, they are able to have a stable income.

Increase in the working population, proper planning for life span and longevity have ensured the need for balanced investments.

b) Increasing rates of Taxation: Taxation is one of crucial factors in any country that introduces an element of compulsion in a person's savings. There are various forms of savings outlets in our country in the form of investments which help in bringing down the tax level by offering deductions in personal income.

c) Interest rates: Another aspect which is necessary for a sound investment plan is the level of interest rates. Interest rates between one investment and another. These may vary between risky and safe investments; they may also differ due to different benefit schemes offered by the investments. These aspects must be considered before actually allocating any amount. A high rate of interest may not the only factor favoring the outlet for investment. The investor has to include in his portfolio several kinds of investments. Stability of interest is as important as receiving a high rate of interest.

d) Inflation: Inflation has become a continuous problem since the last decade. In these years of rising prices, several problems are associated coupled with a falling standard of living. Before funds are invested, erosion of the resources will have to be carefully considered in order to make the right choice of investments. The
investor will try and search and outlet which will give him a high rate of return in the form of interest to cover any decrease due to inflation. He will also have to judge whether the interest or return will be continuous or there is a likelihood of irregularity. Coupled with high rates of interest, he will have to find an outlet which will ensure safety of principal. Besides high rate of interest, safety of principal, an investor also has to always bear in mind the taxation angle. The interest earned through investment should not unduly increase his taxation burden. Otherwise, the benefit derived from interest will be offset by an increase in taxation.

e) Income: Another reason why investment decisions have assumed importance is the general increase in employment opportunities in India. After independence, with the stages of development in the country, a number of new organizations and services were formed. The employment opportunities gave rise to both male and female working force. More incomes and more avenues of investment have led to the ability and willingness of working people to save and invest their funds.

f) Investment channels: The growth and development of the country leading to greater economic activity has led to the introduction of a vast array of investment outlets. Apart from putting aside savings in savings banks where interest is low, investors have the choice of a variety of instruments. The question to reason out is which is the most suitable channel? Which media will give a balanced growth and stability of return? The investors in his choice of investment have to try and achieve a proper mix between high rate of return and stability of return to reap the benefits of both. Some of the instruments available are corporate stock, provident fund, life insurance, fixed deposits in the corporate sector, unit trust
schemes and so on.

**What is Investment Decision?**

In stock market parlance, investment decision refers to making a decision regarding the buy and sell orders. These decisions are influenced by availability of money and flow of information. What to buy and sell will also depend on the fair value of a share and the extent of over valuation and under valuation and more important expectation regarding them. For making such decisions the common investors may have to depend more upon a study of fundamentals rather than technicals, although technical are also important. If investment is for short term and speculation, technicals are more important

**Investment Objectives**

1. Income
2. Appreciation of capital
3. Safety
4. Liquidity
5. Hedge against Inflation
6. A method of tax planning
7. Speculation
8. Arbitrage
Factors Affecting Investment Decisions

- **Introduction**
- **Risk**
- **Return**
- **Liquidity**
- **Taxation**
- **Inflation**
- **Term**
- **Timing**

**Introduction**

In order to give good advice and to make informed investment decisions it is important that the factors affecting investment decisions are properly understood. In many cases where investment advisers are criticized for the advice they have given, the cause of the unhappiness on the part of the investor has been that the recommended medium of investment was not suited to the investor and/or his circumstances. Whilst there are and always will be rank bad investments. Most investor dissatisfaction is caused by the selection of unsuitable investments.

The factors affecting investment decisions must be viewed in the light of the investor’s requirements and circumstances. Ignoring this reality and considering the factors in a vacuum will have disastrous consequences.

**Risk**

Of all the factors affecting investment decisions, risk is probably the most misunderstood. There are many components to risk which, if properly analysed, would form a dissertation suitable for
a doctoral thesis. In its simplest form risk to an investor is the chance that he will end up losing some or all of the money invested. The more risk an investor is prepared to assume, the greater the potential return.

The amount of risk an investor is prepared to take will vary from one person to another. Typically, investors will be more risk averse as regards their retirement capital as opposed to discretionary investments. Similarly, an investor's risk profile will change as his life circumstances change. An older investor approaching retirement will be less willing to assume risk than will a young investor who has plenty of time on his side.

The risk an investor is prepared to assume is very often dictated by the investment return that an investor needs to achieve. An investor who wishes to accumulate capital to pay for his child's education may be forced into a situation where he has to achieve a certain rate of return within the time remaining; otherwise his fund will not be sufficient to meet its objective. The higher the return required, the higher the risk indicated for that investment.

It is obvious that risk and return go hand in hand. For this reason, an investment return offered by a certain investment that is in excess of the market return for that particular type of investment will be a good indicator that the risk involved is higher.

The term of an investment also has a significant effect on risk. For an investor who wishes to invest only for one year, choosing unit trusts as the investment medium could be regarded as high risk. A fall in the market during that period could result in the investor loosing his money. A deposit with a reputable financial institution
would seem to be more suitable and have a lower risk. If however, the investor wished to be invested for a term of ten years, the unit trust would not be a high-risk investment. On the contrary, the deposit could be regarded as high risk simply because the combined effects of inflation and taxation could result in the investor loosing money in real terms.

The most important consideration involving a decision about risk is that the investment is suited to the risk profile of the investor.

**Return**

The higher the potential return offered by an investment, the greater the risk involved. This direct relationship between risk and return is explored in the discussion on risk.

The return offered by an investment can take the form of a flow of income or by the growth in the capital invested or both. A deposit with a bank is an example of an investment offering a return in the form of a flow of income, in this case, interest. A unit trust or fixed properties are examples of investments that offer both. The nature of the return desired by the investor will be a strong indicator in the investment decision.

**Liquidity**

The liquidity of an investment is all about how quickly an investor can convert his investment into cash should the need arise. A unit trust is very liquid because the Management Company guarantees to repurchase units from an investor. Listed shares would be less liquid because the investor would only be able to sell if there is a buyer prepared to buy at that price. The shares in a private
company are not at all liquid because the seller will usually only be able to sell to one of the other shareholders. Only if they are not prepared to buy his shares can he find an external buyer. However there is no mechanism for the introduction of buyers and sellers as is provided by a stock exchange.

Using the investment as collateral for a loan can provide liquidity. This means that even though it may not be possible to realise the investment at short notice, it is possible to cede or pledge the investment to secure a loan.

A consideration allied to liquidity is the cost of termination. What is the cost structure of the investment? What will be the costs associated with terminating the investment within a certain period? Liquidity is one thing. Liquidity at a price is another altogether.

**Taxation**

The tax consequences of an investment are fundamental to any investment decision. The return desired by an investor is usually the return after tax. The effect of taxation on the investment return will be affected by the taxpayers' tax position, marginal rate of tax etc. It could be that the investor is a tax-exempt body. It will also be affected by the identity of the investor. In other words is the investor a natural person, a trust, or a legal person such as a company. In addition the nature of the return will also have a significant influence. To a young investor wishing to maximise capital growth, an interest bearing investment may not be suitable because the interest will be taxed in his hands thereby reducing the after-tax return considerably.
The taxation of the proceeds of an investment will often be determined by the intention of the investor. If an investor invests with the intention of making a profit, the gain realised by the investor could be regarded as income and be taxed accordingly. Consequently two investments of identical nature could be taxed differently in the hands of two investors simply because the one had a different state of mind regarding that investment.

Very often an investor's intention changes during the course of an investment. Such a change of intention could be fatal in subjecting the realised gain to income tax.

**Inflation**

Just as the bottom line for most investors is the after-tax return of an investment, so is the real return over time. By real return is meant the return after the effects of inflation have been taken into account. If an investor is not earning a positive real return, he is in fact becoming poorer by investing. In this context it is often useful to regard risk as the converse of real return. In other words, if we accept that fundamentally risk is about the probability of an investor loosing money, this should be qualified by adding the words "in real terms". Viewed in this light, low risk investments such as fixed deposits suddenly become high-risk investments after taking tax and inflation into account.

**Term**

The term of an investment has a dramatic effect on the investment decision. An investor wishing to invest only for a few months
should not enter the equity market unless he is prepared to accept a very high risk. The risk associated with the equity market decreases as the term of the proposed investment increases.

**Timing**

Deciding when to invest is probably the most difficult of all investment decisions. It is not surprising then to realise that it is the one decision that investors get wrong more often than not. The timing decision is made less critical as the term of the investment increases.

**The Investment Process-Stages in Investment**

The investment process is generally described in 4 stages. These stages are investment policy, Investment Analysis, Valuation of securities and portfolio construction.

**Investment policy:** The first stage determines and involves personal financial affairs and objectives before making investments. It may also be called preparation of the Investment policy stage. The investor has to see that he should be able to create an emergency fund, an element of liquidity and quick convertibility of securities into cash. This stage may, therefore, be considered appropriate for identifying investment efforts and considering the various features of investments.

**Investment Analysis:** When an individual has arranged a logical order of the types of investments that he requires on his portfolio, the next step is to analyse the securities available for investments.
He must make a comparative analysis of the type of industry, kind of security and fixed vs. variable securities. The primary concern at this stage would be to form beliefs regarding future behaviour or prices and stocks, the expected return and associated risk.

**Valuation of securities:** The third step perhaps the most important consideration of the valuation of the investments. Investment value, in general, is taken to be present worth to the owners of future benefits from investments. The investor has to bear in mind the value of these investments. Appropriate sets of weights have to be applied with the use forecasted benefits to estimate the value of the investment assets. Comparison of the value with the current market price of the asset allows a determination of the relative attractiveness of the asset. Each asset must be valued on its individual merit. Finally the portfolio should be constructed.

**Portfolio construction:** Portfolio construction requires the knowledge of different aspects of securities. These are briefly recapitulated here, consisting of safety and growth of principal, liquidity of assets after taking in to account the stage involving investment timing, selection of investment, and allocation of savings to different investment and feedback of portfolio. While evaluating securities, the investor should realize that investments are made under conditions of uncertainties. There can not be a magic formula which will always work. The investor should be concerned with the concepts and applications that will satisfy his investment objectives and constantly evaluate the performance of his investments. If need be, the investor may consider switching over to alternate proposals.
Common Mistakes while making investments.

It may be helpful to be aware of some common mistakes the capital market players make when approaching investment design while preparing their overall financial planning. These common mistakes emerge because they -

1. Do not set the measurable financial goals;
2. Make a financial decision without understanding its effect on other financial issues.
3. Confuse financial planning with investing.
4. Neglect to re-evaluate their financial plan periodically.
5. Think that financial planning is only for the wealthy.
6. Think that financial planning is for when they get older.
7. Think that financial planning is the same as retirement planning.
8. Wait until a money crisis to begin financial planning.
9. Expect unrealistic returns on investments.
10. Think that using a financial planner means losing control.
11. Believe that financial planning is primarily tax planning.

Evolution of Indian Stock Market

Indian Stock Market is one of the oldest in Asia. Its history dates back to nearly 200 years ago. The earliest records of security dealings in India are meager and obscure. The East India Company was the dominant institution in those days and business in its loan securities used to be transacted towards the close of the eighteenth century.
By 1830's business on corporate stocks and shares in Bank and Cotton presses took place in Bombay. Though the trading list was broader in 1839, there were only half a dozen brokers recognized by banks and merchants during 1840 and 1850.

The 1850's witnessed a rapid development of commercial enterprise and brokerage business attracted many men into the field and by 1860 the number of brokers increased into 60.

In 1860-61 the American Civil War broke out and cotton supply from United States to Europe was stopped; thus, the 'Share Mania' in India begun. The number of brokers increased to about 200 to 250. However, at the end of the American Civil War, in 1865, a disastrous slump began (for example, Bank of Bombay Share which had touched Rs 2850 could only be sold at Rs. 87).

At the end of the American Civil War, the brokers who thrived out of Civil War in 1874, found a place in a street (now appropriately called as Dalal Street) where they would conveniently assemble and transact business. In 1887, they formally established in Bombay, the "Native Share and Stock Brokers' Association" (which is alternatively known as " The Stock Exchange "). In 1895, the Stock Exchange acquired a premise in the same street and it was inaugurated in 1899. Thus, the Stock Exchange at Bombay was consolidated.

**Other leading cities in stock market operations**

Ahmedabad gained importance next to Bombay with respect to cotton textile industry. After 1880, many mills originated from Ahmedabad and rapidly forged ahead. As new mills were floated, the need for a Stock Exchange at Ahmedabad was realised and in
1894 the brokers formed "The Ahmedabad Share and Stock Brokers' Association".

What the cotton textile industry was to Bombay and Ahmedabad, the jute industry was to Calcutta. Also tea and coal industries were the other major industrial groups in Calcutta. After the Share Mania in 1861-65, in the 1870's there was a sharp boom in jute shares, which was followed by a boom in tea shares in the 1880's and 1890's; and a coal boom between 1904 and 1908. On June 1908, some leading brokers formed "The Calcutta Stock Exchange Association".

In the beginning of the twentieth century, the industrial revolution was on the way in India with the Swadeshi Movement; and with the inauguration of the Tata Iron and Steel Company Limited in 1907, an important stage in industrial advancement under Indian enterprise was reached.

Indian cotton and jute textiles, steel, sugar, paper and flour mills and all companies generally enjoyed phenomenal prosperity, due to the First World War.

In 1920, the then demure city of Madras had the maiden thrill of a stock exchange functioning in its midst, under the name and style of "The Madras Stock Exchange" with 100 members. However, when boom faded, the number of members stood reduced from 100 to 3, by 1923, and so it went out of existence.

In 1935, the stock market activity improved, especially in South India where there was a rapid increase in the number of textile mills and many plantation companies were floated. In 1937, a stock exchange was once again organized in Madras - Madras
Stock Exchange Association (Pvt) Limited. (In 1957 the name was changed to Madras Stock Exchange Limited).

Lahore Stock Exchange was formed in 1934 and it had a brief life. It was merged with the Punjab Stock Exchange Limited, which was incorporated in 1936.

**Indian Stock Exchanges - An Umbrella Growth**

The Second World War broke out in 1939. It gave a sharp boom which was followed by a slump. But, in 1943, the situation changed radically, when India was fully mobilized as a supply base.

On account of the restrictive controls on cotton, bullion, seeds and other commodities, those dealing in them found in the stock market as the only outlet for their activities. They were anxious to join the trade and their number was swelled by numerous others. Many new associations were constituted for the purpose and Stock Exchanges in all parts of the country were floated.

The Uttar Pradesh Stock Exchange Limited (1940), Nagpur Stock Exchange Limited (1940) and Hyderabad Stock Exchange Limited (1944) were incorporated.

In Delhi two stock exchanges - Delhi Stock and Share Brokers' Association Limited and the Delhi Stocks and Shares Exchange Limited - were floated and later in June 1947, amalgamated into the Delhi Stock Exchange Association Limited.

Thus, during early sixties there were eight recognized stock exchanges in India (mentioned above). The number virtually remained unchanged, for nearly two decades. During eighties,

**Trading Pattern of the Indian Stock Market**

Trading in Indian stock exchanges are limited to listed securities of public limited companies. They are broadly divided into two categories, namely, specified securities (forward list) and non-specified securities (cash list). Equity shares of dividend paying, growth-oriented companies with a paid-up capital of atleast Rs.50 million and a market capitalization of atleast Rs.100 million and having more than 20,000 shareholders are, normally, put in the specified group and the balance in non-specified group.

Two types of transactions can be carried out on the Indian stock exchanges: (a) spot delivery transactions "for delivery and payment within the time or on the date stipulated when entering into the contract which shall not be more than 14 days following the date of the contract" : and (b) forward transactions "delivery and payment can be extended by further period of 14 days each so that the
overall period does not exceed 90 days from the date of the contract". The latter is permitted only in the case of specified shares. The brokers who carry over the outstanding pay carry over charges (cantango or backwardation) which are usually determined by the rates of interest prevailing.

A member broker in an Indian stock exchange can act as an agent, buy and sell securities for his clients on a commission basis and also can act as a trader or dealer as a principal, buy and sell securities on his own account and risk, in contrast with the practice prevailing on New York and London Stock Exchanges, where a member can act as a jobber or a broker only.

The nature of trading on Indian Stock Exchanges are that of age old conventional style of face-to-face trading with bids and offers being made by open outcry. However, there is a great amount of effort to modernize the Indian stock exchanges in the very recent times.

**Bombay Stock Exchange**

Bombay Stock Exchange was established in 1875 as voluntary non-profit making association at Mumbai. It is Asia's oldest stock exchange and is a major stock exchange in India. The exchange has mechanism to redress grievances of investors as well as members. It provides informative inputs to the investing public.

**Management:** A governing board comprising of 9 elected directors (one third to retire every year by rotation) an executive Director, three Government nominees, a Reserve Bank of India nominee and five public nominees regulate the working of the exchange. However, as per SEBI orders issued in March 2001, the elected
directors have been restrained from acting and Governing Board presently comprises of only 10 directors. The executive director as the Chief Executive Officer and is responsible for the day administration of the exchange.

**Capital Asset Pricing Model**

The *Capital Asset Pricing Model (CAPM)* is used in finance to determine a theoretically appropriate required rate of return (and thus the price if expected cash flows can be estimated) of an asset, if that asset is to be added to an already well-diversified portfolio, given that asset's non-diversifiable risk. The CAPM formula takes into account the asset's sensitivity to non-diversifiable risk (also known as systematic risk or market risk), in a number often referred to as beta ($\beta$) in the financial industry, as well as the expected return of the market and the expected return of a theoretical risk-free asset.

The model was introduced by Jack Treynor, William Sharpe, John Lintner and Jan Mossin independently, building on the earlier work of Harry Markowitz on diversification and modern portfolio theory. Sharpe received the Nobel Memorial Prize in Economics (jointly with Harry Markowitz and Merton Miller) for this contribution to the field of financial economics.

**Arbitrage pricing theory (APT),** in Finance, is a general theory of asset pricing, that has become influential in the pricing of shares.

APT holds that the expected return of a financial asset can be modeled as a linear function of various macro-economic factors or theoretical market indices, where sensitivity to changes in each factor is represented by a factor-specific beta coefficient. The
model-derived rate of return will then be used to price the asset correctly - the asset price should equal the expected end of period price discounted at the rate implied by model. If the price diverges, arbitrage should bring it back into line.

**Modern portfolio theory (MPT)** proposes how rational investors will use diversification to optimize their portfolios, and how a risky asset should be priced. The basic concepts of the theory are Markowitz diversification, the efficient frontier, capital asset pricing model, the alpha and beta coefficients, the Capital Market Line and the Securities Market Line.

MPT models an asset's return as a random variable, and models a portfolio as a weighted combination of assets; the return of a portfolio is thus the weighted combination of the assets' returns. Moreover, a portfolio's return is a random variable, and consequently has an expected value and a variance. Risk, in this model, is the standard deviation of the portfolio's return.

**A. Understanding Investment Risk**

i. **Risk Avoidance**

Investment planning is almost impossible without a thorough understanding of risk. There is a risk/return trade-off. That is, the greater risk accepted, the greater must be the potential return as reward for committing one's funds to an uncertain outcome. Generally, as the level of risk rises, the rate of return should also rise, and vice versa. Before we discuss risk in detail, we should first explain that risk can be perceived, defined and handled in a multitude of ways. One way to handle risk is to avoid it. Risk
avoidance occurs when one chooses to completely avoid the activity the risk is associated with. In the investment world, avoidance of some risk is deemed to be possible through the act of investing in "risk-free" investments. Short-term maturity United States government bonds are usually equated with a "risk-free" rate of return. Stock market risk can be completely avoided by one choosing to have no exposure to it by not investing in equity securities.

ii. **Risk Transfer**

Another way to handle risk is to transfer the risk. An easy to understand example of risk transfer is the concept of insurance. If one has the risk of becoming severely ill (and unfortunately we all do), then health insurance is advisable. One may choose to purchase a municipal bond that is insured. One may purchase a put option on a stock which allows that person to "put to" or sell to someone their stock at a set price, regardless of how much lower the stock may drop. There are many examples of risk transfer in the area of investing.

iii. **The Risk Averse Investor**

Do investors dislike risk? In economics in general, and investments in particular, the standard assumption is that investors are rational. Rational investors prefer certainty to uncertainty. It is easy to say that investors dislike risk, but more precisely, we should say that investors are risk averse. A risk-averse investor is one who will not assume risk simply for its own sake and will not incur any given level of risk unless there is an expectation of adequate compensation for having done so. Note carefully that it is
not irrational to assume risk, even very large risk, as long as we expect to be compensated for it. In fact, investors cannot reasonably expect to earn larger returns without assuming larger risks.

Investors deal with risk by choosing (implicitly or explicitly) the amount of risk they are willing to incur. Some investors choose to incur high levels of risk with the expectation of high levels of return. Other investors are unwilling to assume much risk, and they should not expect to earn large returns.

We have said that investors would like to maximize their returns. Can we also say that investors, in general, will choose to minimize their risks? No! The reason is that there are costs to minimizing the risk, specifically a lower expected return. Taken to its logical conclusion, the minimization of risk would result in everyone holding risk-free assets such as savings accounts and Treasury bills. Thus, we need to think in terms of the expected return/risk trade-off that results from the direct relationship between the risk and the expected return of an investment.

iv. Influence of Time on Risk

Investors need to think about the time period involved in their investment plans. The objectives being pursued may require a policy statement that speaks to specific planning horizons. In the case of an individual investor this could be a year or two in anticipation of a down payment on a home purchase or a lifetime if planning for retirement. Generally speaking, the longer the time horizon the more risk can be incorporated into the financial planning.
Time has a different effect when analyzing the risk of owning fixed income securities, such as bonds. There is more risk associated with holding a bond long term than short term because of the uncertainty of future inflation and interest rate levels. If one were to "lock in" a rate of 6 percent for a bond that matured in one year, an upward move in inflation or interest rates would have a less adverse effect on the price of that bond than a 6 percent bond that matured in thirty years. That is because the bond could be redeemed in one year and reinvested in a bond with a presumably higher interest rate. The thirty-year bond, however, will continue to pay only 6 percent for the rest of its thirty-year life. More about bond pricing and relationships to interest rates in a future chapter.

Types of Investment Risk

v. **Systematic versus Unsystematic Risk**

Modern investment analysis categorizes the traditional sources of risk causing variability in returns into two general types: those that are pervasive in nature, such as market risk or interest rate risk, and those that are specific to a particular security issue, such as business or financial risk. Therefore, we must consider these two categories of total risk. The following discussion introduces these terms. Dividing total risk into its two components, a general (market) component and a specific (issuer) component, we have systematic risk and nonsystematic risk, which are additive:

\[
\text{Total risk} = \text{General risk} + \text{Specific risk} \\
= \text{Market risk} + \text{Issuer risk} \\
= \text{Systematic risk} + \text{Nonsystematic risk}
\]
**Systematic Risk**

An investor can construct a diversified portfolio and eliminate part of the total risk, the diversifiable or non-market part. What is left is the non-diversifiable portion or the market risk. Variability in a security's total returns that is directly associated with overall movements in the general market or economy is called **systematic (market) risk**.

**Nonsystematic Risk** The variability in a security's total returns not related to overall market variability is called the **nonsystematic (nonmarket) risk**. This risk is unique to a particular security and is associated with such factors as business and financial risk as well as liquidity risk. Although all securities tend to have some nonsystematic risk, it is generally connected with common stocks.

vi. **Market Risk**

The variability in a security's returns resulting from fluctuations in the aggregate market is known as market risk. All securities are exposed to market risk including recessions, wars, structural changes in the economy, tax law changes, even changes in consumer preferences. Market risk is sometimes used synonymously with systematic risk.

vii. **Interest Rate Risk**

The variability in a security's return resulting from changes in the level of interest rates is referred to as interest rate risk. Such
changes generally affect securities inversely; that is, other things being equal, security prices move inversely to interest rates. The reason for this movement is tied up with the valuation of securities. Interest rate risk affects bonds more directly than common stocks and is a major risk faced by all bondholders. As interest rates change, bond prices change in the opposite direction.

viii. **Purchasing Power Risk**

A factor affecting all securities is purchasing power risk also known as inflation risk. This is the chance that the purchasing power of invested dollars will decline. With uncertain inflation, the real (inflation-adjusted) return involves risk even if the nominal return is safe (e.g., a Treasury bond). This risk is related to interest rate risk, since interest rates generally rise as inflation increases, because lenders demand additional inflation premiums to compensate for the loss of purchasing power.

ix. **Regulation Risk**

Some investments can be relatively attractive to other investments because of certain regulations or tax laws that give them an advantage of some kind. Municipal bonds, for example pay interest that is exempt from local, state and federal taxation. As a result of that special tax exemption, municipals can price bonds to yield a lower interest rate since the net after-tax yield may still make them attractive to investors. The risk of a regulatory change that could adversely affect the stature of an investment is a real danger.

x. **Business Risk**
The risk of doing business in a particular industry or environment is called business risk. For example, as one of the largest steel producers, U.S. Steel faces unique problems. Similarly, General Motors faces unique problems as a result of such developments as the global oil situation and Japanese imports.

xi. **Reinvestment Risk**

*It is important to understand that YTM is a promised yield, because investors earn the indicated yield only if the bond is held to maturity and the coupons are reinvested at the calculated YTM (yield to maturity).*

Obviously, no trading can be done for a particular bond if the YTM is to be earned. The investor simply buys and holds. What is not so obvious to many investors, however, is the reinvestment implications of the YTM measure. Because of the importance of the reinvestment rate, we consider it in more detail by analyzing the reinvestment risk.

**Reinvestment Risk** The YTM calculation assumes that the investor reinvests all coupons received from a bond at a rate equal to the computed YTM on that bond, thereby earning interest on interest over the life of the bond at the computed YTM rate. In effect, this calculation assumes that the reinvestment rate is the yield to maturity.

If the investor spends the coupons, or reinvests them at a rate different from the assumed reinvestment rate of 10 percent, the realized yield that will actually be earned at the termination of the investment in the bond will differ from the promised YTM. And, in fact, coupons almost always will be reinvested at rates higher or
lower than the computed YTM, resulting in a realized yield that differs from the promised yield. This gives rise to reinvestment rate risk.

xii. International Risk

International Risk can include both Country risk and Exchange Rate risk.

**Exchange Rate Risk** All investors who invest internationally in today's increasingly global investment arena face the prospect of uncertainty in the returns after they convert the foreign gains back to their own currency. Unlike the past when most U.S. investors ignored international investing alternatives, investors today must recognize and understand exchange rate risk, which can be defined as the variability in returns on securities caused by currency fluctuations.

**Country Risk** Country risk, also referred to as political risk, is an important risk for investors today. With more investors investing internationally, both directly and indirectly, the political, and therefore economic, stability and viability of a country's economy need to be considered. The United States has the lowest country risk, and other countries can be judged on a relative basis using the United States as a benchmark. Examples of countries that needed careful monitoring in the 1990s because of country risk included the former Soviet Union and Yugoslavia, China, Hong Kong, and South Africa.

xiii. Liquidity Risk
Liquidity risk is the risk associated with the particular secondary market in which a security trades. An investment that can be bought or sold quickly and without significant price concession is considered liquid. The more uncertainty about the time element and the price concession, the greater the liquidity risk. A Treasury bill has little or no liquidity risk, whereas a small OTC stock may have substantial liquidity risk.

**Measurement of Risk**

**A) Volatility**

Of all the ways to describe risk, the simplest and possibly most accurate is "the uncertainty of a future outcome". The anticipated return for some future period is known as the **expected return**. The actual return over some past period is known as the **realized return**. The simple fact that dominates investing is that the realized return on an asset with any risk attached to it may be different from what was expected. Volatility may be described as the range of movement (or price fluctuation) from the expected level of return. The more a stock, for example, goes up and down in price, the more volatile that stock is. Because wide price swings create more uncertainty of an eventual outcome, increased volatility can be equated with increased risk. Being able to measure and determine the past volatility of a security is important in that it provides some insight into the riskiness of that security as an investment.

**B) Standard Deviation**
Investors and analysts should be at least somewhat familiar with the study of probability distributions. Since the return an investor will earn from investing is not known, it must be estimated. An investor may expect the TR (total return) on a particular security to be 10 percent for the coming year, but in truth this is only a "point estimate."

**Probability Distributions** To deal with the uncertainty of returns, investors need to think explicitly about a security's distribution of probable TRs. In other words, investors need to keep in mind that, although they may expect a security to return 10 percent, for example, this is only a one-point estimate of the entire range of possibilities. Given that investors must deal with the uncertain future, a number of possible returns can, and will, occur.

In the case of a Treasury bond paying a fixed rate of interest, the interest payment will be made with, 100 percent certainty barring a financial collapse of the economy. The probability of occurrence is 1.0, because no other outcome is possible.

With the possibility of two or more outcomes, which is the norm for common stocks, each possible likely outcome must be considered and a probability of its occurrence assessed. The result of considering these outcomes and their probabilities together is a probability distribution consisting of the specification of the likely returns that may occur and the probabilities associated with these likely returns.

Probabilities represent the likelihood of various outcomes and are typically expressed as a decimal. (Sometimes fractions are used.) The sum of the probabilities of all possible outcomes must be 1.0,
because they must completely describe all the (perceived) likely occurrences.

How are these probabilities and associated outcomes obtained? In the final analysis, investing for some future period involves uncertainty, and therefore subjective estimates. Although past occurrences (frequencies) may be relied on heavily to estimate the probabilities, the past must be modified for any changes expected in the future.

Probability distributions can be either discrete or continuous. With a discrete probability distribution, a probability is assigned to each possible outcome. With a continuous probability distribution an infinite number of possible outcomes exist. The most familiar continuous distribution is the normal distribution depicted by the well-known bell-shaped curve often used in statistics. It is a two-parameter distribution in that the mean and the variance fully describe it.

To describe the single most likely outcome from a particular probability distribution, it is necessary to calculate its expected value. The expected value is the average of all possible return outcomes, where each outcome is weighted by its respective probability of occurrence. For investors, this can be described as the expected return.

We have mentioned that it's important for investors to be able to quantify and measure risk. To calculate the total risk associated with the expected return, the variance or standard deviation is used. This is a measure of the spread or dispersion in the probability distribution; that is, a measurement of the dispersion
of a random variable around its mean. Without going into further
details, just be aware that the larger this dispersion, the larger the
variance or standard deviation. Since variance, volatility and risk
can in this context be used synonymously, remember that the
larger the standard deviation, the more uncertain the outcome.

Calculating a standard deviation using probability distributions
involves making subjective estimates of the probabilities and the
likely returns. However, we cannot avoid such estimates because
future returns are uncertain. The prices of securities are based on
investors' expectations about the future. The relevant standard
deviation in this situation is the ex ante standard deviation and
not the ex post based on realized returns.

Although standard deviations based on realized returns are often
used as proxies for ex ante standard deviations, investors should
be careful to remember that the past cannot always be
extrapolated into the future without modifications. Ex post
standard deviations may be convenient, but they are subject to
errors. One important point about the estimation of standard
deviation is the distinction between individual securities and
portfolios. Standard deviations for well-diversified portfolios are
reasonably steady across time, and therefore historical calculations
may be fairly reliable in projecting the future. Moving from well-
diversified portfolios to individual securities, however, makes
historical calculations much less reliable. Fortunately, the number
one rule of portfolio management is to diversify and hold a portfolio
of securities, and the standard deviations of well-diversified
portfolios may be more stable.
Something very important to remember about standard deviation is that it is a measure of the **total risk** of an asset or a portfolio, including therefore **both systematic and unsystematic risk**. It captures the total variability in the asset's or portfolio's return, whatever the sources of that variability. In summary, the standard deviation of return measures the total risk of one security or the total risk of a portfolio of securities. The historical standard deviation can be calculated for individual securities or portfolios of securities using total returns for some specified period of time. This ex post value is useful in evaluating the total risk for a particular historical period and in estimating the total risk that is expected to prevail over some future period.

The standard deviation, combined with the normal distribution, can provide some useful information about the dispersion or variation in returns. In a normal distribution, the probability that a particular outcome will be above (or below) a specified value can be determined. With one standard deviation on either side of the arithmetic mean of the distribution, 68.3 percent of the outcomes will be encompassed; that is, there is a 68.3 percent probability that the actual outcome will be within one (plus or minus) standard deviation of the arithmetic mean. The probabilities are 95 and 99 percent that the actual outcome will be within two or three standard deviations, respectively, of the arithmetic mean.

**C) Beta**

**Beta** is a measure of the systematic risk of a security that cannot be avoided through diversification. Beta is a relative measure of risk—the risk of an individual stock relative to the
market portfolio of all stocks. If the security's returns move more (less) than the market's returns as the latter changes, the security's returns have more (less) volatility (fluctuations in price) than those of the market. It is important to note that beta measures a security's volatility, or fluctuations in price, relative to a benchmark, the market portfolio of all stocks.

Securities with different slopes have different sensitivities to the returns of the market index. If the slope of this relationship for a particular security is a 45-degree angle, the beta is 1.0. This means that for every one percent change in the market's return, on average this security's returns change 1 percent. The market portfolio has a beta of 1.0. A security with a beta of 1.5, indicates that, on average, security returns are 1.5 times as volatile as market returns, both up and down. This would be considered an aggressive security because when the overall market return rises or falls 10 percent, this security, on average, would rise or fall 15 percent. Stocks having a beta of less than 1.0 would be considered more conservative investments than the overall market.

Beta is useful for comparing the relative systematic risk of different stocks and, in practice, is used by investors to judge a stock's riskiness. Stocks can be ranked by their betas. Because the variance of the market is a constant across all securities for a particular period, ranking stocks by beta is the same as ranking them by their absolute systematic risk. Stocks with high betas are said to be high-risk securities.
Share price evaluation techniques or Forecasting tools

All the investors invest in the atmosphere of the uncertainty. With the development of more sophisticated forecasting techniques along with the advent of computers, especially the proliferation of the small, personal computer and associated software, forecasting has received more and more attention. Every investor now has the ability to utilize very sophisticated data analysis techniques for forecasting purposes, and an understanding of these techniques is now essential for every investor. For the same reason, investors must be alert to the improper use of forecasting techniques because inaccurate forecasts can lead to poor decisions. Following are some of most commonly used forecasting tools or equity price evaluation techniques:

A) Fundamental analysis,
B) Technical Analysis
C) Point and Figure chart
D) Elliot wave analysis
E) Candle stick analysis
F) Astronomical cycles

A) Fundamental analysis

It is the analysis of various fundamental factors like economic aggregates, industrial indicators as well as facts related to companies. A method of finding out the future price of a stock which an investor wishes to buy. The method for forecasting the future behaviour of investments and the rate of return on them is
clearly through an analysis of the broad economic forces in which they operate the kind of industry they belong and the analysis of the company's internal working through statements like income statement, balance sheet and statement of change of income.

Fundamental analysis is based on the premise that any security (and the market as a whole) has an intrinsic value, or the true value as estimated by an investor. This value is a function of the firm's underlying variables, which combine to produce an expected return and an accompanying risk. By assessing these fundamental determinants of the value of a security, an estimate of its intrinsic value can be determined. This estimated intrinsic value can then be compared to the current market price of the security. Similar to the decision rules used for bonds, decision rules are employed for common stocks when fundamental analysis is used to calculate intrinsic value.

In equilibrium, the current market price of a security reflects the average of the intrinsic value estimates made by investors. An investor whose intrinsic value estimate differs from the market price is, in effect, differing with the market consensus as to the estimate of either expected return or risk, or both. Investors who can perform good fundamental analysis and spot discrepancies should be able to profit by acting, before the market consensus reflects the correct information.

Considerable time and efforts are required to produce the type of detailed financial analysis needed to understand even relatively small companies. The emphasis in this approach is on finding companies with good long-term growth prospects, and making accurate earnings estimates.
Growth stocks carry investors' expectations of above-average future growth in earnings and above-average valuations as a result of high price/earnings ratios. Investors expect these stocks to perform well in the future, and they are willing to pay high multiples for this expected growth.

Value stocks, on the other hand, feature cheap assets and strong balance sheets. Value investing can be traced back to the value-investing principles laid out by the well-known Benjamin Graham, who wrote a famous book on security analysis that has been the foundation for many subsequent security analysts. Growth stocks and value stocks tend to be in vogue over different periods, and the advocates of each camp prosper and suffer accordingly.

Technical analysis can be defined as the use of specific market-generated data for the analysis of both aggregate stock prices (market indices or industry averages) and individual stocks.

The technical approach to investing is essentially a reflection of the idea that prices move in trends which are determined by the changing attitudes of investors toward a variety of economic, monetary, political and psychological forces. The art of technical analysis - for it is an art - is to identify trend changes at an early stage and to maintain an investment posture until the weight of the evidence indicates that the trend is reversed.

Technical analysis is sometimes called market or internal analysis, because it utilizes the record of the market itself to attempt to assess the demand for, and supply of, shares of a stock or the
entire market. Thus, technical analysts believe that the market itself is its own best source of data.

Economics teaches us that prices are determined by the interaction of demand and supply. Technicians do not disagree, but argue that it is extremely difficult to assess all the factors that influence demand and supply. Since not all investors are in agreement on price, the determining factor at any point in time is the net demand (or lack thereof) for a stock based on how many investors are optimistic or pessimistic. Furthermore, once the balance of investors becomes optimistic (pessimistic), this mood is likely to continue for the near term and can be detected by various technical indicators. As the chief market technician of one New York firm says, "All I care about is how people feel about those particular stocks as shown by their putting money in and taking their money out."

Technical analysis is based on published market data as opposed to fundamental data, such as earnings, sales, growth rates, or Government regulations. Market data include the price of a stock or the level of a market index, volume (number of shares traded), and technical indicators, such as the short interest ratio. Many technical analysts believe that only such market data, as opposed to fundamental data, are relevant.

In fundamental analysis the dividend discount model produces an estimate of a stock's intrinsic value, which is then compared to the market price. Fundamentalists believe that their data, properly evaluated, indicate the worth or intrinsic value of a stock. Technicians, on the other hand, believe that it is extremely difficult to estimate intrinsic value and virtually impossible to obtain and
analyze good information consistently. In particular, they are
dubious about the value to be derived from an analysis of
published financial statements. Instead, they focus on market data
as an indication of the forces of supply and demand for a stock or
the market.

Technicians believe that the process by which prices adjust to new
information is one of a gradual adjustment toward a new
(equilibrium) price. As the stock adjusts from its old equilibrium
level to its new level, the price tends to move in a trend. The
central concern is not why the change is taking place, but rather
the very fact that it is taking place at all. Technical analysts believe
that stock prices show identifiable trends that can be exploited by
investors. They seek to identify changes in the direction of a stock
and take a position in the stock to take advantage of the trend.

The following points summarize technical analysis:

1. Technical analysis is based on published market data and
focuses on internal factors by analyzing movements in the
aggregate market, industry average, or stock. In contrast,
fundamental analysis focuses on economic and political factors,
which are external to the market itself.

2. The focus of technical analysis is identifying changes in the
direction of stock prices which tend to move in trends as the
stock price adjusts to a new equilibrium level. These trends can
be analyzed, and changes in trends detected, by studying the
action of price movements and trading volume across time. The
emphasis is on likely price changes.
3. Technicians attempt to assess the overall situation concerning stocks by analyzing breadth indicators, market sentiment, and momentum.

Technical analysis includes the use of graphs (charts) and technical trading rules and indicators.

Price and volume are the primary tools of the pure technical analyst, and the chart is the most important mechanism for displaying this information. Technicians believe that the forces of supply and demand result in particular patterns of price behavior, the most important of which is the trend or overall direction in price. Using a chart, the technician hopes to identify trends and patterns in stock prices that provide trading signals.

Volume data are used to gauge the general condition in the market and to help assess its trend. The evidence seems to suggest that rising (falling,) stock prices are usually associated with rising, (falling) volume. If stock prices rose but volume activity did not keep pace, technicians would be skeptical about the upward trend. An upward surge on contracting volume would be particularly suspect. A downside movement from some pattern or holding point, accompanied by heavy volume, would be taken as a bearish sign.

Technical analysis has evolved over time, so that today it is much more than the charting of individual stocks or the market. In particular, technical analysts use indicators to assess market conditions (breadth) and investor sentiment. They also engage in "contrary analysis," which is an intellectual process more than a
technique. The idea here is to go against the crowd when the crowd starts thinking alike.

Technical analysis has, in some ways, entered into the mainstream of investment valuation processes. Many people who are not convinced totally of the merits of technical analysis still use tools developed by technicians, such as moving averages, relative strength and breadth indicators. Sentiment indicators are also widely used, such as short-interest ratio, the opinions of investment advisory services, mutual fund liquidity and CBOE put/call ratio.

Some of the famous technical Analysis Indicators are:

- Moving Averages
- Relative Strength
- Percentage R
- Oscillators
- Stochastics
- Open Interest
- Put/Call ratio

Technical Analysis is the art of observing how investors have regularly responded to events in the past and using that knowledge to accurately forecast how they will respond in the future. Traders can then take advantage of that knowledge to buy when prices are near their bottoms and sell when prices are close to their highs.

**Point and Figure chart**
The point and figure chart is a study of pure price movement in that time is not taken into consideration while plotting the price action. Since only price changes are recorded, if no price change occurs then the chart is left untouched.

P&F charts are great for observing active market activity, and as such are very helpful in identifying support/resistance lines, buy/sell signals, and trendlines.

P&F charts are also very flexible in that they can easily be made more or less sensitive to price changes to discern between long and short term trends. By varying box and reversal sizes, these charts can be adapted to almost any need. There are also many different ways these charts can be used for entry and exit points. As such, all types of investors can benefit from an applied understanding of P&F charting.

**Candlestick Chart**

A form of Japanese charting that has become popular in the West. A narrow line (shadow) shows the day's price range. A wider body marks the area between the open and the close. If the close is above the open, the body is white (not filled); if the close is below the open, the body is black (filled).

**History**

Candlestick charting can be traced back to the 1700's as a tool used for rice trading. One of the great rice traders of the 1800's, Homma is widely credited for developing the candlestick charting basics used today. In the west, Candlestick Charting has grown in popularity and use, thanks to the efforts of Steve Nisson and Greg
Morris. Candlestick charts are visually appealing and can be a valuable tool in the technicians toolbox as it gives insight into current investor sentiment, allowing for the determination of short-term tops and bottoms.

**Candlestick Terms**

**Candle**

The candle is comprised of two parts, the body and the shadows. The body encompasses the open and closing price for the period. The candle body is black if the security closed below the open, and white if the close was higher than the open for the period. The candlestick shadow encompasses the intraperiod high and low. (Note: In candlestick charting the following periods are often used; 5 min, 15 min, 1 hour, daily and weekly). Long shadows, show that
the trading extended well beyond the opening and/or closing price, while short shadows, show that trading was confined closely to the open and/or closing price.

**Astronomical Cycles:**

A surprising number of prominent traders and market theoreticians use astronomical indicators in their personal trading. They have found that astrology provides a way for studying complex cyclic phenomena such as the markets. It is surprising to know that there are number of books which seriously discuss the use of astronomical cycles for trading the markets. Number of individuals use astrological advice for investing in capital market.

It is the matter of more surprise that many successful traders who are the founders or main exponents of more “scientifically” based methods have used astronomical cycles and astrology, as well, in their work. Some examples are William Gann, Originator of the Gann trading system; Larry Williams, the originator of the Percentage R indicator; Arch Crawford, the publisher of Crawford Perspectives; Mason Sexton, Publisher of Harmonic News letter and Joe Granville, the foremost modern practitioner of On-balance volume technique.

Why have so many sensible, successful traders turned to astronomical cycles and astrology? They have found that if one removes all the hocus-pocus and obscure jargon associated with the astrological art one can utilize astrology for what it really is- a study of time and Cyclicity. Fundamental analysts use information such as earnings reports, P/E ratios, and significant company developments to predict the intrinsic value of the stock. These criterias are called *Fundamental analysis*. Technical analysts,
similarly, use price and volume data, statistical formulas, moving averages, support and resistance levels to determine changes in price trend. How does astrology work in finance? By knowing the historical data for a particular stock, an astrologer can be able to predict about the movement of a stock. He uses the price history of a stock to determine what astrological influences have caused the stock's price to go up or down. No two stocks are alike; every stock has a different set of influences which determine its ups or downs. Once the influences are identified, they may be applied to the Future movement of the stock. It is also due to the planetary influences on the collective mind of investors, which in turn causes the market to go up or down. The phases of the moon have a powerful effect on mass mood. It is a little known and less publicised fact that a number of top brokers and analysts regularly employ the services of astrologers in finance to enhance their forecasting ability.

Astrology and stocks are co-related. The share market depends upon the influence of the planets. Each and every planet represents particular stock. The planets which represent stocks are:

**Sun** The planet Sun represents all the Public Sector units and precious metals.

**Moon** The planet Moon represents Petroleum, and gas sectors and Shipping industries.

**Mars** The planet Mars represents Automobile industry and Pharma sectors.

**Mercury** The planet Mercury represents Textile sector and FMCG.

**Venus** The planet Venus represents Media and sugar sector.

**Jupiter** The planet Jupiter represents Banking sector and financial sector.
**Saturn**  The planet Saturn represents Metal industry, Telecommunication sector and mining sector.

**Rahu**  The planet Rahu represents media, telecommunication and electrical sectors.

**Ketu**  The planet ketu represents Power and IT sector.