

**INVESTMENTS**

**STRUCTURE**

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**1.1 CONCEPT OF INVESTMENT**

**An Introduction to Investment:**

Investing in various types of assets is an interesting activity that attracts people from all walks of life irrespective of their occupation, economic status, education and family background. When a person has more money than he requires for current consumption, he would be coined as a potential investor. The investor who is having extra cash could invest it in securities or in any other assets like or gold or real estate or could simply deposit it in his bank account. The companies that have extra income may like to invest their money in the extension of the existing firm or undertake new venture. All of these activities in a broader sense mean investment.

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 decision such as type, mix, amount, timing, grade etc, of investment the decision making has to be continues as well as 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 definition**

We can define investment as the process of, “sacrificing something now for the prospect of gaining something later”. So, investment or investing is a term with several closely-related meanings in business management, finance and economics, related to saving or deferring consumption. Investing is the active redirection of resources: from being consumed today, to creating benefits in the future; the use of assets to earn income or profit. An investment is a choice by an individual or an organization such as a pension fund, after at least some careful analysis or thought, to place or lend money in a vehicle (e.g. property, stock securities, bonds) that has sufficiently low risk and provides the possibility of generating returns over a period of time.

**Can we think of Some Transactions, which will Qualify as "Investments" as per Our Definition**

1. In order to settle down, a young couple buys a house for Rs.3 lakhs in Bangalore.
2. A wealthy farmer pays Rs 1 lakh for a piece of land in his village.
3. A government officer buys 'units' of Unit Trust of India worth Rs 4,000.
4. A banker buys, in anticipation of good return, 10 shares of Reliance Industries Ltd. for Rs.24, 000
5. A lady clerk deposits Rs.5000 in a Post Office Savings Account.

**Is there any Common Feature to all these Investments?**

A common feature of all these transactions is that something is sacrificed now for the prospects of gaining something later. For example, the wealthy farmer in transaction 2 sacrifices Rs1 lakh now for the prospects of crop income later. The lady clerk in transaction sacrifices Rs.5,000 now for the prospect of getting a larger amount later due to interest earned on the savings account. Thus, in a broad sense, all these transactions qualify as investment.

Investment has many meanings and facets. However, investment can be interpreted broadly from three angles -

- ❖ 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 pro sense of an expectation of receiving an additional return in future. In the present context of portfolio management, the investment is considered to be financial investment, which imply 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 which is the sum of current income and the present value of all future incomes. In this text investment refers to financial assets. 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.

**1.2 Investment vs. Speculation**

**How Is Investment Different from Speculation?**

Placing or lending money in a vehicle that risks the loss of the principal sum or that has not been thoroughly analyzed is, by definition speculation, not investment. Often investment is understood as a synonym of speculation. Investment and speculation are somewhat different and yet similar because speculation requires an investment and investment are at least somewhat speculative. Probably the best way to make a distinction between investment and speculation is by considering the

role of expectation. Investments are usually made with the expectation that a certain stream of income or a certain price that has existed will not change in the future. Whereas speculation are usually based on the expectation that some change will occur in the future, thereby resulting a return.

Thus, an expected change is the basis for speculation but not for investment. An investment also can be distinguished from speculation by the time horizon of the investor and often by the risk return characteristic of investment. A true investor is interested in a good and consistent rate of return for a long period of time. In contrast, the speculator seeks opportunities promising very large return earned within a short period of time due to changing environment. Speculation involves a higher level of risk and a more uncertain expectation of returns, which is not necessarily the case with investment

The identification of these distinctions helps to define the role of the investor and the speculator in the market. The investor can be said to be interested in a good rate of return of a consistent basis over a relatively longer duration. For this purpose, the investor computes the real worth of the security before investing in it. The speculator seeks very large returns from the market quickly. For a speculator, market expectations and price movements are the main factors influencing a buy or sell decision. Speculation, thus, is riskier than investment.

	<b>Investor</b>	<b>Speculator</b>
Planning Horizon	An investor has a longer planning horizon. His holding period is usually at least one year.	A speculator has a relatively short planning horizon. His holding may be a few days to a few months.
Risk disposition	An investor is normally not willing to assume more than moderate risk. Rarely does he assume high risk.	A speculator is ordinarily willing to assume high-risk return expectations. An investor usually seeks a modest rate of return, which is commensurate with the limited risk assumed by him.
Return expectation	An investor usually seeks a modest rate of return, which is commensurate with the limited risk assumed by him.	A speculator looks for a high rate of return in exchange for the high risk borne by him.
Leverage	Typically, an investor uses his own funds and avoids borrowed funds.	A speculator normally resorts to borrowings, which can be very substantial, to supplement his resources.
Basis of decisions	An investor attaches greater significance to fundamental factors and attempts a careful evaluation of the prospects of the firm.	A speculator relies more on technical charts and market psychology.

We know that investment means sacrificing or committing some money today in anticipation of a financial return later. The investor indulges in a bit of speculation involved in all investment decisions. It does not follow through that all investments are all speculative by nature. Genuine investments are carefully thought out of decisions. They involve only calculated risks. The expected return is consistent with the underlying risk of the investment. A genuine investor is risk averse and usually has a long-term prospective in mind. Speculative investments on the other hand are not carefully thought out of decisions. They are based on rumors, hot tips, inside dopes and often simply on hunches. The risk assumed is disproportionate to the return expected from speculation. The

intention is to profit from short-term market fluctuations. In other words, a speculator is relatively less risk-averse and has a short-term perspective for investment.

A genuine investor is interested in a good rate of return, earned on a rather consistent basis for a relatively long period of time. The speculator, on the other hand, seeks opportunities promising very large returns, earned rather quickly. In this process, he assumes a risk that is disproportionate to the anticipated return.

we cannot infer that there exists a demarcation between stocks and speculative stocks. The same stock can be purchased as a speculation or as investment, depending on the motive of the purchaser. For example, the decision of professor to invest in the stock of Reliance Industries is considered as a genuine investment because he seems to be interested in a regular dividend income and prospects of long-term capital appreciation. However, if another person buys the same stock with the anticipation that the share price is likely to rise, his decision will be characterized as speculation.

### **1.3 Investment Objectives**

All personal investing is designed to achieve a goal, which may be tangible (a car, a house) or intangible (security, social status). Therefore, goals should be classified into various types based on the way investors approach them.

**Near-term High Priority Goals:** These are goals, which have a high emotional priority to the investor, and he wishes to achieve these goals within a few years at the most. For example: a new house. As a result; investment vehicles for these goals tend to be either in the forms equivalent to "cash or as fixed-income instruments with maturity dates in correspondence with the goal dates. Because of the high emotional, importance these goals have, investor, especially the one with moderate means will not go for any other form of investment which involves more risk especially where, his goal is just in sight.

**Long-Term High Priority Goals:** For most people, this goal is an indication of: their need for financial independence at a point some, years ahead in the future. Eg: Financial independence at the time of retirement or starting a fund for the higher education of a three-year old child. Normally, we find that either because of personal preference or because the discounted present value is larger in relation to their resources, the time of realization for such goals is set around 60 years of age for people of moderate means. Because of the long-term nature of such goals, there is not a tendency to adopt more aggressive investment approaches except perhaps, in the last 5 to 10 years before retirement. Even then, investors usually prefer a diversified approach using different classes of assets.

**Low Priority Goals:** These goals are much lower down in the scale of priority and are not particularly painful to achieve. For people with moderate to substantial wealth, these could range from a world tour to donating funds to charity. As a result, investors often invest in speculative kinds of investments either for the fun of it or just to try out some particular aspect of the investment process.

**Entrepreneurial or Money-Making goals:** These goals pertain to individuals who want to maximize wealth and who are not satisfied by the conventional saving and investing approach. These investors usually put all the spare money they have into stocks preferably of the company in which they are working/owing and leave it there until it reaches some level which either the individual believes is enough or is scared of losing what has been built- up over the years. Even then the process of diversification and building up a conventional portfolio usually takes him a long time involving a series of opportunities and sales spread over many years.

In any stock exchange, there are two main categories of speculators called the bulls and bears. A bull buys shares in the expectation of selling them at a higher price. When there is a

bullish tendency in the market, share prices tend to go up since the demand for the shares is high. A bear sells shares in the expectation of a fall in price with the intention of buying the shares at a lower price at a future date. These bearish tendencies result in a fall in the price of shares.

A share market needs both investment and speculative activities. Speculative activity adds to the market liquidity. A wider distribution of shareholders makes it necessary for a market to exist.

#### **1.4 INVESTMENT PROCESS**

An organized view of the investment process involves analyzing the basic nature of investment decisions and organizing the activities in the decision process.

Investment process is governed by the two important facets of investment they are risk and return. Therefore, we first consider these two basic parameters that are of critical importance to all investors and the tradeoff that exists between expected return and risk.

Given the foundation for making investment decisions the trade-off between expected return and risk- we next consider the decision process in investments as it is typically practiced today. Although numerous separate decisions must be made, for organizational purposes, this decision process has traditionally been divided into a two-step process: security analysis and portfolio management. Security analysis involves the valuation of securities, whereas portfolio management involves the management of an investor's investment selections as a portfolio (package of assets), with its own unique characteristics.

##### **Security Analysis**

Traditional investment analysis, when applied to securities, emphasizes the projection of prices and dividends. That is, the potential price of a firm's common stock and the future dividend stream are forecasted, then discounted back to the present. This intrinsic value is then compared with the security's current market price. If the current market price is below the intrinsic value, a purchase is recommended, and if vice versa is the case sale is recommended.

Although modern security analysis is deeply rooted in the fundamental concepts just outlined, the emphasis has shifted. The more modern approach to common stock analysis emphasizes return and risk estimates rather than mere price and dividend estimates.

##### **Portfolio Management**

Portfolios are combinations of assets. In this text, portfolios consist of collections of securities. Traditional portfolio planning emphasizes on the character and the risk-bearing capacity of the investor. For example, a young, aggressive, single adult would be advised to buy stocks in newer, dynamic, rapidly growing firms. A retired widow would be advised to purchase stocks and bonds in old-line, established, stable firms, such as utilities.

Modern portfolio theory suggests that the traditional approach to portfolio analysis, selection, and management may yield less than optimum results. Hence a more scientific approach is needed, based on estimates of risk and return of the portfolio and the attitudes of the investor toward a risk-return trade-off stemming from the analysis of the individual securities.

#### **1.5 Characteristics of Investment**

The characteristics of investment can be understood in terms of as:

- return
- risk
- safety
- liquidity

**Return:** All investments are characterized by the expectation of a return. In fact, investments are made 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, market demand and so on.

**Risk:** Risk is inherent in any investment. Risk may relate to loss of capital, delay in repayment of capital, nonpayment 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.

The risk and expected return of an investment are related. Theoretically, the higher the risk, higher is the expected return. 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.

#### **Does the Investment Suffer from any Constraints:**

An investor-seeking fulfillment of the above-mentioned goals operate under certain constraints:

- Liquidity
- Age
- Need for regular income
- Risk Tolerance
- Tax liability

The change in investment management, therefore, lies in choosing the appropriate investments and designing a unit that will meet the investment objectives of the investor subject to his constraints. To take on this challenge, the first step will be to get acquainted with the different types of investment alternatives available to the investors in our financial market.

#### **1.6 Investment categories:**

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 pieces 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 — Securitized (i.e. security forms of) investments - 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:

- i) 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.
- ii) Government securities.
- iii) Such other instruments &\*s may be declared by the central Government as securities, and,
- iv) 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, that 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 in physical assets such as Gold, Silver, Diamonds, Real estate, Antiques etc. Indian investors have always considered 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 nonmarketable, 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
  - Warrants
  - Derivatives
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

### **1.7 Self-Check Questions**

- 1.7.1 What is Investment?
- 1.7.2 What do you understand by Real assets?

### **1.8 Short Questions**

1. Write characteristics of Investment.
2. What are Investment Objectives?

### **1.9 Long Questions**

1. Write down the Investment Process.
2. Differentiate between Investor and Speculator.

### **1.10 References**

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### **1.11 Answer to Self-Check Questions**

1.7.1 Investment involves making of a sacrifice in the present with the hope of deriving future benefits.

1.7.2 Real assets are tangible material things like building, automobiles, land, gold etc.



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**INVESTMENTS ALTERNATIVES**

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**STRUCTURE**

- 2.1 Bank Fixed Deposits
- 2.2 Fixed Deposits
- 2.3 Public Provident Funds (PPF)
- 2.4 Shares
- 2.5 Bonds
- 2.6 Self-Check Questions
- 2.7 Short Questions
- 2.8 Long Questions
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- 2.10 Answer to Self-Check Questions

**2.1 Bank Fixed Deposits**

**Type 1** Investments have the lowest investment risk but the highest purchasing power risk.

These include insured savings accounts, post office certificates of deposit, FE and HH savings bonds, treasury securities, and government agency securities.

**Bank Fixed Deposits**

When you deposit a certain sum in a bank with a fixed rate of interest and a specified time, it is called a bank Fixed Deposit (FD). At maturity, you are entitled to receive the principal amount as well as the interest earned at the pre-specified rate during that period. The rate of interest for Bank Fixed Deposits varies between 6 and 9 percent, depending on the maturity period of the FD and the amount invested. The interest can be calculated monthly, quarterly, half-yearly, or annually, and varies from bank to bank. They are one the most common savings avenues and account for a substantial portion of an average investor's savings. The facilities vary from bank to bank. Some services offered are withdrawal through cheques on maturity, break deposit through premature withdrawal, and overdraft facility etc.

**Interest Rates Payable on Deposits (for example)**

<b>Duration</b>	<b>Interest Rate (%p.a.)</b>
15 days to 45 days	5.25
46 days to 179 days	7.00
180 days to less than 1 year	7.25
1 year to less than 2 years	7.50
2 years to less than 3 years	7.75
3 years to above	8.00

**Source:** State Bank of India

**Investment Objectives**

**How Suitable are Fixed Deposits for an Increase in Investment?**

While a Bank FD does provide for an increase in your initial investment, it may be at a lower rate than other comparable fixed-return instruments. Since capital appreciation in any investment option depends on the safety of that option, and banks are among the safest avenues, the increase in investment is modest.

### **Are Fixed Deposits Suitable for Regular Income?**

A Bank FD does not provide regular interest income, but a lump-sum amount on its maturity. Since the lump-sum amount depends on the rate of interest, currently between 6 and 9 percent, Bank FDs are not suitable for regular income. To What Extent Does a Bank FD Protect Me Against Inflation?

With a fixed return, which is lower than other assured return options, banks cannot guard against inflation. This is the main problem with Bank FDs as any return has to be calculated keeping inflation in mind.

### **Borrow Against Bank FDs?**

Yes, in most cases, loans up to 90 percent of the deposit amount can be taken from the bank against fixed deposit receipts.

### **Risk Considerations**

Bank Deposits are the safest investment option after post-office schemes since the banks function according to the parameters set by the Reserve Bank of India (RBI), which frames regulations keeping in mind the interest of the investors.

### **How Assured Is Income?**

There is no regular income in this option as the payment is made in one lump sum after the expiry of the tenure of the Bank Fixed Deposit.

### **Are There Any Risks Unique to Bank FDs?**

Not really. Since all the banks operating in the country, irrespective of whether they are nationalized, private, or foreign, are governed by the RBI's rules and regulations, which give due weightage to the interest of the investor, there is little chance of an investment in a bank deposit going under. In fact, till recently, all bank deposits were insured under the Deposit Insurance & Credit Guarantee Scheme of India, which has now been made optional. Nevertheless, bank deposits are still among the safest modes of investment/The thing to consider before investing in a FD is the rate of interest and the inflation rate. A high inflation rate can simply chip away your real returns. So, it is critical to take the inflation rate into consideration to arrive at the real rate of interest.

### **Are Bank FDs rated for their Credit Quality?**

No, Bank FDs are not commercially rated. Since Bank FDs are extremely secure, the only thing to check out while investing in one is the interest rate being offered and your convenience.

### **Buying, Selling, and Holding**

#### **How Do I Open a Bank Fixed Deposit Account?**

You can get a bank FD at any bank, be it nationalized, private, or foreign. You have to open a FD account with the bank, and make the deposit. However, some banks insist that you maintain a savings account with them to operate an FD.

#### **what is the Minimum Investment and the Range of Investment for Bank FDs?**

Minimum investment in an FD varies from bank to bank. It could be as low as Rs 500 in the case of nationalized banks and could go up to Rs 10,000 in private banks and Rs 50,000 in some foreign banks. Banks are free to offer interest rates on their FDs, depending on the interest rate scenario, the government's monetary policy, and their money supply position.

#### **What is the Duration of a Bank FD?**

Bank FDs have varying durations: from 15 days to more than 3 years. Depending on their duration, the interest also varies.

#### **Can Bank FDs be sold in The Secondary Market?**

No, a bank FD can only be encashed from the bank it was taken from

#### **What is the Liquidity of Bank FDs?**

Bank FDs are liquid to the extent that premature withdrawal of a bank FD is allowed.

However, that involves a loss of interest.

### **What is the Mode of Holding a Bank FD?**

When a depositor opens an FD account with a bank, a passbook or an account statement is issued to him, which can be updated from time to time, depending on the duration of the FD and the frequency of the interest calculation.

### **Tax Implications**

Interest income from a Bank FD qualifies for exemption under section 80C, which means that interest income up to Rs 12,000 is tax-exempt.

### **Recurring Bank Deposits**

Under a Recurring Bank Deposit, you invest a specific amount in a bank on a monthly basis for a fixed rate of return. The deposit has a fixed tenure, at the end of which you get your principal sum as well as the interest earned during that period. A Recurring Bank Deposit is a powerful tool for regular savings.

### **Post Office Time Deposits**

A Time Deposit is an investment option that pays annual interest rates between 8.25 and 9.5 percent, compounded quarterly and is available through post offices across the country. In most of aspects, these resemble fixed deposits being an instrument provided by the govt, of India. Similarly, KVP and NSS provide guaranteed returns

#### **Kisan Vikas Patra**

Scheme	Kisan Vikas Patra
Tenure:	6.5 years (encashable after 2.5 years)
Issue date:	Perpetually Open
Closure date:	End of tenure
Interest:	
<b>Interest Payment:</b>	<b>9.5%</b>
Cumulative compounding	
Effective interest rate:	9.5%
Minimum investment:	Rs.100
Maximum Investment:	No Limit
Tax benefits:	Nil
Loan Facility:	Not Available. However, can be pledged in a bank.
Withdrawal:	Not Available

#### **National Savings Scheme**

Scheme:	National Savings Scheme
Tenure:	4 years
Issue date:	Perpetually Open
Closure date:	Not available
Interest:	10.5%
Interest Payment:	Yearly
Effective interest rate:	10.5%
Minimum investment	Rs. 100
Maximum Investment:	No Limit
Tax benefits:	Sec. 88 and Sec.80L
Loan Facility:	Not available
Withdrawal:	Not available
Remarks:	None

## **2.2 Fixed Deposits**

The term 'fixed' in fixed deposits denotes the period of maturity or tenor. Fixed Deposits, therefore, presuppose a certain length of time for which the depositor decides to keep the money with the bank, and the rate of interest payable to the depositor is decided by this tenor. The rate of interest differs from bank to bank and is generally higher for private sector and foreign banks. This, however, does not mean that the depositor loses all his rights over the money for the duration of the tenor decided. The deposits can be withdrawn before the period is over. However, the amount of interest payable to the depositor, in such cases goes down (usually 1% to 2% less than the original rate). Moreover, as per RBI regulations, there will be no interest paid for any premature withdrawals for the period 15 days to 29 or 15 to 45 days as the case may be.

Other than banks, there are non-banking financial companies and companies that float schemes from time to time for garnering deposits from the public. In the recent past, however, many such schemes have gone bust and it is very essential to look out for danger signals before putting all your eggs in one basket.

### **Company Fixed Deposits**

Fixed deposits in companies that earn a fixed rate of return over a period of time are called Company Fixed Deposits. Financial institutions and Non-Banking Finance Companies (NBFCs) also accept such deposits. Deposits thus mobilized are governed by the Companies Act under Section 58A. These deposits are unsecured, i.e., if the company defaults, the investor cannot sell the company to recover his capital, thus making them a risky investment option. NBFCs are small organizations and have modest fixed and manpower costs. Therefore, they can pass on the benefits to the investor in the form of a higher rate of interest. NBFCs suffer from a credibility crisis. So be sure to check your credit rating. AAA rating is the safest. According to the latest RBI guidelines, NBFCs and companies cannot offer more than 14 percent interest on public deposits

### **Investment Objectives**

#### **Are Company-Fixed Deposits Suitable for an Increase in My Investment?**

A Company/NBFC Fixed Deposit provides for faster appreciation in the principal amount than bank fixed deposits and post-office schemes. However, the increase in the interest rate is essentially due to the fact that it entails more risk as compared to banks and post-office schemes.

#### **Are Company-Fixed Deposits Suitable for Income?**

Yes, Company/NBFC Fixed Deposits are suitable for regular income with the option to receive monthly, quarterly, half-yearly, and annual interest income. Moreover, the interest rates offered are higher than banks.

#### **To What Extent Does a Company Deposit Protect Me Against Inflation?**

A Company/NBFC Fixed Deposit provides you with limited protection against inflation, with comparatively higher returns than other assured return options.

### **Risk Considerations**

Company Fixed Deposits are unsecured instruments, i.e., there are no assets backing them up. Therefore, in case the company/ NBFC goes under, chances are that you may not get your principal sum back. It depends on the strength of the company and its ability to pay back your deposit at the time of its maturity. While investing in an NBFC, always remember to first check out its credit rating. Also, beware of NBFCs offering ridiculously high rates of interest.

#### **How Assured Is Income?**

Not at all secured. Some NBFCs have known to default on their interest and principal payments. You must check out the liquidity position and its revenue plan before investing in an NBFC.

#### **Are There any Risks Unique to Company Fixed Deposits?**

If the Company/NBFC goes under, there is no assurance of your principal amount. Moreover, there is no guarantee of your receiving the regular-interval income from the company. Inflation and interest rate movements are one of the major factors affecting the decision to invest in a Company/NBFC Fixed Deposit. Also, you must keep the safety considerations and the company/NBFC's credit rating and credibility in mind before investing in one.

**Are Company/NBFC Deposits rated for their credit Quality?**

Yes, Company/NBFC Fixed Deposits are rated by credit rating agencies like CARE, CRISIL and ICRA. A company rated lower by credit rating agency is likely to offer a higher rate of interest and vice-versa. An AAA rating signifies the highest safety, and D or FD means the company is in default.

**Buying, Selling, and Holding**

**How does one Buy a Company/NBFC Fixed Deposit?** Company Fixed Deposits forms are available through various broking agencies or directly with the companies. Similar is the case for the NBFCs Some of the options available are: Monthly income deposits, where interest is paid every month - Quarterly income deposits, where interest is paid once every quarter- Cumulative deposits, where interest is accumulated and paid along with the principal at the time of maturity.  
- Recurring deposits, similar to the recurring deposits of banks.

**What Is the Minimum Investment and The Range of Investment for A Company/NBFC Fixed Deposit?**

Minimum investment in a Company/NBFC Fixed deposit varies from company to company. Normally, the minimum investment is Rs 5,000. For individual investors, there is no upper ceiling. In the case of recurring deposits, the minimum amount is normally Rs 100 per month.

**What is The Duration of The Company/NBFC Fixed Deposit Scheme?**

Company/NBFC Fixed Deposits have varying durations; they may vary from a minimum of 6 months to 5 years or even more.

**Can a Company FD be sold in the Secondary Market?** No, a company/NBFC Fixed Deposit can only be encashed at the Company/ NBFC it was invested in.

**"What is the Liquidity of a Company/NBFC Fixed Deposit?**

A company/NBFC Fixed Deposit is liquid to the extent that premature withdrawal is allowed, but it entails a loss of interest.

**How the Market Value of a Company/NBFC is fixed Deposit Determined, and How Do I Keep Track of It?**

Company/NBFC Fixed Deposits do not have a market value since they can't be sold or purchased in the secondary market.

**What is The Mode of Holding a Company/NBFC Fixed Deposit?**

When a depositor invests in a Company/NBFC Fixed Deposit, a receipt and acknowledgment is issued to him.

**Tax Implications**

Interest from a Company/NBFC Fixed Deposit is fully taxable and is not covered under Section 80L of the Income Tax Act. Therefore, no deductions are allowed from interest income.

**Employees Provident Fund Scheme 1952**

**General Background**

The EPF program is a fund, providing money upon retirement, resignation or death, based on the accumulated contributions plus interest. In this scheme both the employer and the employee contribute 12% of annual income towards the fund. Of this 24% contribution, 8.33% is given towards a family pension plan. The remaining portion (15.67%) grows at a rate of 9.5% per annum. This

return is guaranteed. Also, investments up to a maximum of Rs 70,000 per annum are not taxed. Withdrawals from EPF are allowed under certain special circumstances like buying a house, children's wedding, etc. If you quit your job and provide a declaration that you do not intend to work for the next six months you can withdraw your EPF.

#### **How the Employees' Provident Fund Scheme works**

As per the amendment-dated 22.9.1997 in the Act, both the employees and employer contribute to the fund at the rate of 12% of the basic wages, dearness allowance and retaining allowance, if any, payable to employees per month. The rate of contribution is 10% in the case of following establishments:

Any covered establishment with less than 20 employees, for establishments cover prior to 22.9.97.

Any sick industrial company as defined in clause (O) of Sub Section (1) of Section .1 of the Sick Industrial Companies (Special Provisions) Act, 1985 and which has been declared as such by the Board for Industrial and Financial Reconstruction, Any establishment which has at the end of any financial year accumulated losses equal to or exceeding its entire net worth and Any establishment engaged in manufacturing of (a) jute (b) Breed (d) coir and (e) Guar gum Industries/ Factories. The contribution under the Employees' Provident Fund Scheme by the employee and employer will be as under with effect from 22.9.1997.

#### **Employees' Provident Fund Interest Rate**

The rate of interest is fixed by the Central Government in consultation with the Central Board of trustees, Employees' Provident Fund every year during March/April. The interest is credited to the members account on monthly running balance with effect from the last day in each year.

#### **Withdrawal Before Retirement**

A member can withdraw upto 90% of the amount of provident fund at credit after attaining the age of 54 years or within one year before actual retirement on superannuation whichever is later. Claim application in form 19 may be submitted to the concerned Provident Fund Office.

#### **Accumulations of a Deceased Member**

Amount of Provide nt Fund at the credit of the deceased member is payable to nominees/ legal heirs. Claim application in form 20 may be submitted to the concerned Provident Fund Office.

### **2.3 Public Provident Fund (PPF)**

A Public Provident Fund (PPF) is a long-term savings plan with powerful tax benefits. Your money grows @. 8.5 percent per annum, and this is guaranteed by the Government of India (GOI). You may consider this option if you are not looking for short-term liquidity or regular income. The normal maturity period is 15 years from the close of the financial year in which the initial subscription was made.

A PPF account can be opened with a minimum deposit of Rs.500 at any branch of the State Bank of India (SBI) or branches of its associated banks like the State Bank of Mysore or Hyderabad. The account can also be opened at the branches of a few nationalized banks, like the Bank of India, Central Bank of India and Bank of Baroda, and at any head post office or general post office. After opening an account you get a passbook, which will be used as a record for all your deposits, interest accruals, withdrawals and loans.

However, be warned: you can have only one PPF account in your name. If at any point it is detected that you have two accounts, the second account that you have opened will be closed, and you will be refunded only the principal, not the interest. Again, two adults cannot open a joint account. The account will have to be opened in only one person's name. Of course, the person who opens an account is free to appoint nominees.

## **Investment Objectives**

### **How Suitable Is A PPF Account for An Increase In My Investment?**

A PPF account is not aimed at generating capital appreciation since it has no secondary market. It is mainly suitable for long-term saving and for availing of tax incentives. The lump-sum amount that you receive on maturity (at the end of 15 years) is completely tax-free,

### **Is A Public Provident Fund Account Suitable for Regular Income?**

PPF does not provide any avenues for regular income. It provides for accumulation of interest income over a 15-year period, and the lump-sum amount (principal < interest) is payable on maturity.

### **To What Extent does a PPF Account Protect Me Against Inflation?**

A PPF account does not provide protection against high inflation. In certain years when the inflation rate is high, the real rate of return on your PPF may be marginal. This depends on the prevailing rate of interest on your PPF at any given time. These rates are notified by the GOI in the Official Gazette from time to time, and are calculated in such manner as is specified in the scheme.

### **Can I Borrow against my PPF Account?**

Yes, loans can be availed of from the third to sixth year @ 1 per cent per annum if repaid within 36 months. Else, interest on loan is set at 6 per cent per annum. Amount of such loans will not exceed 25 per cent of the amount that stood to your credit at the end of the second year immediately preceding the year in which the loan is allied for. You will continue to earn interest at the specified rate on your balance in the PPF Account after availing of the loan facility.

## **Risk Considerations**

### **How Assured can I be of getting My Full Investment Back?**

Your principal is assured. The PPF Scheme has the backing of the GOI, and is considered completely risk-free.

### **How Assured is My Income?**

Since the PPF Scheme is backed by the GOI, your interest income is assured.

### **Are there any Risks Unique to PPF Scheme?**

No, you can safely put your money in a PPF Scheme as it is risk-free. Although factors like inflation and interest rate fluctuations may determine whether you opt for a PPF Account or not, the decision to invest in a PPF Account is based on the twin benefits of long-term savings and tax incentives. Please note that if the government reduces interest rates and you are already operating an account, then the new interest rates will be applicable to your account. Subsequent interest calculations will be on the new rate of interest.

### **Is the PPF Scheme rated for their Credit Quality?**

No, since the PPF Scheme has the backing of the GOI, it does not require any commercial rating.

## **Buying, Selling, and Holding**

The minimum investment in a PPF account is Rs 500 per annum for each year of the Scheme. The maximum prescribed contribution is Rs 70,000 per annum. The highlight of the scheme is that you can vary your investments between Rs 500 and Rs 70,000 every year. The maximum number of installments in a year is 12. No fixed investment is required.

### **What is the Duration of a PPF Scheme?**

The duration of a PPF account is 15 years, i.e., 15 complete financial years. If a person opens a PPF account on February 2001, the account will mature on April 2017. Even after the expiry of 15 years, the PPF Account can be extended for five years at a time.

### **Can a PPF Account be sold in the Secondary Market? What is the Liquidity of My PPF Account?**

On expiry of five financial years from the end of the financial year in which the initial

subscription was made, you have the facility of one withdrawal every year. The maximum amount available for withdrawal is 50 percent of the balance at the end of the year immediately preceding the year of withdrawal or the fourth year immediately preceding the year of withdrawal, whichever is lower. For instance, if you have Rs 50,000 at the end of the fifth financial year, and Rs 90,000 at the end of the eighth financial year, you can withdraw up to Rs 25,000 (50 per cent of Rs 50,000). Importantly, there are no penalties for availing of the withdrawal facility.

### **Tax Implications**

Besides long-term savings, the most attractive feature of PPF is the tax incentives it offers. The interest income earned in PPF and the lump-sum amount received on maturity or premature withdrawal is completely tax-free as per the pro-visions of the Income Tax Act, 1961. The scheme also offers tax benefits under Section 88 of the Income Tax Act, 1961

You can also open an account in the name of your spouse or children including married daughters and claim the tax rebate if the contribution is made out of your personal taxable income.

Scheme:	Public Provident Fund
Tenure:	15 years and then optional extension in blocks of 5 years
Issue date:	Perpetually Open
Closure date:	At the end of the 15th year
Interest:	8.5%
Interest Payment:	Yearly (Computed on monthly balance)
Effective interest rate	8.9%
Minimum Investment	Rs.500
Maximum Investment	Rs.70000 per financial year
Tax Benefits	Sec.88 and Sec. 10
Loan facility	Available  Loans can be obtained upto 25% of the balance at the end of the 2nd preceding financial year in the 3rd year of opening account. This loan is repayable in 3 years at an interest rate 1% above the prevalent PPF rate. Thus, the repayment rate is now 12%. After the repayment of the first loan is affected, a second loan can be taken. This loan facility ceases after the end of the 6th financial year as after that the withdrawal facility starts.
Withdrawal	Available  From the 7th year and every year thereafter, the account holder is allowed to withdraw a maximum of 50% of the balance that is to his/her credit at the end of the 4th or the 1st previous financial year, whichever is lower.
Remarks	Benefits are two-fold, 20% of the amount paid each year in the account is available as a tax rebate and interest earned is tax free. The account can be opened even at any of the select few nationalized banks also

### **2.4 Shares**

Shares, also called scrips, are the basic building blocks of a company. A company's ownership is determined on the basis of its shareholding. Shares are, by far, the most glamorous investment option for the simple reason that, over the long term, they offer the highest returns. Predictably,

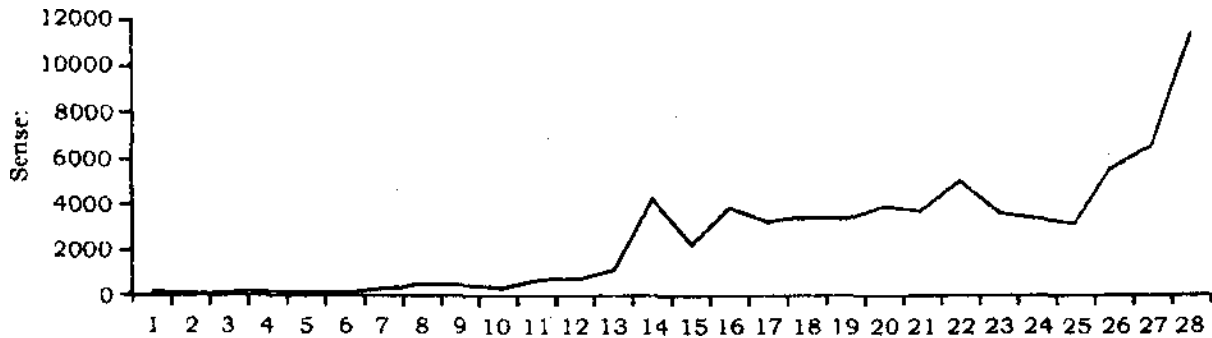


they're also the riskiest investment option.

The BSE Sensex is the most popular index that tracks the movements of shares of 30 blue-chip companies on a weighted average basis. The rise and fall in the value of the Sensex, measured in points, broadly indicates the price-movement of the value of shares. Of late, technology has played a major role in enhancing the efficiency, safety, and transparency of the markets. The introduction of Net trading has made it possible for an investor to trade in shares at the click of a mouse.

BSE Sensex Historical Graph

[http: \( / www.DaJalStreet.Biz](http://www.DaJalStreet.Biz)



### Investment Objectives

How Suitable Are Shares for An Increase in My Investment? Shares are meant to be long-term investments. Three golden rules for equity investment. Diversify, Average out & most importantly stay invested. Shares do generate income from dividends as well as capital appreciation and have a strong potential to increase the value of investment. But shares are risky -share prices are affected by factors beyond anyone's control and hence one needs to have an appetite for that kind of risk are Shares Suitable for Regular Income? Yes, if the company earns good profits and pays dividends regularly, shares are ideal for income purposes. However, not all good companies regularly pay dividends as they may choose to employ the profits for investments and growth purposes. To What Extent Do Shares Protect Me Against Inflation? Generally, they do provide for some protection although share prices have no relation to inflation. The price may crash or rise far beyond the inflation rate. Can I Borrow Against Shares? Yes, shares being what, they are, it depends on the company whose shares you own. Keeping this in mind, you can pledge them with a bank for raising a loan. The banks have their list of approved shares that they accept as a security. Generally, shares of well-known and respectable companies are accepted as security.

### Risk Consideration

How Assured Can I Be of Getting My Full Investment Back? Zero assurance. Forget the original amount invested. You will get your money back only according to the prices dictated by the stock market, which depend purely on the market forces of demand and supply. Also, in case the company goes in for liquidation, you will get your money back only after the company has paid off all its liabilities, i.e., if there is any money left with it by then. But then, it is the potential appreciation of investment that attracts people to share. How Assured Is My Income No assurance since there is no compulsion on the company to pay dividends. Are There Any Risks Unique to Investing in Shares? Unless it is a well-established company, there is the risk of the promoter running away with your money, or of the company closing down and declaring itself bankrupt. In that case, you will be left holding worthless pieces of certificates. However, the Securities & Exchange Board of India (SEBI) has put in place several regulations to protect the interest of small investors. Share prices can be affected by just about anything going on in the world. Investment decisions depend on the outlook of the investor. If you believe that the price of a share is going to go up, buy it, and sell if you have the opposite view. Are Shares rated for their credit quality? No, shares are not rated. Of course, there are

plenty of brokers and other sources from where one gets “hot tips” or advice on what shares to buy and which ones to sell, but it is entirely up to you to decide how much to trust these sources.

### **Buying, Selling, and Holding**

#### **How do I Buy Shares?**

Shares can be purchased directly when a company issues them through an Initial Public Offering (IPO) or from the stock market through a stockbroker. The stock broker charges a small percentage of your transaction as commission, or brokerage, to execute your orders of purchase or sale. The most popular bourses in India are the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE).

#### **What is the Minimum Investment and the Range of Investment for Shares?**

The minimum investment in buying shares varies, depending on the price and quantity of the shares you want to buy. Generally, in the primary market, when a company comes out with an IPO, approximately 50-100 shares at the face value of Rs 10 each are mandatory to be bought. Also, for physical trading in- the secondary market, it is advisable to buy shares in marketable lots of 10, 50, or 100, depending on their price. However, with a lot of company opting for the demat route, it is getting increasingly possible to trade even single units of shares.

#### **What is the Duration of Shares?**

Shares have absolutely no timeframe. They exist as long as the company exists

#### **Can Shares be sold in The Secondary Market?**

Shares can be bought and sold in the secondary market, also called the stock exchange. The sole purpose for the existence of the stock markets is trading in shares.

#### **What is the Liquidity of Shares?**

Shares are the most liquid financial instruments as long as there is a buyer for your shares on the stock exchange. Most shares belonging to the A Group on the BSE are among the most liquid. However, shares of some companies may not witness any trading for many days altogether. In such a case, you will not be able to sell your shares. So, the liquidity factor varies to a large extent.

#### **How is the Market Value of Shares Determined, and How Do I Keep Track of It?**

The market price of a share is determined by just about anything and everything. One investor may feel that the market price is lower than its real value, and another might think exactly the opposite! This creates an imbalance in the forces of demand and supply. So, the question is, what affects the investors' perception? The performance of the company and the state of the industry and the economy are considered reliable factors. But what do you do when Infosys declares a jump in its profits and the share price plummets? Besides the returns, it is this unpredictability factor that makes investing in shares all the more exciting. Fluctuations in the share prices make keeping track of them regularly utmost importance. All national and financial newspapers carry the daily quotes of all companies listed on the BSE and the NSE, and also at some of the regional stock exchanges. Moreover, with the emergence of the Net, it is now possible to get almost live stock quotes at the click of a mouse.

#### **What t The Mode of Holding Shares?**

Shares can be held in either physical or dematerialized (demat) form. In the demat form, instead of your holding physical share certificates, they are credited to your demat account with a depository participant. It is very much like holding cash at a bank. Some shares have come under the compulsory demat holding list, the list for which is available on the SEBI Websites: [wwiv.sebi.com](http://wwiv.sebi.com) or [www.sebi.gov.nic.in](http://www.sebi.gov.nic.in). Holding shares in demat form is much more convenient as it eliminates the issue of bad delivery, and also makes the delivery process quicker and easy to manage.

#### **Tax Implications**

While dividend is not taxable at the hands of the investor, capital gains are. When you sell y

our shares at a profit, it attracts a capital gains tax. Gains realized within one year of purchase of shares come under the short-term capital gains tax and are included in gross taxable income. If the duration is more than one year, it attracts long-term capital gains tax. The rate is 20 percent with indexation benefit, or a flat 10 percent. However, capital gains tax can be saved if the gains are invested in an IPO of a company with a lock-in period of 1 year. Alternatively, they can also be invested in capital gains bonds of the NHAI, NABARD, or Rural Electrification Corporation (REC). However, listed shares acquired after March 1, 2003, will not be subject to long-term capital gains tax.

## 2.5 Bonds

A Bond is a loan given by the buyer to the issuer of the instrument. Bonds can be issued by companies, financial institutions, or even the government. Over and above the scheduled interest payments as and when applicable, the holder of a bond is entitled to receive the par value of the instrument at the specified maturity date. Bonds can be broadly classified into

- a. Tax-Saving Bonds
- b. Regular Income Bonds Tax-Saving Bonds offer tax exemption up to a specified amount of investment. Examples are:
  - a. ICICI Infrastructure Bonds under Section 88 of the Income Tax Act, 1961
  - b. NABARD/ NHAI/REC Bonds under Section 54EC of the Income Tax Act, 1961
  - c. RBI Tax Relief Bonds

Regular-income bonds, as the name suggests, are meant to provide a stable source of income at regular, pre-determined intervals. Examples are:

  - a. Double Your Money Bond
  - b. step-Up Interest Bond
  - c. Retirement Bond
  - d. Encash Bond
  - e. Education Bonds
  - f. Money Multiplier Bonds/Deep Discount Bond

Similar instruments issued by companies are called debentures

### Credit Rating Symbols and What They Mean-

#### High Investment Grades

AA	Highest safety
A	High safety

#### Investment Grades

A	Adequate Safety
BBB	Moderate Safety
	Speculative Grade
BB	Inadequate Safety
B	High Risk
C	Substantial Risk
D	Default

### Investment Objectives

#### How Suitable Are Bonds for An Increase in My Investment?

Bonds are usually not suitable for an increase in your investment. However, in the rare situation where an investor buys bonds at a lower price just before a decline in interest rates, the resultant drop in rates leads to an increase in the price of the bond, thereby facilitating an increase in your investment. This is called capital appreciation.

### **Are Bonds Suitable for Regular Income?**

Yes, bonds are suitable for regular income purposes. Depending on the type of bond, an investor may receive interest semi-annually or even monthly, as is the case with monthly-income bonds. Depending on one's capacity to bear risk, one can opt for bonds issued by top-ranking corporates, or that of companies with lower credit ratings. Usually, bonds of top-rated corporates provide lower yield as compared to those issued by companies that are lower in the ratings.

### **To What Extent Do Bonds Protect Me Against: Inflation?**

This depends on the rate of inflation. In times of falling inflation, the real rate of return remains high, but bonds do not offer any protection if prices are rising. This is because they offer a pre-determined rate of interest.

### **Can I Borrow Against a Bond?**

Yes, one can borrow against bonds by pledging the same with a bank. However, borrowings depend on the credit rating of the instrument. For instance, it is easier to borrow against government bonds than against bonds issued by a company with a low credit rating.

### **Risk Considerations**

#### **How Assured Can I be of Getting My Full Investment Back?**

This depends on the nature of the bonds that have been purchased by the investor. Bonds may be secured or unsecured. Firstly, always check up the credit rating of the issuing company. Not only does this give you a working knowledge of the company's financial health, it also gives you an idea about the risk considerations of the instrument itself. This knowledge makes for a better understanding of the available choices, and helps you take informed decisions. In secured instruments, you have a right to the assets of the firm in case of default in payment. The principal depends on the company's credit rating and the financial strength. Selling in the secondary market has its own pitfalls. First, there is the liquidity problem which means that it is a tough job to find a buyer. Second even if you find a buyer, the prices may be at a steep discount to its intrinsic value. Third, you are subject to market forces and, hence, market risk. If interest rates are running high bond prices will be down and you may well end up incurring losses. On the other hand, Debentures are always secured.

#### **How Assured Is My Income?**

Interest payments depend on the health and credit rating of the issuer. Therefore, it is crucial to check the credit rating and financial health of the issuer before loosening up your purse strings. If you do invest in bonds issued by the top-rated corporates, rest assured that you will receive your payments on time.

#### **Are There Any Risks Unique to Bonds?**

In certain cases, the issuer has a call option mentioned in the prospectus. This means that after a certain period, the issuer has the option of redeeming the bonds before their maturity. In that case, while you will receive your principal and the interest accrued till that date, you might lose out on the interest that would have accrued on your sum in the future had the bond not been redeemed. Inflation and interest rate fluctuation affect buy, hold, and sell decisions in case of Bonds. Always remember that if interest rates go up, bond prices go down and vice-versa.

#### **Are Bonds rated for their credit quality?**

Yes, bonds are rated by specialized credit rating agencies. Credit rating agencies include CARE, CRISIL, ICRA, and Fitch. An AAA rating indicates the highest level of safety while D or FD indicates the least. The yield on a bond varies inversely with its credit (safety) rating. As mentioned earlier, the safer the instrument, the lower the rate of interest offered.

### **Buying, Selling, and Holding**

### **How Do I Buy a Bond?**

Investors can subscribe to primary issues; of corporations and Financial Institutions (FIs). It is common practice for FIs and corporates to raise funds for asset financing or capital expenditure through primary bond issues. Some bonds are also available in the secondary market.

### **What Is the Minimum Investment and The Range Of Investment for Bonds?**

The minimum investment for bonds can either be Rs 5,000 or Rs 10,000. However, this amount varies from issue to issue. There is no prescribed upper limit to your investment you can invest as little or as much as you desire, depending upon your risk perception. Bonds offer a fixed rate of interest. What Is the Duration of Bonds?

The duration of a bond issue: usually varies between 5 and 7 years.

### **Can Bonds Be Sold in The Secondary Market?**

If the bond is listed, it can be sold in the secondary debt market.

### **What Is the Liquidity of a Bond?**

Selling in the debt market is an obvious option. Some issues also offer what is known as the 'Put and Call option.' Under the Put option, the investor has the option to approach the issuing entity after a specified period (say, three years), and sell back the bond to the issuer. In the Call option, the company has the right to recall its debt obligation after a particular time frame. For instance, a company issues a bond at an interest rate of 12 percent. After 2 years, it found it could raise the same amount at 10 percent. The company can now exercise the Call option and recall its debt obligation provided it has declared so in the offer document. Similarly, an investor can exercise his Put option if interest rates have moved up and there are better options available in the market.

### **How Is the Market Value of a Bond Determined?**

The market value of a bond depends on a host of factors such as its yield at maturity, prevailing interest rates, and rating of the issuing entity. The price of a bond will fall if interest rates rise and vice-versa. A change in the credit rating of the issuer can lead to a change in the market price.

### **What Is the Mode of Holding Bonds?**

Bonds are most commonly held in the form of physical certificates. Of late, some bond issues provide the option of holding the instrument in demat form; interest payment may also be automatically credited to your bank account.

### **Tax Implications**

There are specific tax-saving bonds in the market that offer various concessions and tax breaks. Tax-free bonds offer tax relief under Section 88 of the Income Tax Act, of 1961. Interest income from bonds, up to a limit of Rs 12,000, is exempt under section 80L of the Income tax Act, plus Rs 3,000 exclusively for interest from government securities. However, if you sell bonds in the secondary market, any capital appreciation is subject to the Capital Gains Tax.

### **RBI Saving Bonds**

Some bonds have a special provision that allows the investor to save on tax. These are termed as Tax-Saving Bonds, and are widely used by individual investors as a tax-saving tool. Examples of such bonds are:

- a. Infrastructure Bonds under Section 88 of the Income Tax Act, 1961
- b. Capital Gains Bonds under Section 54EC of the Income Tax Act, 1961
- c. RBI Savings Bonds (erstwhile, RBI Relief Bonds)

### **What Are RBI Savings Bonds?**

RBI Savings Bonds are instruments that are issued by the RBI and currently have two options - one carries an 8 percent rate of interest per annum, which is taxable and the other one carries a 6.5

percent (tax-free) interest per annum. The interest is compounded half-yearly and there is no maximum limit for investment in these bonds. The maturity period of the 8 percent (taxable) bond is six years and that of the 6.5 percent (tax-free) bond is five years.

#### **Tax Implications**

In case of the 6.5 per cent RBI Savings Bond, the interest received is completely exempt from income tax as per the provisions of the Income Tax Act, 1961. But in case of the 8 percent RBI Savings Bond, the interest will be taxable under the Income-Tax Act, 1961 as applicable according to the relevant tax status of the bondholder. RBI Savings Bonds are exempt from Wealth Tax. However, there is no tax benefit on the amount invested in these bonds.

#### **Tax Savings Capital Gains Bonds**

Some bonds have a special provision that allows the investor to save on tax. These are termed as Tax-Saving Bonds and are widely used by individual investors as a tax-saving tool. Examples of such bonds are:

- a. Infrastructure Bonds under Section 88 of the Income Tax Act, 1961
- b. Capital Gains Bonds under Section 54EC of the Income Tax Act, 1961
- c. RBI Tax Relief Bonds

#### **What Are Tax Saving Capital Gains Bonds?**

Investments in bonds issued by the National Bank for Agriculture and Rural Development (NABARD), National Highway Authority of India (NHAI), and Rural Electrification Corporation (REC) are at present eligible for capital gains tax savings. Gains made out of a capital transfer need to be invested in the above bonds within six months of sale of capital assets in order for the proceeds of such sale to be exempt from capital gains tax. REC has recently come out with a 5-year issue at 8.5% with a put and a call option after 3 years. The rate is 10% in the cumulative interest option.

#### **Tax Implications**

The main feature of the NABARD/NHAI Bonds is that you can claim Capital Gains Tax benefits under Section 54EC of the Income Tax Act, 1961. If you have realized any long-term capital gains, you can avoid paying tax on it by investing the gains in the NABARD and NHAI bonds. Such gains have to be invested within 6 months of realizing the same, and the investment has to be locked up for a minimum period of 3 years. However, the interest that will accrue on this investment is taxable.

#### **Tax Savings Infrastructure Bonds**

Some bonds have a special provision that allows the investor to save on tax. These are termed as Tax-Saving Bonds, and are widely used by individual investors as a tax-saving tool. Examples of such bonds are

- a. Infrastructure Bonds under Section 88 of the Income Tax Act, 1961
- b. Capital Gains Bonds under Section 54EC of the Income Tax Act, 1961
- c. RBI Tax Relief Bonds

#### **What are Tax Saving Infrastructure Bonds?**

Infrastructure bonds are available through issues of ICICI Bank and IDBI, brought out in the name of ICICI Safety Bonds and IDBI Flexi bonds. These provide tax-saving benefits under Section 88 of the Income Tax Act, 1961, up to an investment of Rs. 1,00,000, subject to the bonds being held for a minimum period of three years from the date of allotment.

#### **Investing in Mutual Funds!**

Mutual funds are one of the most convenient ways to invest! Mutual funds allow you to invest your money like an expert without being an expert. Mutual funds are a way for you to outsource the whole “investing” headache to people who are experts at investing. Simply put, you give the money

you want to invest to people who are experts at investing. They will invest your money and make it grow & for this service, they charge you a small fee!

### **Why invest in mutual funds?**

Good investing generally requires a good knowledge of the market, economics, world politics and a lot of experience etc. Most people who want to invest their money, do not have the time to follow and learn all these things. For the “Mutual Funds” are the best option. You do not have to worry about anything when investing in Mutual Funds. You just have to take out the money for investing. The Mutual Fund managers are people who will do all the work for you and make your money grow.

The actual process of investing in mutual funds is also quite easy. You do not have to do anything except write a cheque and give it to the mutual fund company. Besides this, certain mutual funds will help you in your financial planning. Mutual funds have some risks associated with them. But the risk is not very high. It is generally considered to be a moderately safe investment. However, mutual funds can produce pretty good returns

One of the best things about mutual funds is that they are liquid. Mutual funds are very liquid investments. The process of reclaiming your money in most mutual funds will take a maximum time of 23 days.

### **2.6 Self-Check Questions**

- 2.6.1 Name any two Investments that include the lowest risk.
- 2.6.2 What is the Minimum Investment for A Company/NBFC Fixed Deposit?
- 2.6.3 Is there any time duration for shares?

### **2.7 Short Questions**

1. What are Bonds?
2. What is the Mode of Holding a Bank FD?

### **2.8 Long Questions**

1. Write Tax Implication of Public Provident Fund.
2. Write down the procedure of Buying, Selling, and Holding Shares.
3. Discuss the Investment objectives of Bonds.

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### **2.10 Answer to Self-Check Questions**

- 2.6.1 Bank Fixed Deposits and Provident Fund.
- 2.6.2 Minimum investment in a Company/NBFC Fixed deposit varies from company to company. Normally, the minimum investment is Rs 5,000.
- 2.6.3 No there is no specified duration for shares.





**MONEY MARKET INSTRUMENTS**

**STRUCTURE**

- 3.1 Concept of Money Market Instruments
- 3.2 Money Market Instruments
  - 3.2.1 Treasury Bills
  - 3.2.2 Repurchase Agreement
  - 3.2.3 Commercial Paper
  - 3.2.4 Certificate of Deposit
  - 3.2.5 Banker's Acceptance
  - 3.2.6 Negotiable Certificate of Deposit
  - 3.2.7 Tax Exempt Bond
- 3.3 Money Market Account
- 3.4 Money Market Index
- 3.5 Self-Check Questions
- 3.6 Short Questions
- 3.7 Long Questions
- 3.8 References
- 3.9 Answer to Self-Check Questions

**3.1 Money Market Instruments**

Money market means market where money or its equivalent can be traded. Money is synonym of liquidity. Money market consists of financial institutions and dealers in money or credit who wish to generate liquidity. It is better known as a place where large institutions and government manage their short-term cash needs. For generation of liquidity, short-term borrowing and lending is done by these financial institutions and dealers. Money Market is part of financial market where instruments with high liquidity and very short-term maturities are traded.

Due to highly liquid nature of securities and their short -erm maturities, money market is treated as a safe place. Money market instruments are generally characterized by a high degree of safety of principal and are most commonly issued in units of large amounts. Maturities range from one day to one year; the most common are three months or less. Active secondary markets for most of the instruments allow them to be sold prior to maturity. Unlike organized securities or commodities exchanges, the money market has no specific location. Available from financial institutions, money markets give the smaller investor the opportunity to get in on treasury securities. The institution buys a variety of treasury securities with the money you invest. The rate of return changes daily, and services such as check writing may be offered.

The major participants in the money market are commercial banks, governments, corporations, government-sponsored enterprises, money market mutual funds; futures market exchanges, brokers and dealers. Money Market is a market where Short-term obligations such as a treasury bill, commercial papers and banker's acceptances are bought and sold.

**Benefits and functions of Money Market:**

Money markets exist to facilitate efficient transfer of short-term funds between holders and borrowers of cash assets. For the lender/investor, it provides a good return on their funds. For the borrower, it enables rapid and relatively inexpensive acquisition of cash to cover short-term liabilities.

One of the primary functions of money market is to provide focal point for RBI's intervention for influencing liquidity and general levels of interest rates in the economy. RBI being the main constituent in the money market aims at ensuring that liquidity and short-term interest rates are consistent with the monetary policy objectives.

#### **Money Market & Capital Market:**

Money Market is a place for short term lending and borrowing, typically within a year. It deals in short term debt financing and investments. On the other hand, Capital Market refers to stock market, which refers to trading in shares and bonds of companies on recognized stock exchanges. Individual players cannot invest in money market as the value of investments is large, on the other hand, in capital market, anybody can make investments through a broker. Stock Market is associated with high risk and high return as against money market which is more secure. Further, in case of money market, deals are transacted on phone or through electronic systems as against capital market where trading is through recognized stock exchanges.

#### **Money Market Futures and Options:**

Active trading in money market futures and options occurs on number of commodities exchanges. They function in the similar manner like any other futures and options.

#### **3.2 Money Market Instruments:**

Investment in money market is done through money market instruments. Money market instrument meets short term requirements of the borrowers and provides liquidity to the lenders. Common Money Market Instruments are as follows:

##### **3.2.1 Treasury Bills (T-Bills):**

Treasury Bills, one of the safest money market instruments, are short-term borrowing instruments of the Central Government of the Country issued through the Central Bank (RBI in India). They are zero-risk instruments, and hence the returns are not so attractive. It is available both in primary market as well as secondary market. It is a promise to pay a said sum after a specified period. T-bills are short-term securities that mature in one year or less from their issue date. They are issued with three-month, six-month and one-year maturity periods. The Central Government Issues T- Bills at a price less than their face value (par value). They are issued with a promise to pay full face value on maturity. So, when the T-Bills mature, the government pays the holder its face value. The difference between the purchase price and the maturity value is the interest income earned by the purchaser of the instrument.

T-Bills are issued through a bidding process at auctions. The bid can be prepared either competitively or non-competitively, In the second type of bidding, return required is not specified and the one determined at the auction is received on maturity. Whereas, in case of competitive bidding, the return required on maturity is specified in the bid. In case the return specified is too high then the T-Bill might not be issued to the bidder. At present, the Government of India issues three types of treasury bills through auctions, namely, 91-day, 182-day and 364-day. There are no treasury bills issued by State Governments. Treasury bills are available for a minimum amount of Rs.2,5K and in its multiples. While 91-day T-bills are auctioned every week on Wednesdays, 182-day and 364-day T-bills are auctioned every alternate week on Wednesdays. The Reserve Bank of India issues a quarterly calendar of T-bill auctions which is available at the Banks' website. It also announces the exact dates of auction, the amount to be auctioned and payment dates by issuing press releases prior to every auction. Payment by allottees at the auction is required to be made by debit to their/ custodian's current account.

T-bills auctions are held on the Negotiated Dealing System (NDS) and the members electronically submit their bids on the system. NDS is an electronic platform for facilitating dealing in

government Securities and Money Market Instruments. RBI issues these instruments to absorb liquidity from the market by contracting the money supply. In banking terms, this is called Reverse Repurchase (Reverse Repo). On the other hand, when RBI purchases back these instruments at a specified date mentioned at the time of transaction, liquidity is infused in the market. This is called Repo (Repurchase) transaction.

### **3.2.2 Repurchase Agreements:**

Repurchase transactions, called Repo or Reverse Repo are transactions or short-term loans in which two parties agree to sell and repurchase the same security. They are usually used for overnight borrowing. Repo/Reverse Repo transactions can be done only between the parties approved by RBI and in RBI approved securities viz. GOI and State government securities, T-Bills, PSU Bonds, FI Bonds, Corporate Bonds etc.

Under repurchase agreement the seller sells specified securities with an agreement to repurchase the same at a mutually decided future date and price, Similarly, the buyer purchases the securities with an agreement to resell the same to the seller on an agreed date at a predetermined price. Such a transaction is called a Repo when viewed from the perspective of the seller of the securities and Reverse Repo when viewed from the perspective of the buyer of the securities. Thus, whether a given agreement is termed as a Repo or Reverse Repo depends on which party initiated the transaction. The lender or buyer in a Repo is entitled to receive compensation for use of funds provided to the counterparty. Effectively the seller of the security borrows money for a period of time (Repo period) at a particular rate of interest mutually agreed with the buyer of the security who has lent the funds to the seller. The rate of interest agreed upon is called the Repo rate. The Repo rate is negotiated by the counterparties independently of the coupon rate or rates of the underlying securities and is influenced by overall money market conditions.

The main players in this market are all institutional players like banks, primary dealers like PNB Gilts Limited, financial institutions, mutual funds, insurance companies etc. allowed to operate a SGL with the Reserve Bank of India. Further RBI also operates daily repo/ reverse repo auctions to provide a benchmark rate in the markets as well as managing in the liquidity in the system. RBI sucks or injects liquidity in the banking system by daily repo/ reverse operations.

### **3.2.3 Commercial Papers:**

Commercial paper is a low-cost alternative to bank loans. It is a short term unsecured promissory note issued by corporates and financial institutions at a discounted value on face value. They are usually issued with fixed maturity between one to 270 days and for financing of accounts receivables, inventories and meeting short term liabilities. Say, for example, a company has receivables of Rs 1 lacs with credit period 6 months. It will not be able to liquidate; its receivables before 6 months. The company is in need of funds. It can issue commercial papers in form of unsecured promissory notes at discount of 10% on face value of Rs 1 lacs to be matured after 6 months. The company has strong credit rating and finds buyers easily. The company is able to liquidate its receivables immediately and the buyer is able to earn interest of Rs 10K over a period of 6 months.

They yield higher returns as compared to T-Bills as they are less secure in comparison to these bills. However, chances of default are almost negligible but are not zero risk instruments. Commercial paper being an instrument not backed by any collateral, only firms with high quality credit ratings will find buyers easily without offering any substantial discounts. They are issued by corporates to impart flexibility in raising working capital resources at market determined rates. Commercial Papers are actively traded in the secondary market since they are issued in the form of promissory notes and are freely transferable in demat form.

### **3.2.4 Certificate of Deposit:**

It is a short-term borrowing more like a bank term deposit account. It is a promissory note issued by a bank in form of a certificate entitling the bearer to receive interest. The certificate bears the maturity date, the fixed rate of interest and the value. It can be issued in any denomination. They are stamped and transferred by endorsement. Its term generally ranges from three months to five years and restricts the holders to withdraw funds on demand. However, on payment of certain penalty the money can be withdrawn on demand also. The returns on certificate of deposits are higher than T-Bills because it assumes higher level of risk.

While buying Certificate of Deposit, return method should be seen. Returns can be based on Annual Percentage Yield (APY) or Annual Percentage Rate (APR). In APY, interest earned is based on compounded interest calculation. However, in APR method, simple interest calculation is done to generate the return. Accordingly, if the interest is paid annually, equal return is generated by both APY and APR methods. However, if interest is paid more than once in a year, it is beneficial to opt APY over APR.

### **3.2.5 Banker's Acceptance:**

It is a short-term credit investment created by a non-financial firm and guaranteed by a bank to make payment. It is simply a bill of exchange drawn by a person and accepted by a bank. It is a buyer's promise to pay to the seller a certain specified amount at certain date. The same is guaranteed by the banker of the buyer in exchange for a claim on the goods as collateral. The person drawing the bill must have a good credit rating otherwise the Banker's Acceptance will not be tradable. The most common term for these instruments is 90 days. However, they can vary from 30 days to 180 days. For corporations, it acts as a negotiable time draft for financing imports, exports and other transactions in goods and is highly useful when the credit worthiness of the foreign trade party is unknown. The seller need not hold it until maturity and can sell off the same in secondary market at discount from the face value to liquidate its receivables.

### **3.2.6 Negotiable Certificates of Deposit (NCD)**

NCD's are like fixed deposits except they are bearer documents. They offer a market related rate of interest and are completely liquid because they can be negotiated during the term of the deposit. Most NCD's have a term of less than one year. They usually offer a rate of return slightly higher than banker's acceptances which makes them extremely popular instruments.

### **3.2.7 Tax-Exempt Bonds**

Often referred to as municipal bonds, tax-exempt bonds represent state and local government debt. A City, town, or village and also states, territories, and housing authorities, port authorities, and local government agencies may issue these bonds. Interest earned is exempt from income taxes and from state and local income taxes if bonds issued are from your state- or city. Interest rates are determined by the general level of interest rates and by the credit rating of the issuer. The seller of these bonds has tables showing you what the tax-exempt yields of these bonds are equivalent to in taxable yield for your tax bracket. These investments include corporate bonds and corporate stocks. Higher investment risk and lower purchasing power risk are represented by these investment alternatives.

An individual, investor cannot invest in majority of the Money Market Instruments, hence for retail market, money market instruments are repackaged into Money Market Funds. A money market fund is an investment fund that invests in low-risk and low-return bucket of securities viz money market instruments. It is like a mutual fund, except the fact mutual funds cater to capital market and money market funds cater to money market. Money Market funds can be categorized as taxable funds non-taxable funds.

## Investment in Money Market

Direct Investment in  
Money Market  
Instruments

Investment in Parking money in  
Money Market Money Market  
Funds Account

There are two modes of investment in money market viz Direct Investment in Money instruments and investment in Money Market Funds.

### 3.3 Money Market Account:

It can be opened at any bank in a similar fashion as a savings account. However, it is less liquid as compared to a regular savings account. It is a low-risk account where the money parked by the investor is used by the bank for investing in money market instruments and interest is earned by the account holder for allowing bank to make such an investment. Interest is usually compounded daily and paid monthly. There are two types of money market accounts:

- Money Market Transactional Account: By opening such type of account, the account holder can enter into transactions also besides investments, although the numbers of transactions are limited.
- Money Market Investor Account: By opening such type of account, the account holder can only make investments with no transactions.

### 3.4 Money Market Index:

To decide how much and where to invest in the money market an investor will refer to the Money Market Index. It provides information about the prevailing market rates. There are various methods of identifying a Money Market Index:

- Smart Monet Market Index It is a composite index based on the intra-day price pattern of the money market instruments.
- Salomon Smith Barney's World Money Market Index- Money market instruments are evaluated in various world currencies and a weighted average is calculated. This helps in determining the index.
- Banker's Acceptance Rate: As discussed above, Banker's Acceptance is a money market instrument. The prevailing market rate of this instrument i.e., the rate at which the banker's acceptance is traded in the secondary market, is also used as a money market index.
- LIBOR/MOBOR-London Inter-Bank Offered Rate/ Mumbai Inter-Bank Offered Rate also serves as a good money market index. This is the interest rate at which banks borrow funds from other banks.

### 3.5 Self-Check Questions

3.5.1 Money Market is a place for \_\_\_ lending and borrowing typically within a year.

3.5.2 Treasury Bills are issued by central govt. through \_\_\_\_\_.

### 3.6 Short Questions

1. What are Tax-Exempted Bonds?
2. What are the benefits of Money Market?

### 3.7 Long Questions

1. Give overview of Money Market and Capital Market.
2. Explain Money Market Instruments in detail.

### 3.8 References

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### **3.9 Answer to Self-Check Questions**

3.5.1 Short term.

3.5.2 Central bank (RBI).

MUTUAL

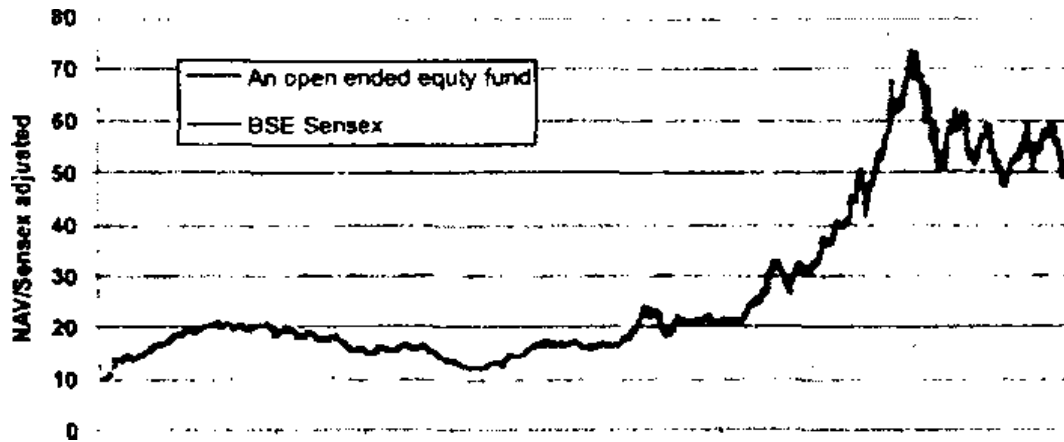
STRUCTURE

- 4.1 Mutual Funds
- 4.2 Mutual Fund Schemes
- 4.3 Life Insurance
- 4.4 Real Estate
- 4.5 Precious objects & some other investment options
- 4.6 Self-Check Questions
- 4.7 Short Questions
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4.1 Mutual Funds

Mutual funds are investment companies that use the funds from investors to invest in other companies or investment alternatives. They have the advantage of professional management, diversification, convenience and special services such as check writing and telephone account service. It is generally easy to sell mutual fund shares although you run the risk of needing to sell and being forced to take the price offered. Mutual funds come in various types, allowing you to choose those funds with objectives which most closely match your own personal investment objectives.

An Equity Mutual fund us BSE Sensex



Date Sep-94 May-9S Dec-96 Aug-96 Jul-97 Mar-98 Nov-98 Jun-99 Jan-00 Sep-00

A load mutual fund is one that has sales charge or commission attached. The fee is a percentage of the initial investment. Generally, mutual funds sold through brokers are load funds while funds sold directly to the public are no-load or low-load. As an investor, you need to decide whether you want to take the time to research prospective mutual funds yourself or pay the commission and have a broker who will do that for you. All funds have annual management fees attached.

#### **4.2 Mutual Fund Schemes may be Classified based on its Structure and its Investment Objective.**

##### **1. By Structure a. Open-Ended Funds**

An open-ended mutual fund is one whose units can be freely sold and repurchased by the investors. Such funds are not listed on bourses since the Asset Management Companies (AMCs) provide the facility for buyback of units from unit-holders either at the NAV, or NAV-linked prices. Instant liquidity is the USP of open-ended funds: you can invest in or redeem your units at will in a matter of 2-3 days. In the event of volatile markets, open-ended funds are also suitable for investment appreciation in the short term.

If you expect the interest rates to fall, you park your money in an open-ended debt fund. Then, when the prices of the underlying securities rise, leading to an appreciation in your fund's NAV, you make a killing by selling it off. On the other hand, if you expect the Bombay Stock Exchange Sensitivity Index-the Sensex-to gain in the short term, you can pick up the right open-ended equity fund whose portfolio has scrips likely to gain from the rally and sell it off once its NAV goes up.

##### **Investment Objectives**

##### **How Suitable Are Open-Ended Funds for An Increase in My Investment?**

Open-ended equity funds are, indeed, suitable for an increase or appreciation in your investment. Again, your choice of an equity fund can vary, depending on your risk appetite. Sector-specific funds like Information Technology or Pharma funds invest only in companies of that particular sector and are riskier. At the same time, if the scrips of a particular sector are doing well, the returns from investing in a sector-specific mutual fund may prove to be worth the risk.

##### **Are Open-Ended Mutual Funds Suitable for Regular Income?**

An open-ended debt fund is best suited for income. Debt funds generally give you an option of receiving dividends on a monthly, quarterly, half-yearly or on annual basis.

##### **To what Extent Do Open-Ended Funds Protect Against Inflation?**

Open-Ended Mutual Funds provide a fair amount of protection against inflation. But funds with an equity portfolio-growth provide better protection than debt funds because equities, over the long term, provide the best means of beating inflation. Moreover, long-term capital gains are taxed after indexing for inflation.

##### **Borrow Against Open-Ended Mutual Funds?**

Some banks offer loans against your mutual funds. Different banks have their criteria on which they approve the loans.

##### **Risk Considerations**

##### **Safety of principal amount**

One cannot be completely sure of getting your full investment back. It depends on the quality and the kind of portfolio you invest in. In fact, in an equity fund, there are no guarantees at all since the fund trades in the secondary markets, and a crash there could result in a major part of your



investment coming to nothing. However, in debt funds, the credit ratings of the constituents of the portfolio are a good indicator of how safe the fund, is and, thus, your principal amount is. For instance, if the portfolio consists of mostly government securities, it is the safest.

#### **How Assured Is Income?**

It again depends on the quality of the portfolio of the mutual fund you invest in. The returns from your fund are related to the market. In the simplest sense if the stock market or the debt market is performing well you can expect to receive a good return on your investment in the fund. Some funds give you a dividend or growth option. Also, income is more assured in the case of debt funds as compared to equity funds.

#### **Are There Any Risks Unique to Investing in An Open-Ended Fund?**

Since Open-Ended Mutual Funds invest in scrips in the secondary market, volatility in their portfolio reflects on the returns. An open-end fund may be subject to inflows at one time or sudden redemptions which leads to a spurt or a fall in the NAV, thus affecting your returns. Also, the value of the scrips in the portfolio can fluctuate due to various market forces, thus affecting the returns of the fund.

#### **Are Open-Ended Mutual Funds rated for their credit quality?**

Open-ended equity funds are not credit-rated. However, the holdings of debt funds are. The portfolio list of debt funds provides the details of all the instruments held by the fund and their respective credit ratings.

#### **Buying, Selling, and Holding**

#### **How Do I Buy an Open-Ended Fund?**

Units of Mutual Funds can be purchased through investment service centers of the Asset Management Company (AMC) or the distributors. Also, some AMCs offer units through NSE Brokers also. The price per unit of a mutual fund is linked to the Net Asset Value (NAV) of the fund.

#### **What Is the Minimum Investment and The Range of Investment For Open-Ended Mutual Funds?**

Minimum investment in an open-ended mutual fund varies between Rs 100 and Rs 5,000. Some open-ended funds charge an entry load, i.e., a sales charge, expressed as a percentage of the NAV, is deducted from the amount invested. Also, the AMC gives you the option to invest through SIP. In a Systematic Investment Plan, you invest a fixed portion every fixed period to take advantage of the concept of rupee cost averaging where you buy more units when the prices are down and fewer units when the prices are high. This reduces your average cost of purchase of the units.

#### **What Is the Duration of Open-Ended Mutual Funds?**

Open-ended funds, by definition, have no time duration. They can be purchased or redeemed at any time.

#### **Can Open-Ended Mutual Funds Be Traded in The Secondary Market?**

No, open-ended mutual funds cannot be sold or purchased in the secondary market. They are directly repurchased by the AMC. However, they can be bought from certain brokers who deal in them.

#### **What Is the Liquidity of Open-Ended Mutual Funds?**

Open-ended funds provide instant liquidity as mutual funds redeem units daily, either at NAV or at NAV plus a small exit load. There is a concept of Contingent Deferred Sales Charge where the exit load is charged only if the redemption takes place before a specified period or above a specified amount. A majority of open-ended mutual funds allow switching among the various funds of the same AMC without any load. You generally get your redemption requests processed promptly, and receive the cheque in 3-4 days. However, in the case of Equity Linked Savings Schemes (ELSS), there is a

lock-in period of three years.

### **How Is the Market Value of Open-Ended Mutual Funds Determined**

Although the units of open-ended mutual funds are not traded in the secondary market, their sale and repurchase price is a function of the NAV of the fund. If the value of the portfolio of the fund rises, so will the NAV and, hence, the market value of the open-ended mutual fund. Thus, the NAV is the most important information an investor must seek. And this information is available through newspapers where it is given daily, the AMC themselves, the Internet, and also through the periodic emails that your AMC is supposed to send you. So, you can judge the market value of your investment by tracking the movement of the NAV.

### **What Is the Mode of Holding Open-Ended Mutual Funds?**

When you subscribe to an open-ended mutual fund, you receive an account statement stating your ownership of the number of units in the mutual fund. Thereafter, you get an account statement for every transaction you make. In some cases, certificates are also issued. Your AMC may give you the option of holding the certificates in the physical form, or you can receive these certificates in the dematerialized (demat) form, i.e., the certificates are not physically issued to you; instead, they are credited to your demat account.

### **Tax Implications**

Dividend paid by mutual funds is fully tax-exempt at the hands of the investor, although, debt funds have to pay a 12.5 percent dividend distribution tax. On redemption of any units held for more than a year, your realization will attract a long-term capital gains tax of 20 percent plus a surcharge after indexing for inflation, or at a flat rate of 10 percent. If redeemed before a year it will be termed as short-term capital gain and taxed along with your other income. However, you can save tax by investing in Equity-Linked Savings Scheme (ELSS) under Section 88 of the Income Tax Act, 1961, according to which 20 percent of the amount invested in ELSS can be deducted from your tax liability subject to a maximum investment of Rs 10,000 per year. Note: Sections 54EA and 54EB of the Income Tax Act, 1961, which provided for saving tax on capital gains by investing the proceeds in specified instruments have been withdrawn in Budget 2000\*01. We also have section 54EC where the investment of capital gains in bonds of NHAI/NABARD/ REC are exempt from tax and also section 54ED where the same investment in an Initial Public Offering (IPO) will not attract any capital gains tax.

### **b. Close-Ended Funds**

Closed-ended mutual funds have a fixed number of units, and a fixed tenure (3, 5, 10, or 15 years), after which their units are redeemed or they are made open-ended. These funds have various objectives: generating steady income by investing in debt instruments, capital appreciation by investing in equities, or both by making an equal allocation of the corpus in debt and equity instruments.

### **Investment Objectives**

#### **How Suitable are Closed-Ended Funds for an Increase in My Investment?**

Since units of closed-ended funds rise and fall in the market. Like any other stock, they are well suited for an increase in your investment. However, a mutual fund is more influenced by the value of its own portfolio than any other factor. Units of an equity fund are more frequently traded than a debt fund. Also, the NAV of an equity fund rises and falls at a much faster pace. On the other hand, an equity fund provides healthy appreciation in NAV in the long term.

#### **Are Closed-Ended Mutual Funds Suitable for Regular Income?**

Closed-ended debt funds, with their conservative investment approach, are best suited for income. These funds declare dividends annually or semi-annually

### **To What Extent Do Closed-Ended Funds Protect Me Against Inflation?**

With stocks being better than bonds in providing returns on a long-term basis, an equity closed-ended fund is better equipped to guard your investment against inflation in the long run.

### **Risk Considerations Safety of the principal**

One cannot be completely sure of getting your full investment back. Depending on their investment objective and underlying portfolio, closed-ended funds can be very volatile or be fairly stable. Hence, your principal is not assured.

### **How Assured Is My Income?**

It depends on the portfolio of your closed-ended fund. A portfolio of debt instruments or shares of some blue-chip companies may provide regular dividends.

### **Are There any Risks Unique to Investing in a Closed-End Fund?**

The value of a close-ended mutual fund can fluctuate drastically. So, your units can trade at a hefty discount to their NAV, thus depriving you of realizing the true value of your units. This is because although closed-ended funds are, gene-rally, listed, there is no liquidity. Investors must buy a fund if its portfolio is good, units are trading at a good discount, and the stock market is poised to rise.

### **Are Closed-Ended Mutual Funds rated for their credit quality?**

Closed-end funds are not rated. However, it is important to note that the holdings of a debt fund are generally rated, and this serves as an indicator of the safety of the portfolio.

### **Buying, Selling, and Holding**

#### **How Do I Buy a Closed-Ended Fund?**

Closed-ended funds tap the market with their initial offers. Alternatively, if the funds are listed, the units can also be; picked up from the secondary market.

### **What is The Minimum Investment and The Range of Investment for Closed-Ended Mutual Funds?**

Minimum investment in closed-ended mutual funds varies and normally ranges between Rs 2,000 and Rs 5,000. There is no maximum limit of investment.

### **What Is the Duration of Closed-Ended Mutual Funds?**

A closed-end fund is, typically, a five-year fund. However, the duration period may vary between 3 and 15 years.

### **Can Closed-Ended Mutual Funds be Traded in the Secondary Market?**

Yes, closed-ended funds are listed on the stock exchanges and, thus, can be traded in the secondary market. However, the liquidity of closed-ended funds is poor, and they trade on a hefty discount to their NAV in the secondary market.

### **What is The Liquidity of Closed-Ended Mutual Funds?**

The Indian stock markets lack depth and, thus, the closed-ended mutual funds are illiquid where they are listed and traded with a heavy discount to their NAVs. Besides listing, some mutual funds also offer repurchase options in their closed-ended funds at an NAV-linked price after a certain lock-in period.

### **How is the Market Value of Closed-Ended Mutual Funds Determined, and How do I Keep Track of It?**

The market price of a closed-ended fund is a direct function of its NAV. The higher the NAV, the higher the market price and vice-versa. However, units of a closed-ended fund always trade at a discount to their NAV. For instance, if the NAV of a fund is Rs 13, units may be trading at around Rs 11. However, units of assured return funds are an exception. Their unit price on the bourses does not chase the NAV; it chases the assured return.

The NAV is the most important information an investor must seek while investing in a closed-ended mutual fund. And this information is available through various newspapers, the AMC themselves, the Internet, and also through the periodic emails that your AMC is supposed to send to you.

### **What Is the Mode of Holding Closed-Ended Mutual Funds?**

When you subscribe to a closed-ended mutual fund, you receive either physical certificates or the account number if they are held in the demat form.

### **Tax Implications**

While dividend paid on open-ended mutual funds is fully tax-exempt, on redemption or sale of units, your realization will attract a long-term capital gains tax of 20 percent-plus surcharge after indexing for inflation, or at a flat rate of 10 percent. However, you can save tax by investing in an Equity-Linked Savings Scheme (ELSS) under Section 88 of the Income Tax Act, 1961, according to which 20 percent of the amount invested which has a lock-in period of 3 years be deducted from your tax liability subject to a maximum investment of Rs 10,000 per year.

#### **a. Interval Funds**

Interval funds combine the features of open-ended and close-ended schemes. They are open for sale or redemption during pre-determined intervals at NAV-related prices.

### **2. By Investment Objective**

#### **a. Growth Funds**

The aim of growth funds is to provide capital appreciation over the medium to long-term. Such schemes normally invest a majority of their corpus in equities. It has been proven that returns from stocks have outperformed most other kinds of investments held over the long term. Growth schemes are ideal for investors who have a long-term outlook seeking growth over some time.

#### **b. Income Funds**

Income funds aim to provide regular and steady income to investors. Such schemes generally invest in fixed-income securities such as bonds, corporate debentures, and Government securities. Income Funds are an idea for capital stability and regular income.

#### **c. Balanced Funds**

The aim of balanced funds is to provide both growth and regular income. Such schemes periodically distribute a part of their earning and invest both in equities and fixed-income securities in the proportion indicated in their offer documents. In a rising stock market, the NAV of these schemes may not normally keep pace, or fall equally when the market falls. These are ideal for investors looking for a combination of income and moderate growth.

#### **d. Money Market Funds**

The aim of money market funds is to provide easy liquidity, preservation of capital, and moderate income. These schemes generally invest in safer short-term instruments such as treasury bills, certificates of deposit, commercial paper and inter-bank call money. Returns on these schemes may fluctuate depending upon the interest rates prevailing in the market. These are ideal for Corporate and individual investors as a means to park their surplus funds for short periods.

#### **e. Load Funds**

A Load Fund is one that charges a commission for entry or exit. That is, each time you buy or sell units in the fund, a commission will be payable. Typically, entry and exit loads range from 1% to 2%. It could be worth paying the load, if the fund has a good performance history.

#### **f. No-Load Funds**

A No-Load Fund does not charge a commission for entry or exit. That is, no commission is payable on purchase or sale of units in the fund. The advantage of a no-load fund is that the entire

corpus is put to work.

### **3- Special Schemes**

#### **a. Industry Specific Schemes**

Industry-specific schemes invest only in the industries specified in the offer document. The investment of these funds is limited to specific industries like InfoTech, FMCG, and Pharmaceuticals etc.

#### **b. Index Schemes**

Index Funds attempt to replicate the performance of a particular index such as the BSE Sensex or the NSE 50.

#### **c. Sectoral Schemes**

Sectoral Funds are those, which invest exclusively in a specified industry or a group of industries or various segments such as 'A' Group shares or initial public offerings.

### **4.3 Life Insurance**

A life insurance policy is a contract between an individual (termed as insured) and an insurance company (insurer) to pay the insured, or his nominated heirs, a specified sum of money on the happening of an event.

The event could be the expiry of the insurance policy or the death of the insured before the expiry (date of maturity) of the policy as per the terms of the policy. In a simple example, a person takes an insurance policy and nominates his wife as the beneficiary. On the death of this person, his wife gets the amount for which the life insurance policy was purchased. There are many variants of a life insurance policy:

#### **1. Whole Life Assurance Plans**

These are low-cost insurance plans where the sum assured is payable on the death of the insured

#### **2. Endowment Assurance Plans**

Under these plans, the sum assured is pay-able on the maturity of the policy or in case of death of the insured individual before maturity of the policy.

#### **3. Term Assurance Plans**

Under these plans, the sum assured is payable only on the death of the insured individual before the expiry of the policy.

#### **4. Pension Plans**

These plans provide for either immediate or deferred pension for life. The pension payments are made till the death of the annuitant (person who has a pension plan) unless the policy has provision of a guaranteed period. Life Insurance Corporation (LIC) is a government company. Till recently, the LIC was the sole provider of life insurance policies to the Indian public. However, the Insurance Regulatory & Development Authority (IRDA) has now issued licenses to a few private companies to conduct the business of life insurance.

### **Investment Objectives**

#### **How Suitable is a Life Insurance Policy for an Increase in Investment?**

The role of a life insurance policy is to financially cover the risk of death. If an individual has dependents who will incur financial loss due to his/her death, then he/she should avail of life insurance policies. However, life insurance is often utilized for purposes like provision for old age (pension plans), children's education, savings alternative, or as a tax-saving alternative.

#### **Are Life Insurance Plans Suitable for Regular Income?**

Not in general, but annuity or pension plans are often good for the purpose. For more information.

### **Do Life Insurance Policies Protect Me Against Inflation?**

No, life insurance plans do not offer any protection against inflation.

### **Can I Borrow Against a Life Insurance Plan?**

Yes, loans can be raised on the sole security of a policy that has acquired loan value. Besides, a life insurance policy is also generally accepted as security even for a commercial loan.

### **Risk Considerations**

#### **Safety of principal**

Companies operating in the Life Insurance sector are governed by strict regulations and are among the safest places to put your money in. You can be assured of getting your investment back. LIC is a government company, and all players in this sector are regulated by the IRDA.

#### **How Assured Is Income**

Your income is assured. Insurance companies are, in general, safe avenues for putting your money in.

#### **Are There Any Risks Unique to Life Insurance Plans?**

There are no risks associated with putting your money in life insurance plans. In India, psychological factors affect the buy and sell decisions of Life Insurance Plans to a large extent. Although Insurance schemes are meant mainly to minimize risk, most view it as an avenue for long-term saving and tax savings. This viewpoint depends on the policy and the government's tax incentives.

#### **Are Life Insurance Plans rated for their credit quality?**

No, neither insurance companies nor their products are commercially rated.

#### **Buying, Selling and Holding; How do I buy an Insurance Policy?**

Insurance policies are sold through insurance agents. You can contact an insurance agent or any branch of the LIC for details. Regular payments (called premiums) have to be made to the company to maintain an insurance policy. In some cases, a lump-sum payment suffices. The normal procedure entails filling up an application form and undergoing a medical examination (depending on the policy amount and your age). On submission of a report by the insurance agent, the company assesses the risk, accepts the proposal, and issues the policy.

#### **What is the Minimum Investment on A Life Insurance Plan?**

The minimum investment on a policy depends upon the type of policy, duration, the premium to be paid, and other factors.

#### **What Is the Duration of An Insurance Policy?**

There is no one standard duration for all insurance policies. The duration of the policy depends on the specific policy you are applying for.

#### **Can Insurance Policies Be Sold in The Secondary Market?**

No, insurance policies cannot be sold in the secondary market. However, they can be transferred to another person through an assignment of the policy.

#### **What Is the Liquidity of Life Insurance Policies?**

Usually, life insurance policies do not offer liquidity. These are meant to be long-term investments of a specific nature i.e., financial cover for dependents of the insured in the event of his/her death. However, one can opt for early withdrawal from an insurance policy, albeit with penalties in certain cases.

#### **How Is the Market Value of a Life Insurance Policy Determined?**

Since there is no secondary market for a life insurance policy, the question of the market value of a life insurance policy does not arise. However, as mentioned earlier, a policy can be used to pledge against loans.

### **What Is the Mode of Holding a Life Insurance Policy?**

Life insurance policies are held in the form of physical Policy Certificates that are issued by the insuring company.

### **Tax Implications**

Life insurance policies are eligible for tax benefits as per the provisions of the Income Tax Act, 1961: 20 percent of the premium paid, up to Rs 60,000, qualifies for tax rebate under Section 88 of the Income Tax Act, 1961. Rebate is calculated @ 30 percent if you are a salaried employee drawing a gross annual salary up to Rs 1,00,000 per annum. Tax deduction under Section 80 CCC of the Income Tax Act, 1961, is applicable for the 'Jeevan Suraksha' pension plan from LIC up to a maximum of Rs 10,000 per annum. For additional information on tax advantages available for specific insurance plans.

### **4.4 Real Estate**

This investment is taken by a large number of people to hedge against inflation rates. Land & House Property is also called real estate. Real estate represents a very attractive investment proposition for the following reasons:

1. Capital appreciation of real estate is, in general, very high. Real estate in most of the towns in India has appreciated ten times or so in the last 10-15 years.
2. Loans are available from various quarters for buying or constructing a residential property.
3. For wealth purposes, the value of a residential property is reckoned at its historical cost and not at its present market price.
4. Interest on loans taken for buying or constructing a residential home is tax deductible within certain limits.
5. Ownership of a residential property provides psychological satisfaction.

Due to the above formidable advantages, a residential property represents the most important part of the portfolio for most of the investors. But the return of these investments depends on the following rules:

- The holding period of the property is important.
- A person who does not have enough time to supervise his property should not invest in it.
- Property requires care. If it is rented out there is a requirement of repair and maintenance.
- Investment in real estate is also very risky. Although the average rate of return is 'high, a cautious investor should not think of property because it involves the exercising of a lot of pressures such as tax payments, capital gains tax, annual property tax and so on.

### **Things to Consider Before Investing in Real Estate**

- **Price:** The price of a property is most valuable for the determination of real estate. The property must be evaluated regarding its price its position and its use. Regarding position, it should be situated at a place where higher rent is available. So, the productivity will determine the price. Therefore, when an investor buys and sells property, he would evaluate it according to its most productive use.
- **Supply of land:** Land as an asset is fixed but its demand keeps on increasing every time. The increasing population and affluence will increase the rate and value of land. Land from the point of view of long-run investment can be expected to cover purchasing power risk with the prices of and which keep or increasing. On a short-

term basis, the property cannot be called a good investment.

- **Land as collateral:** Land is accepted as collateral by banks and other financial institutions. In India, it is found that almost all banks consider land as a good collateral, but lending on property is restricted by the banks to the market price as a collateral value. If an investor can purchase land and borrow money on such an investment at a lower rate of interest, it is a good form of investment.
- **Tax:** The purchase of land must always be determined after carefully examining the payment of tax on property. Tax must be paid on house property. Tax must be paid on house property as well as after the property is sold under the Capital Gains Act.

#### **4.5 Precious objects & some other investment options:**

- a. Stock Options
- b. Limited partnerships

##### **a. Stock Options**

A stock option gives the owner the right to buy or sell a certain stock within a specified time period. A call option is the right to buy while a put option is the right to sell. If you buy a call option, you are betting that the price of the stock will rise; if you buy a put option, you are betting that the price of the stock will fall. When you buy options, you do not purchase the stock itself. Potential for gain, and for loss, can be quite high; this is definitely not an investment alternative for beginners.

##### **b. Limited Partnerships**

Investing in limited partnerships means you own part of whatever the partnership owns. Your liability is also limited to the percentage of the partnership you own. Limited partnerships require time and knowledge, and, like stock options, are not for beginners. It represents investment alternatives with the least amount of purchasing power risk but with the greatest amount of investment risk. The chance of gain or loss with these alternatives is usually great. Definitely not for beginners, investors in group five alternatives must have a great deal of knowledge about the alternatives in which they are investing, and must be willing to spend time with their investments. Others are:

- A. Collectibles
- B. Futures
- C. Precious Metals, Gemstones
- D. Real estate

##### **Collectibles**

Antiques, coins, and stamps represent thousands of items, which might be classified as collectibles. Their value depends on whether there is a market at a given time as well as the condition of the particular item. Unless you are an expert, collectibles are a very risky investment. Even if you are an expert, you will still be dealing with considerable risk. For middle-income people, investment experts say to buy collectibles mainly for the enjoyment you get from owning them, not as an investment.

##### **Art Objects**

Objects which possess aesthetic appeal, because their production requires skill, taste, creativity, talent, and imagination, may be referred to as art objects. According to this, paintings, sculptures, etchings, and so on may be regarded as art objects. The value of an art object is a function of its aesthetic appeal, rarity, the reputation of the creator, physical condition, and fashion. The two most commonly bought art objects are paintings and antiques.

##### **Futures**



A future is an agreement for the future delivery of a commodity at a specified date. Commodities traded in the futures market include agricultural products such as wheat, soybeans, and livestock, and stock index futures. While futures are used by businesses as a hedge against unfavorable price changes and by speculators who take the risk of such contracts in the hopes of high returns, they are not for beginning investors.

#### **Precious Metals, Gemstones**

With a high investment risk and low purchasing power risk, precious metals like gold and silver, and gemstones such as diamonds take a great deal of knowledge as an investment alternative. While they may be considered a hedge against inflation, precious metals and gemstones are another investment alternative, which is not for beginners.

#### **Exchange-traded fund ETF**

ETFs are open-ended exchange-traded funds that are designed to track specific indices and trade just like any other stock, combined with the benefits of a mutual fund. While ETFs are similar to index funds, they differ in some ways. ETFs can be bought and sold over the exchange through a broker daily at real-time prices, unlike traditional equity funds. As they are traded on the exchange they can be bought/sold through any broker across the country thereby reaching out to a larger number of investors at the lowest possible cost. ETFs are the latest and the fastest-growing mutual fund structure in the world. Globally, since its introduction in the United States, in 1993, ETFs have grown rapidly. ETFs are different from conventional index funds in the sense that ETFs are traded throughout the day, unlike index funds whose NAVs are computed.

While many investors have similar outlooks, no two are exactly alike. ETFs allow long-term investors to diversify their portfolios at one shot. As ETFs are no-load schemes and annual management fees are generally lower, it is an easy and cost-efficient way to invest in a basket of securities. It provides liquidity for those investors with a shorter-term horizon as they can trade intra-day at prices near to the net asset value. Being real-time, it gives investors better control and flexibility to manage their investments. As the initial investment is low, investors find it simple and convenient to buy/sell. India joined the ETF club in December 2001 with the launch of India's first ETF 'Nifty BeES' (Nifty Benchmark Exchange-traded Scheme) by Benchmark Mutual Fund, based on the S&P CNX Nifty Index. Since then Benchmark has launched the Junior BeES and the Liquid BeES.

By their nature ETFs are passive funds. But as seen in the case of Junior BeES, passive fund management does have a major role to play in the Indian markets. Now the investors are turning smart and are resorting to arbitrage opportunities provided between the spot, future and the ETF. The only ETF which tracks the key Sensex is SPlcE, managed by Prudential-ICICI. It trades like any other equity share in the cash segment of a stock exchange. The price of SPlcE is linked to the Sensex, which is approximately 1 / 100th of Sensex. Initially, SPlcE units were created out of IPO (initial public offering). Subsequently, SPlcE units are being created and redeemed on an ongoing basis through a creation and redemption process between the authorized participants and the fund. Authorized participants are generally large institutions /arbitrageurs /market makers/brokers who hold large chunks of Sensex stocks and exchange the same for SPlcE units. Thus, the trading of SPlcE units on the stock exchanges for investors would be totally separate - from the creation process. We can say that SPlcE units trade on two markets concurrently: primary and secondary markets. The pricing of SPlcE units is continuous during normal trading hours. Each SPlcE unit will trade at its net asset value, which is approximately 1 / 100th of Sensex.

One can buy an ETF just the way you buy a share — from a stock exchange. You can also buy it from a mutual fund that manages such a scheme.

#### **4.6 Self-Check Questions**

4.6.1 What is a Mutual Fund?

4.6.2 Can Insurance policies be sold in the Secondary Market?

#### **4.7 Short Questions**

1. What is Life Insurance?
2. What are Stock options?

#### **4.8 Long Questions**

1. Discuss Mutual Fund Schemes in detail.
2. Explain things to consider before investing in Real Estate.

#### **4.9 References**

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#### **4.10 Answer to Self-Check Question**

4.6.1 Mutual funds are investment companies that use the funds from investors to invest in other companies or investment alternatives.

4.6.2 No, Insurance policies can't be sold in the Secondary Market.

**RISK MANAGEMENT: CONCEPT, SOURCES & TYPES OF RISK**

**STRUCTURE**

- 5.1 Concept of Risk
- 5.2 Types of Risk
- 5.3 Assigning Risk Allowances
- 5.4 Can we reduce the Risk Exposure
- 5.5 Self-Check Questions
- 5.6 Short Questions
- 5.7 Long Questions
- 5.8 References
- 5.9 Answer to Self-Check Questions

**5.1 Concept of Risk**

**Risk in a Traditional Sense**

Risk in holding securities is generally associated with the possibility that realized returns will be less than the returns that were expected. The source of such disappointment is the failure of dividends (interest) and/or the security's price to materialize as expected. Forces that contribute to variations in return price or dividend interest) constitute elements of risk. Some influences are external to the firm, cannot be controlled, and affect large numbers of securities. Other influences are internal to the firm and are controllable to a large degree. In investments, those forces that are uncontrollable, external, and broad in their effect are called sources of systematic risk. Conversely, controllable internal factors somewhat peculiar to industries and/or firms are referred to as sources of unsystematic risk.

Systematic risk refers to that portion of the total variability in return caused by factors affecting the prices of all securities. Economic, political, and sociological changes are sources of systematic risk. Their effect is to cause prices of nearly all individual common stocks and/or all individual bonds to move together in the same manner. For example, if the economy is moving toward a recession and corporate profits shift downward, stock prices may decline across a broad front. Nearly all stocks listed on the New York Stock Exchange (NYSE) move in the same direction as the NYSE Index. On average, 50 percent of the variation in a stock's price can be explained by variation in the market index. In other words, about one-half the total risk in an average common stock is systematic risk.

Unsystematic risk is the portion of total risk that is unique to a firm or industry. Factors such as management capability, consumer preferences, and labor strikes cause systematic variability of returns in a firm. Unsystematic factors are largely independent of factors affecting securities markets in general. Because these factors affect one firm, they must be examined for each firm.

**5.2 Types of Risk**

**Systematic Risk**

**Market Risk**

It is not uncommon to find stock prices falling from time to time, while a company's earnings are rising and vice versa. The price of a stock may fluctuate widely within a short span of time even though earnings remain unchanged. The causes of this phenomenon are varied, but it is mainly due

to a change in investors' attitudes toward equities in general, or toward certain types or groups of securities in particular. Variability in return on most common stocks that is due to basic sweeping changes in investor expectations is referred to as market risk.

Market risk is caused by investor reaction to tangible as well as intangible events, Expectations of lower corporate profits in general may cause the larger body of common to fall in price. Investors are expressing their judgment that too much is being paid for earnings in the light of anticipated events. The basis for the reaction is a set of real, tangible events political, social, or economic.

Intangible events are related to market psychology. Market risk is usually touched off by a reaction to real events, but the emotional instability of investors acting collectively leads to a snow balling over reaction. The initial decline in the market can cause the fear of loss to grip investors, and a kind of herd instinct builds as all investors make for the exit. These reactions to reactions frequently culminate in excessive selling, pushing prices down far out of line with fundamental value. With a trigger mechanism such as the assassination of a politician, the threat of war, or an oil shortage, virtually all stocks are adversely affected. Likewise, stocks in a particular industry group can be hard hit when the industry goes "out of fashion."

This discussion of market risk has emphasized adverse reactions. Certainly, buying panics also occur as reactions to real events, however, investors are not likely to think of sharp price advances as risk. Two other factors, interest rates and inflation, are an integral part of the real forces behind market risk and are part of the larger category of systematic or uncontrollable influences. Let us turn our attention to interest rates. This risk factor has its most direct effect on bond investments.

#### **Interest-Rate Risk**

Interest-rate risk refers to the uncertainty of future market values and of the size of future income, caused by fluctuations in the general level of interest rates. The root cause of interest-rate risk lies in the fact that, as the rate of interest paid on government securities rises or falls, the rates of return demanded on alternative investment vehicles such as stocks and bonds issued in the private sector, rise or fall. In other words, as the cost of money changes for nearly risk-free securities the cost of money to more risk-prone issuers (Private sector) will also change.

Investors normally regard government securities as coming closest to being risk-free. The interest rates demanded on government securities are thought to approximate the "pure" rate of interest, or the cost of hiring money at no risk. Changes in rates of interest demanded on government securities will permeate the system of available securities, from corporate bonds down to the riskiest common stocks.

Interest rates on government securities shift with changes in the supply and demand for government securities. For example, a large operating deficit experienced by the government will require financing. Issuance of added amounts of government securities will increase the available supply. Potential buyers of this new supply may be induced to buy only if interest rates are somewhat higher than those currently prevailing on outstanding issues. If rates on government securities advance from, say, 9 percent to 9.5 percent, investors holding outstanding issues that yield 9 percent will notice a decline in the price of their securities. Because the 9 percent rate is fixed by contract on these "old" government securities, a potential buyer would be able to realize the competitive 9.5 percent rate only if the current holder "market down" the price. As the rate on government securities advances, they become relatively more attractive and other securities become less attractive. Consequently, bond purchasers will buy governments instead of corporates. This will cause the price of corporates to fall and the rate on corporates to rise. Rising corporate bond rates will eventually cause preferred- and common-stock prices to adjust downward as the chain reaction is felt

throughout the system of security yields.

Thus, a rational, highly interconnected structure of security yields exists. Shifts in the “pure” cost of money will ripple through the structure, the direct effect on increases in the level of interest rates is to cause security prices to fall across a wide span of investment vehicles, similarly, falling interest rates precipitate price markups on outstanding securities.

In addition to the direct, systematic effect on bonds, there are indirect effects on common stocks. First, lower or higher interest rates make the purchase of stocks on margin (using borrowed funds) more or less attractive. Higher interest rates, for example, may lead to lower prices because of a diminished demand for equities by speculators who use margin. Ebullient stock markets are at times propelled to some excesses by margin buying when interest rates are relatively low.

Second, many firms such as public utilities finance their operations quite heavily with borrowed funds. Others, such as financial institutions, are principally in the business of lending money. As interest rates advance, firms with heavy doses of borrowed capital find that more of their income goes toward paying interest on borrowed money. This may lead to lower earnings, dividends, and share prices. Advancing interest rates can bring higher earnings to lending institutions whose principal revenue source is interest received on loans. For these firms, higher earnings could lead to increased dividends and stock prices.

### **Purchasing-Power Risk**

Market risk and interest-rate risk can be defined in terms of uncertainties as to the amount of current dollars to be received by an investor. Purchasing-power risk is the uncertainty of the purchasing power of the amounts to be received. In more everyday terms, purchasing power risk refers to the impact of inflation or deflation on an investment.

If we think of investment as the postponement of consumption, we can see that when a person purchases a stock, he has foregone the opportunity to buy some good or service for as long as he owns the stock. If, during the holding period, goods or services rise, the investor actually loses purchasing power. Rising prices on goods and services are normally associated with what is referred to as inflation. Falling prices on goods and services are termed deflation. Both inflation and deflation are covered in the all-encompassing term purchasing power risk. Generally, purchasing-power risk has come to be identified with inflation (rising prices); the incidence of declining prices in most countries has been slight.

Rational investors should include in their estimate of expected return an allowance for purchasing-power risk, in the form of an expected annual percentage change in prices. If a cost-of-living index begins the year at 100 and ends at 103, we say that the rate of increase (inflation) is 3 percent  $[(103-100)/100]$ . If from the second to the third year, the index changes from 103 to 109, the rate is about 5.8 percent  $[(109-103)/103]$ .

Just as changes in interest rates have a systematic influence on the prices of all securities, both bonds, and stocks, so too do anticipated purchasing-power changes manifest themselves. If annual changes in the consumer price index or other measures of purchasing power have been averaging steadily around 3.5 percent and prices will spurt ahead by 4.5 percent over the next year, required rates of return will adjust upward. This process will affect government and corporate bonds as well as common stocks.

Market, purchasing power, and interest-rate risk are the principal sources of systematic risk in securities; but we should also consider another important category of security risk—unsystematic risks.

### **Unsystematic Risk**

Unsystematic risk is the portion of total risk that is unique or peculiar to a firm or an

industry, above and beyond that affecting securities markets in general. Factors such as management capability, consumer preferences, and labor strikes can cause unsystematic variability of returns for a company's stock. Because these factors affect one industry and/or one firm, they must be examined separately for each company.

The uncertainty surrounding the ability of the issuer to make payments on securities stems from two sources: (1) the operating environment of the business, and (2) the financing of the firm. These risks are referred to as business risk and financial risk, respectively. They are strictly a function of the operating conditions of the firm and how to finance its operations. Our intention here will be directed to the broad aspects and implications of business and financial risk. In-depth treatment will be the principal goal of later chapters on analysis of the economy, the industry, and the firm.

### **Business Risk**

Business risk is a function of the operating conditions faced by a firm and the variability these conditions inject into operating income expected to increase 10 percent per year over the foreseeable future, business risk would be higher if operating earnings could grow as much as 14 percent or as little as 6 percent than if the range were from a high of 11 percent to a low of 9 percent. The degree of variation from the expected trend would measure business risk.

Business risk can be divided into two broad categories: external and internal. Internal business risk is largely associated with the efficiency with which a firm conducts its operations within the broader operating environment imposed upon it. Each firm has its own set of internal risks, and the degree to which it is successful in coping with them is reflected in operating efficiency.

To a large extent, external business risk is the result of operating conditions imposed upon the firm by circumstances beyond its control. Each firm also faces its own set of external risks, depending upon the specific operating environmental factors with which it must deal. The external factors, from the cost of money to defense budget cuts to higher tariffs to a downswing in the business cycle, are far too numerous to list in detail, but the most pervasive external risk factor is probably the business cycle. The sales of some industries (steel, autos) tend to move in tandem with the business cycle, while the sales of others move country cyclically (housing). Demographic considerations can also influence revenues through changes in the birth rate or the geographical distribution of the population by age, group, race, and so on. Political Policies are a part of external business risk; government policies about monetary and fiscal matters can affect revenues through the effect on the cost and availability of funds. If money is more expensive, consumers who buy on credit may postpone purchases, and municipal governments may not sell bonds to finance a water treatment plant. The impact upon retail stores, and television manufacturers, of water-purification systems is clear.

### **Financial Risk**

Financial risk is associated with how a company finances its activities. We usually gauge financial risk by looking at the capital structure of a firm. The presence of borrowed money or debt in the capital structure creates fixed payment in the form of interest that must be sustained by the firm. The presence of these interest commitments fixed interest payments due to debt of fixed-dividend payments on preferred stock causes the amount of residual earnings available for common-stock dividends to be more variable than if no interest payments were required. Financial risk is avoidable risk to the extent that managements have the freedom to decide to borrow or not to borrow funds. A firm with no debt financing has no financial risk.

By engaging in debt financing, the firm changes the characteristic of the earnings stream available to the common-stock holders. Specifically, the reliance on debt financing, called financial leverage, has at three important effects on common-stock holders. Debt financing (1) increases the

variability of their returns, (2) affects their expectations concerning their returns, and (3) increases their risk of being ruined.

### **5.3 Assigning Risk Allowances (Premiums)**

One way of quantifying risk and building a required rate of return ( $r$ ), would be to express the required rate as comprising a riskless rate plus compensation for individual risk factors previously enunciated, or as:

$$r = i + p + b + f + m + o$$

Where;

$i$  = real interest rate (riskless rate)

$p$  = purchasing power risk allowance

$b$  = business-risk allowance

$f$  = financial-risk allowance

$m$  = market-risk allowance

$o$  = allowance for "other" risks

The first step would be to determine a suitable risk-less rate of interest. Unfortunately, no investment is risk-free. The return on Treasury bills or an insured savings account, whichever is relevant to an individual investor, can be used as an approximate riskless rate. Savings accounts possess purchasing-power risk and are subject to the interest-rate risk of income but not principal. Government bills are subject to interest risk of principal. The riskless rate might be 8 percent. Using the rate on government bills and assuming that interest-rate-and-risk compensation is already included in the government bill rate, we see in Figure 3-1 the process of building the required rate of return for alternative investments.

Quantifying the separate effects of each type of systematic and unsystematic risk is difficult because of overlapping effects and the sheer complexity involved. In the remainder of the chapter, we will examine some proxies for packaging into a single measure of risk all those qualitative risk factors taken together that perhaps cannot be measured separately.

### **5.4 Can We Reduce the Risk Exposure?**

Every investor wants to guard himself from the risk. This can be done by understanding the nature of the risk and careful planning. Let's see how can we protect ourselves as investors from the different types of risks.

#### **Market Risk Protection**

- a. The investor has to study the price behavior of the stock. Usually, history repeats itself even though it is not in perfect form. The stock that shows a growth pattern may continue to do so for some more period. The Indian stock market expects the growth pattern to continue for some more time in information technology stock and depressing conditions to continue in the textile-related stock. Some stocks may be cyclical stocks. It is better to avoid such type of stocks. The standard deviation and beta indicate the volatility of the stock.
- b. The standard deviation and beta are available for the stocks that are included in the indices. The National Stock Exchange News bulletin provides this information. Looking at the beta values, the investor can gauge the risk factor and make wise decisions according to his risk tolerance. Further, the investor should be prepared to hold the stock for some time to reap the benefits of the rising trends in the market. He should be careful in the timings of the purchase and sale of the stock. He should purchase it at the lower level and should exit at a higher level.

#### **Protection Against Interest Rate Risk**

- a. Often suggested solution for this is to hold the investment and sell it in the middle due to a fall in the interest rate, the capital invested would experience tolerance.
- b. The investors can also buy treasury bills and bonds of short maturity. The portfolio manager can invest in the treasury bills and the money can be reinvested in the market to suit the prevailing interest rate.
- c. Another suggested solution is to invest in bonds with different maturity dates. When the bonds mature on different dates, reinvestment can be done according to the changes in the investment climate. Maturity diversification can yield the best results.

#### **Protection Against Inflation**

- a. The general opinion is that the bonds or debentures with fixed returns cannot solve the problem. If the bond yield is 13 to 15 % with low-risk factor, they would provide a hedge against inflation.
- b. another way to avoid the risk is to have investment in short-term securities and to avoid long-term investment. The rising consumer price index may wipe off the real rate of interest in the long term.
- c. Investment diversification can also solve this problem to a certain extent. The investor has to diversify his investment in real estate, precious metals, arts, and antiques along with the investment in securities. One cannot be assured that different types of investments would provide a perfect hedge against inflation. It can minimize the loss due to the fall in purchasing power.

#### **Protection Against Business and Financial Risk**

- a. To guard against business risk, the investor has to analyze the strengths and weakness of the industry to which the company belongs. If the weakness of the industry is too much of government interference in the way of rules and regulations, it is better to avoid it.
- b. Analyzing the profitability trend of the company is essential. The calculation of standard deviation would yield the variability of the return. If there is inconsistency in the earnings, it is better to avoid it. The investor has to choose stock of a consistent track record.
- c. The financial risk should be minimized by analyzing the capital structure, of the company. If the debt equity ratio is higher, the investor should have a sense of caution. Along with the capital structure analysis, he should also take into account of the interest payment. In a boom period, the investor can select a highly leveraged company but not in a recession.

#### **5.5 Self-Check Question**

5.5.1 What is Systematic Risk?

5.5.2 Give an equation to assign risk allowances (premiums).

#### **5.6 Short Questions**

1. What is Market Risk?
2. What is Purchasing Power Risk?

#### **5.7 Long Questions**

1. Explain Types of Risk.
2. How can you protect yourself from Risk Exposure?

#### **5.8 References**

1. Chandra, Prasanna (2014). "Indian Financial Statement Analysis: Text and Cases." McGraw-Hill Education.
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### **5.9 Answer to Self-Check Questions**

5.5.1 Systematic risk refers to that portion of total variability in return caused by factors affecting the prices of all securities.

5.5.2  $r = i + p + b + f + m + o$

**MEASUREMENT AND EVALUATION OF RISK**

**STRUCTURE**

- 6.1 How do we measure Risk?
- 6.2 Measuring Portfolio Risk
- 6.3 The Characteristics of Regression Line (CRL)
- 6.4 What is Beta? What does it imply?
- 6.5 Correlation
- 6.6 Summary
- 6.7 Self-Check Questions
- 6.8 Short Questions
- 6.9 References
- 6.10 Answer to Self-Check Questions

**6.1 How do we Measure Risk?**

Understanding the nature of the risk is not adequate unless the investor or analyst is capable of expressing it in quantitative terms. Expressing the risk of a stock in quantitative terms makes it comparable with other stocks. Measurement cannot be assured of percent accuracy because the risk is caused by numerous factors as discussed above. Measurement provides an approximate quantification of risk. The statistical tool often used to measure is the standard deviation.

**Standard Deviation:**

It is a measure of the values of the variables around its mean or it is the square root of the sum of the squared deviations from the mean divided by the number of observances. The arithmetic mean of the returns may be the same for the two companies but the returns may vary widely. This can be illustrated with an example.

Now let us take two companies A and B to calculate the expected returns.

COMPANY A			COMPANY B		
Ri	Pi	Pi ri	Ri	Pi	Pi ri
6	0.10	0.6	4	0.1	0.4
7	0.25	1.75	6	0.2	1.2
8	0.30	2.4	8	0.4	3.2
9	0.25	2.25	10	0.2	2.0
10	0.10	1.00	12	0.1	1.2

Where:

Ri is the rate of return P is the probability

Let's calculate the expected mean for both companies.

For Company A:  $ri / n = (6+7+8+9+10)/5 = 8$

For Company B:  $ri / n = (4+6+8+10+12)/5 = 8$

the expected means for both the companies are same i.e. 8.

However, the return varies from 6%-10% in Company A and 4%-12% for Company B. To find out the variation, the standard deviation technique is applied.

**6.2 Measuring Portfolio Risk**

Like in the case of individual securities, the risk of a portfolio could be measured in terms of

its variance or standard deviation. However, the variance or standard deviation of a portfolio is not simply the weighted average of variances or standard deviation of individual securities. The portfolio variance or standard deviation is affected by the association of the movement of returns of two securities. The covariance of two securities measures their co-movement.

**How do we Calculate Covariance?**

There are three steps involved in the calculation of covariance between two securities;

Determine the expected returns for securities Determine the deviation of possible returns from the expected return for each security.

Determine the sum of the product of each deviation of returns of two securities and probability.

Let us consider the data of two securities X and Y.

State		of Economy	
		X	Y
A	.1	-8	14
B	0.2	10	-4
C	0.4	8	6
D	0.2	5	15
E	0.1	-4	20

The expected return for security X:

$$E(R_x) - (0.1 * -0.8) + (0.2 * 10) + (0.4 * 8) + (0.2 * 5) + (0.1 * -0.4) = 5\%$$

The expected return for security Y:

$$E(R_y) - (0.1 * 14) + (0.2 * -4) + (0.4 * 6) + (0.2 * 15) + (0.1 * 20) = 8\%$$

Covxy is the covariance of returns of securities X & Y, and Rx and Ry are the returns of securities X & Y respectively

E (Rx) and E (Ry) are the expected returns of securities X & Y respectively Pi is the probability of occurrence of the state of the economy.

Thus, the covariance between the securities X & Y is:

$$Covxy - 0.1(-8 - 5)(14 - 8) + 0.2(10 - 5)(-4 - 8) + 0.4(8 - 8)(6 - 8) + 0.2(5 - 5)(15 - 8) + 0.1(-4 - 5)(20 - 8) = -7.8 - 12 - 2.4 + 0 - 10.8 = -33.0$$

You can note from the calculation of covariance of returns of securities X and Y that it is a measure of both the standard deviations of the securities and their associations. Thus, covariance can also be calculated as follows:

$$Covariance\ XY = Standard\ deviation\ X * Standard\ deviation\ Y * Correlation\ XY\ Covxy - s_x * s_y * Corxy$$

Where s<sub>x</sub> and s<sub>y</sub> are standard deviation of returns for Securities X and Y and Corxy is the correlation coefficient of securities X and Y. Correlation measures the linear relationship between two variables (in case of two securities).

Thus, from the above formula, we can obtain the following formula for calculating the correlation coefficient of securities X & Y:

$$Correlation\ XY = Covariance\ XY$$

$$Standard\ deviation\ X * Standard\ deviation\ Y\ Coney = Covxy$$

$$s_x * s_y\ The\ variances\ and\ standard\ deviation\ of\ securities\ x\ and\ y\ are\ as\ follows:\ s_x^2 = 0.1(-8 - 5)^2 + 0.2(10 - 5)^2 + 0.4(8 - 5)^2 + 0.2(5 - 5)^2 + 0.1(-4 - 5)^2 = 16.9 + 5 + 3.6 + 0 + 8.1 = 33.6\ s_x = \sqrt{33.6}$$

5.8%

$$y^2 = 0.1(14-8)^2 + 0.2(-4-8)^2 + 0.4(6-8)^2 + 0.2(15-8)^2 + 0.1(20-8)^2 = 3.6 + 28.8 + 1.6 + 9.8 + 14.4 =$$

58.2

$$y = \sqrt{58.2} = 7.63\%$$

The correlation coefficient of securities X and y is as follows:

$$r_{xy} = -33 / (5.8 * 7.63) = -0.7456$$

Securities X and Y are negatively correlated. If an investor invests in the combination of these securities, he or she can reduce the risk.

### 6.3 The Characteristic Regression Line (CRL)

The Characteristic Regression Line (CRL) is a simple linear regression model estimated for a particular stock against the market index return to measure its diversifiable and undiversifiable risks.

The model is:  $R_i = a_i + b_i R_m + e_i$

$R_i$  = Return of the  $i$ th stock

$a_i$  = Intercept

$b_i$  = Slope of the  $i$ th stock

$R_m$  = Return of the market index

$e_i$  = the error term

The security return =  $\frac{\text{Today's price} - \text{Yesterday's price}}{\text{Yesterday's price}} * 100$

Today's market return =  $\frac{\text{Today's index} - \text{Yesterday's index}}{\text{Yesterday's index}} * 100$

Like daily returns, weekly returns can be calculated by using this week's and last week's prices instead of today's and yesterday's prices in the above-mentioned formula. Monthly can also be calculated. Let's consider the daily prices of the Bajaj Auto stock and the NSE index for the 5th Oct 2000 to the 16th of October 2000. The objective of this example is only to illustrate the computation of beta. Usually, beta values have to be calculated from data of a fairly long period to minimize the sampling error.

Date	NSE index (X)	Bajaj Auto (Y)
October 5	904.95	597.8
October 6	845.75	570.8
October 7	874.25	582.95
October 8	847.95	559.85
October 9	849.10	554.60
October 12	835.80	545.10
October 13	816.75	519.15
October 14	843.55	560.70
October 15	835.55	560.95

### 6.4 What Is Beta? What Does it Imply?

Beta is the slope of the characteristic regression line. Beta describes the relationship between the stock's return and the index returns. In the above example, beta indicates that 1 % change in the NSE index return would cause a 1.19 % change in the Bajaj auto stock return. Varying beta has the following implications:

- Beta = +1.0: A 1% change in the market index return causes exactly a 1% change in the stock return. It indicates that the stock moves in tandem with the market.
- Beta = + 0.5: A 1% change in the market index return causes exactly a 0.5% change in the stock return. The stock is less volatile compared to the market.
- Beta = +2.0: 1% change in the market index return causes exactly 2% change in the stock return. The stock is more volatile. When there is a decline of 10% in the market return, the

stock with a beta of 2 would give a negative return of 20%. The stocks with more than 1 beta value is considered to be risky.

- Negative beta value indicates that the stock return moves in the opposite direction to the market return. A stock with a negative beta of -1 would provide a return of 10%, if the market return declines by 10% and vice-versa.

**Note:** Stocks with negative beta resist the decline in the market return. But stocks with negative returns are very rare.

**Alpha:** The intercept of the characteristic regression line is alpha i.e., distance between the intersection and the horizontal axis. It indicates that the stock return is independent of the market return. A positive value of alpha is a healthy sign. Positive alpha values would yield profitable returns

### 6.5 Correlation

The correlation coefficient measures the nature and extent of the relationship between stock market index return and the stock return in a particular period. The square of the correlation coefficient is the coefficient of determination. It gives the percentage of variation in the stock's return explained by variation in the market's return.

$$r^2 = (0.79)^2 * 0.62$$

What does an r of 0.62 imply?

The interpretation is that 62% of the variation in stock's return is due to the variations in NSE index return.

### 6.6 Summary

- Risk is measured by the variability of return. It has two components, systematic and unsystematic risk
- Systematic risk affects the market as a whole. Tangible event like Pokaran blast and intangible event like investor's psychology affect the entire stock market, which are known as market risk
- Interest rate risk is the variation in return caused by the changes in the market interest rate.
- Purchasing power risk is caused by inflation. Inflation reduces the real rate of return earned from the securities.
- Unsystematic risk is unique to the particular industry or company. This is classifying into business risk and financial risk.
- Business risk is caused by operating environment of the business. This may be caused by the internal factors like fluctuations in sales or personnel management or external factors like government policies, rules and regulations.
- Financial risk emerges from the debt component of the capital structure.
- A careful analysis of the past, planning and diversification of the investment can moderate the effects of the various risk factors.
- Statistically standard deviation and beta estimation help to quantify the risk.

### 6.7 Self-Check Questions

6.7.1 How do you calculate linear regression model?

6.7.2 Systematic risk affects the market as a whole. (True/False)

### 6.8 Short Questions

1. What is correlation?
2. How to you calculate Covariance?

### 6.9 References

1. Chandra, Prasanna (2014). "Indian Financial Statement Analysis: Text and Cases." McGraw-Hill Education.

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**6.10 Answer to Self-Check Questions**

6.7.1  $R_i = a_i + b_i (R_m + e_i)$

6.7.2 True.

**APPROACHES TO INVESTMENT DECISION MAKING**

**STRUCTURE**

- 7.1 Corporate Securities
- 7.2 Approaches to Investment Decision Making
- 7.3 Vaguely formulated Investment Policy
- 7.4 Naïve Extrapolation of the best
- 7.5 Cursory Decision Making
- 7.6 Simultaneous Switching
- 7.7 Misplaced love for Cheap Stocks
- 7.8 Over-diversification and Under-diversification
- 7.9 Buying Shares of familiar companies
- 7.10 Wrong Attitude towards Losses and Profits
- 7.11 Tendency to Speculates
- 7.12 Self-Check Questions
- 7.13 Short Questions
- 7.14 Long Questions
- 7.15 References
- 7.16 Answer to Self-Check Questions

**7.1 CORPORATE SECURITIES**

Joint stock of companies in the private sector issue corporate securities. These include equity shares, preference shares, and debentures. Equity shares have variable dividend and hence belong 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, 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, Wipro 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:** Under-valued 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 Depository Receipts are instruments in the form of a depository receipt or certificate created by the overseas depository 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 Depository 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. However, 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 to reduce the risk inherent in an 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.

## **7.2 Approaches to Investment Decision, making**

The stock market is thronged by investors pursuing diverse investment strategies. These may be sub-assumed under these broad approaches:

### **1. Fundamental Approach**

The basic tenets of the fundamental approach, which is perhaps most commonly advocated by investment professionals, are as follows: There is an intrinsic value of a security and this depends upon underlying economic (fundamental) factors. The intrinsic value can be established by a penetrating analysis of the fundamental factors relating to the company, industry and economy. At any given point of time, there are some securities for which the prevailing market price would differ from the intrinsic value. Sooner or later, of course, the market price would fall in line with the intrinsic value. Superior returns can be earned by buying under-valued securities (securities whose intrinsic value exceeds the market price) and selling over-valued securities (securities whose intrinsic value is less than the market price).

### **2. Psychological Approach**

The psychological approach is based on the premise that stock prices are guided by emotion, rather than reason. Stock prices are believed to be influenced by the psychological mood of the investors. When greed and euphoria sweep the market, prices rise to dizzy heights. On the other hand, when fear and despair envelop the market, prices fall to abysmally low levels. Since psychic values appear to be more important than intrinsic values, the psychological approach suggests that it is more profitable to analyze how investors tend to behave as the market is swept by waves of optimism and pessimism which seem to alternate. The psychological approach has been described vividly as the 'castles-in-their' theory by Burton G. Malkiel.

### **3. Technical analysis**

Those who subscribe to the psychological approach or the 'castles-in-the-air' theory generally use some form of technical analysis which is concerned with a study of internal market data, with a view to developing trading rules aimed at profit-making. The basic premise of technical analysis is that there are certain persistent and recurring patterns of price movements, which can be discerned by analyzing market data. Technical analysts use a variety of tools like bar chart, point and figure chart, moving average analysis, breadth of market analysis, etc.

### **4. Academic Approach**

Over the last five decades or so, the academic community has studied various aspects of the capital market, particularly in the advanced countries, with the help of fairly sophisticated methods of investigation. While there are many unresolved issues and controversies stemming from studies pointing in different directions, there appears to be substantial support for the following tenets. Stock markets are reasonably efficient in reacting quickly and rationally to the flow of information. Hence, stock prices reflect intrinsic value fairly well. Put differently: Market price = Intrinsic value Stock price behavior corresponds to a random walk. This means that successive price changes are independent. As a result, past price behavior cannot be used to predict future price behavior. In the capital market, there is a positive relationship between risk and return. More specifically, the expected return from a security is linearly related to its systematic risk. Stock price behavior corresponds to a random walk. This means that successive price changes are independent. As a result, past price behavior cannot be used to predict future price behavior. In the capital market, there is a positive relationship between risk and return. More specifically, the expected return from a security is linearly related to its systematic risk

## **5. Eclectic Approach**

The eclectic approach draws on all the three different approaches discussed above. The basic premises of the eclectic approach are as follows:

- Fundamental analysis helps establish basic standards and benchmarks. However, since there are uncertainties associated with fundamental analysis, exclusive reliance on fundamental analysis should be avoided. Equally important, excessive refinement and complexity in fundamental analysis must be viewed with caution.
- Technical analysis is useful in broadly gauging the prevailing mood of investors and the relative strengths of supply and demand forces. However, since the mood of investors can vary unpredictably excessive reliance on technical indicators can be hazardous. More important, complicated technical systems should ordinarily be regarded as suspect because they often represent figments of imagination rather than tools of proven usefulness.
- The market is neither as well ordered as the academic approach suggests, nor as speculative -AS the psychological approach indicates. While it is characterized by some inefficiencies and imperfections, it seems to react reasonably efficiently and rationally to the flow of information Likewise, despite many instances of mispriced securities\* there appears to be a fairly strong correlation between risk and return.

The operational implications of the eclectic approach are as follows:

- Conduct fundamental analysis to establish certain value 'anchors'.  
Do technical analysis to assess the state of the market psychology.
- Combine fundamental and technical analyses to determine which securities are worth buying, worth holding, and worth disposing of.
- Respect market prices and do not show excessive zeal in 'beating the market'. Accept the fact that the search for a higher level of return often necessitates the assumption of a higher level of risk.
- Can You Commit any Errors While Managing Your Investment? What a fire. They!
- Yes, investors appear to be prone to the following errors in managing their investments. Some of the common ones are listed as:
  - Inadequate comprehension of return and risk.
  - Vaguely formulated investment policy.
  - Naive extrapolation of the past.

- Cursory decision-making.
- Simultaneous Switching
- Misplaced love for cheap stocks.
- Over diversification or under-diversification.
- Buying shares of familiar companies
- "Wrong, attitude toward losses and profits.
- Tendency to speculate. Let's discuss them one by one.
- Inadequate Comprehension of Return and Risk

What returns can one expect from different investments? What are the risks associated with these investments? Yet investors often have nebulous ideas about risk and return. Many investors have unrealistic and exaggerated expectations from investments, in particular from equity shares and convertible debentures. One often comes across investors who say that they hope to earn a return of 25 to 30 % per year with virtually no risk exposure or even double their investment in a year or so. They have apparently been misled by one or more of the following: (a) tall and unjustified claims made by people with vested interests; (b) exceptional performance of some portfolio they have seen or managed, which may be attributable mostly to fortuitous factors; and (c) promises made by tipsters, operators, and others. In most of the cases, such expectations reflect investor naivete and gullibility.

By setting unrealistic goals; investors may do precisely the things that give poor results. They may churn their portfolios too frequently; they may buy dubious 'stories' from Dalai Street; they may pay huge premiums for speculative, fashionable stocks; they may discard sound companies because of temporary stagnation in earnings; they may try to outguess short-term market swings.

### **7.3 Vaguely Formulated Investment Policy**

Often investors do not clearly spell out their risk disposition and investment policy. This tends to create confusion and impairs the quality of investment decisions. Ironically, conservative investors turn aggressive when the bull market is near its peak in the hope of reaping a bonanza; likewise, in the wake of sharp losses inflicted by a bear market, aggressive investors turn unduly cautious and overlook opportunities before them. If you know what your risk attitude is and why you are investing, you will learn how to invest well. A well-articulated investment policy, adhered to consistently over a period of time, saves a great deal of disappointment.

### **7.4 Naive Extrapolation of the Past**

Investors generally believe in a simple extrapolation of past trends and events and do not effectively incorporate changes into expectations. As Arthur Zeikel says: "People generally, and investors particularly, fail to appreciate the working of countervailing forces; change and momentum are largely misunderstood concepts. Most investors tend to cling to the course to which they are currently committed, especially at turning points."

The apparent comfort provided by extrapolating too far, however, is dangerous. As Peter Bernstein says: "Momentum causes things to run further and longer than we anticipate. The very familiarity of a force in motion reduces our ability to see when it is losing its momentum. Indeed, that is why extrapolating the present into the future so frequently turns out to be the genesis of an embarrassing forecast."

### **7.5 Cursory Decision-Making**

Investment decision-making is characterized by a great deal of cursoriness. Investors tend to base their decisions on partial evidence, unreliable hearsay, or casual tips given by brokers, friends, and others.

Cavalierly brush aside various kinds of investment risk (market risk, business risk, and interest rate risk) as greed overpowers them.

Uncritically follow others because of the temptation to ride the bandwagon or lack of confidence in

their own judgment.

### **7.6 Simultaneous Switching**

When investors switch over from one stock to another, they often buy and sell more or less simultaneously. For example, an investor may sell stock A and simultaneously buy stock B. Such action assumes that the right time for selling stock A is also the right time for buying stock B. This may not often be so. While it may be the right time to sell stock A, it may not necessarily be the right time to buy stock B. Alternatively, while it may be the right time to buy stock B, it may not necessarily be the right time to sell stock A. Hence, when you contemplate switching you should first sell (if you feel it is the right time to do so) or buy (if you feel it is the right time to do so) and make the other deal at an appropriate time.

### **7.7 Misplaced Love for Cheap Stocks**

Investors often have a weakness for stocks, which look apparently cheap. This is revealed in the following behavior: They buy a stock that is on its way down because somehow a falling share looks like a good bargain.

They tend to 'average' down. This means that they buy more of the same stock when its price falls in a bid to lower their average price.

They like to buy a stock that is quoting low as they feel comforted when they buy 1000 shares of a company that is quoting at Rs 10 rather than 100 shares of a company that is quoting at Rs 100.

### **7.8 Over-Diversification or Under-Diversification**

We have seen a number of individual portfolios, which are either over-diversified or under-diversified. Many individuals have portfolios consisting of thirty to sixty, or even more, different stocks. Managing such portfolios is an unwieldy task. As a result, the impact of a good idea is negligible. Perhaps as common as over-diversification is under-diversification. Many individuals do not apparently understand the principle of diversification and its benefit in terms of risk reduction. A number of individual portfolios seem to be highly under-diversified, carrying an avoidable risk exposure.

### **7.9 Buying Shares of Familiar Companies**

Investors are often tempted to buy shares of companies with which they are familiar. Medical practitioners, for example, may prefer to buy shares of pharmaceutical companies. Perhaps they believe in the adage "a known devil is better than an unknown God" and derive psychological comfort from investing in familiar or well-known companies. Those who have such tendencies, however, must realize that in the stock market there is hardly any correlation between the fame of a company's product and the return on its equity stock.

### **7.10 Wrong Attitude Towards Losses and Profits**

Typically, an investor has an aversion to admit his mistake and cut losses short. If the price falls, contrary to his expectation at the time of purchase, he somehow hopes that it will rebound and he can break even. (He may even buy some more shares at the lower price in a bid to reduce his average price.) Surprisingly, such a belief persists even when the prospects look dismal and there may be a greater possibility of a further decline. This perhaps arises out of a disinclination to admit mistakes. The pain of regret accompanying the realization of losses is sought to be postponed. And if the price recovers due to favorable conditions, there is a tendency to dispose of the share when its price more or less equals the original purchase price, even though there may be a fair chance of further increases. The psychological relief experienced by an investor from recovering losses seems to motivate such behavior. If we put differently, the tendency is to let the losses run and cut profits short, rather than to cut the losses short and let the profits run.

### **7.11 Tendency to Speculate**

The tendency to speculate is common, particularly when the market is buoyant and ecstatic. Yet, in

the long run one is likely to be better off if he refrains from speculative instincts.

### **7.12 Self-Check Questions**

7.12.1 What is Income Stock?

7.12.2 What do you mean by Warrant?

### **7.13 Short Questions**

1. A GDR issued in America is an American Depository Receipt (ADR). (True/False)

2. Difference between preference shares and equity shares.

### **7.14 Long Questions**

1. Discuss different approaches to Investment Decision Making.

2. Discuss Corporate securities in detail.

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1. Chandra, Prasanna (2014). "Indian Financial Statement Analysis: Text and Cases." McGraw-Hill Education.
2. Bernstein, Leopold A., & Wild, John J. (2015). "Analysis of Financial Statements." Tata McGraw-Hill Education.
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### **7.16 Answer to Self-Check Questions**

7.12.1 A company that pays a large dividend relative to the market price is called an income stock.

7.12.2 A warrant is a certificate giving its holder the right to purchase securities at a stipulated price within a specified time limit or perpetually.



**EQUITIES IN INDIA**

**STRUCTURE**

- 8.1 Concept of Market
- 8.2 Securities Market in India: An Overview
- 8.3 Structure and Size of the Market
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**8.1 Concept of Market**

A market is a location where buyers and sellers come into contact to exchange goods or services. Markets can exist in various forms depending

**Can Markets Exist in Different Forms?**

Yes, the markets do exist in different forms depending on the nature of location and mode of contact. It can have a physical location where buyers and sellers come in direct contact with each other or a virtual location where the buyers and sellers contact each other employing advanced means of communication. There is another form of market where actual buyers and sellers achieve their objectives through intermediaries.

**8.2 Securities Markets in India: An Overview**

The process of economic reforms and liberalization was set in motion in the mid-eighties and its pace was accelerated in 1991 when the economy suffered severely from a precariously low foreign exchange reserve, burgeoning imbalance on the external account, declining industrial production, galloping inflation, and a rising fiscal deficit. The economic reforms, being an integrated process, included deregulation of industry, liberalization in foreign investment, regime, restructuring and liberalization of trade, exchange rate, and tax policies, partial disinvestments of government holding in public sector companies, and financial sector reforms. The reforms in the real sectors such as trade, industry, and fiscal policy were initiated first to create the necessary macroeconomic stability for launching financial sector reforms, which sought to improve the functioning of banking and financial institutions (FIs) and strengthen money and capital markets including the securities market.

The securities market reforms specifically included:

- Repeal of the Capital Issues (Control) Act, 1947 through which the Government used to expropriate seigniorage and allocate resources from the capital market for favored uses;
- Enactment of the Securities and Exchange Board of India Act, 1992 to provide for the establishment of the Securities and Exchange Board of India (SEBI) to regulate and promote the development of the securities market;
- Setting up of NSE in 1993, passing of the Depositories Act, 1996 to provide for the maintenance and transfer of ownership of securities in book entry form,

- Amendments to the Securities Contracts (Regulation) Act, 1956 (SCRA) in 1999 to provide for the introduction of futures and option.
- Other measures included free pricing of securities, investor protection measures, use of information technology, dematerialization of securities, improvement in trading practices, evolution of a more efficient and transparent regulatory framework, emergence of several innovative financial products and services and specialized FIs etc.
- These reforms are aimed at creating an efficient and competitive securities market subject to effective regulation by SEBI which would ensure investor protection.

### **A Profile**

The corporate securities market in India dates back to the 18th century when the securities of the East India Company were traded in Mumbai and Kolkata. The brokers used to gather under a Banyan tree in Mumbai and under a neem tree in Kolkata for this purpose. However, the real beginning came in the 1850s with the introduction of joint stock companies with limited liability. The 1860s witnessed feverish dealings in securities and reckless speculation. This brought brokers in Bombay together in July 1875 to form the first formally organized stock exchange in the country viz. The Stock Exchange, Mumbai. Ahmedabad stock exchange in 1894 and 22 others followed this in the 20th century. The process of reforms has led to a pace of growth almost unparalleled in the history of any country. The securities market in India has grown exponentially as measured in terms of the amount raised from the market, the number of stock exchanges and other intermediaries, the number of listed stocks, market capitalization, trading volumes and turnover on stock exchanges, investor population, and price indices. Along with this, the profiles of the investors, issuers, and intermediaries have changed significantly. The market has witnessed fundamental institutional changes resulting in a drastic reduction in transaction costs and significant improvements in efficiency, transparency, and safety, thanks to the National Stock Exchange. Indian market is now comparable to many developed markets in terms of several parameters.

There are very few countries that have a higher turnover ratio than India. Market capitalization as a percentage of GNP compares favorably even with advanced countries and is much better than emerging markets. In terms of several companies listed on stock exchanges, India is second to none. At the end of 1998, the International Finance Corporation (IFC) ranked India as the 21st in terms of market capitalization, and 19th in terms of total value traded in stock exchanges. 142 Indian stocks, which accounted for 66.4% of market capitalization and 74.1% of total value traded, had a 5.7% weight in the IFC Global Composite Index of emerging market stocks. In the case of the IFC investable Composite Indices, which include emerging market stocks that are determined by the IFC to be legally and practically available to foreign portfolio investors, India's share was only 2.31%. India has also the distinction of having the second-largest investor population in the world.

According to a study by the Society for Capital Market Research and Development (Investor Disenchantment with Equities by L. C. Gupta, Indian Financial Markets & Institutions, in October 1999) estimated investor population in India is stagnated at 20 million since 1995. These figures indicate the tremendous potential for growth of the Indian securities market.

### **8.3 Structure and Size of the Markets**

Today India has two national exchanges, the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE). Each has fully electronic trading platforms with around 9400 participating broking outfits. Foreign brokers account for 29 of these. There are some 3600 companies listed on the respective exchanges with a combined market capitalization near \$1800bn. Any market that has experienced this sort of growth has an equally substantial demand for highly efficient settlement procedures. In India, 99.9% of the trades, according to the National Securities Depository, are settled in dematerialized form in a T+2 rolling settlement. The capital market is one environment. In



addition, trades are guaranteed by the National Clearing Corporation of India Ltd (NSCCL) and Bank of India Shareholding Ltd (BOISL), Clearing Corporation houses of NSE and BSE respectively. The main functions of the Clearing Corporation are to work out (a) what counterparties owe and (b) what counterparties are due to receive on the settlement date.

Furthermore, each exchange has a Settlement Guarantee Fund to meet any unpredictable situation and a negligible trade failure of 0.003%. The Clearing Corporation of the exchanges assumes the counterparty risk of each member and guarantees settlement through a fine-tuned risk management system and an innovative method of online position monitoring. It also ensures the financial settlement of trades on the appointed day and time irrespective of default by members to deliver the required funds and/or securities with the help of a settlement guarantee fund.

#### **8.4 Style of Operating**

Indian stock markets operated in the age-old conventional style of fact-to-face trading with bids and offers being made by open outcry. At the Bombay Stock Exchange, about 3,000 persons would mill around in the trading ring during the trading period of two hours from 12 noon to 2.00 p.m.

Indian stock markets are quote-driven markets with the jobbers standing at specific locations in the trading ring called trading posts and announcing continuously the two-way quotes for the scrips traded at the post. As there is no prohibition on a jobber acting as a broker and vice versa, any member is free to do jobbing on any day. In actual practice, however, a class of jobbers has emerged who generally confine their activities to jobbing only. As there are no serious regulations governing the activities of jobbers, the jobbing system is beset with several problems like wide spreads between bid and offer particularly in thinly traded securities, lack of depth, total absence of jobbers in a large number of securities, etc. In highly volatile scrips, however, the spread is by far the narrowest in the world being just about - 0.1 to 0.25 percent as compared to about 1.25 percent in respect of alpha stocks, i.e. the most highly liquid stocks, at the International Stock Exchange of London. The spreads widen as liquidity decreases, being as much as 25 to 30 percent or even more while the average touch of gamma stocks, i.e. the least liquid stocks at the International Stock Exchange, London, is just about 6 to 7 percent. This is basically because of the high velocity of transactions in the active scrips. Shares in the specified group account for over 75 percent of trading in the Indian stock markets while over 25 percent of the securities do not get traded at all in any year. Yet, it is significant to note that out of about 3,000 securities listed on the Bombay Stock Exchange, about 1,200 securities used to get traded on any given trading day.

In 2000 the BSE used this index to open its derivatives market, trading Sensex futures contracts. The development of Sensex options along with equity derivatives followed in 2001 and 2002, expanding the BSE's trading platform. In March 1995, the BSE started the computerized trading system, called BOLT - BSE online trading system. Initially, only 818 scrips were covered under BOLT. In July 1995, all scrips (more than 5,000) were brought under the computerized trading system. The advantages realized are (a) improved trading volume; (b) reduced spread between t' i.e. buy-sell orders; c) better trading in odd lot shares, rights issues, etc. The development of Sensex options along with equity derivatives followed in 2001 and 2002, expanding the BSE's trading platform.

#### **8.5 Market Basics**

##### **Electronic trading**

Electronic trading eliminates the need for physical trading floors. Brokers can trade from their offices, losing fully automated screen-based processes. Their workstations are connected to a Stock exchange central computer via satellite using Very Small Aperture Terminus (VSATs). The orders placed by brokers reach the Exchange's central computer and are matched electronically.

Exchange in India

The. Stock Exchange, Mumbai (BSE) and the National Stock Exchange (NSE) are the country's two

leading Exchanges. There are 20 other regional Exchanges, connected via the Inter-Connected Stock Exchange (IC3E). The BSE and NSE allow nationwide trading via their VSAT systems.

### **Index**

An Index is a comprehensive measure of market trends, intended for investors who are concerned with general stock market price movements. An Index comprises stocks that have large liquidity and market capitalization. Each stock is given a weightage in the Index equivalent to its market capitalization. At the NSE, the capitalization of NIFTY (fifty selected stocks) is taken as a base Capitalization, with the value set at 1000. Similarly, the BSE Sensitive Index or Sensex comprises 30 selected stocks. The Index value compares the day's market capitalization vis-a-vis base capitalization and indicates how prices in general have moved over some time.

### **8.6 Highlights of the Highly Attractive Indian Capital Markets**

Two major reasons why Indian securities are now increasingly regarded as attractive to international investors are the relatively high returns compared with more developed global markets as well as being part of emerging economies. As the fourth-largest economy in the world in PPP terms, India is a preferred destination for foreign direct investments (FDI);<sup>1</sup> India has strengths in information technology and other significant areas such as auto components, chemicals, apparel, pharmaceuticals, and jewelry. Despite a surge in foreign investments, rigid FDI policies resulted in a significant hindrance. However, due to some positive economic reforms aimed at deregulating the economy and stimulating foreign investment, India has positioned itself as one of the front-runners of the rapidly growing Asia Pacific Region. India has a large pool of skilled managerial and technical expertise. The size of the middle-class population stands at 50 million and represents a growing consumer market India's recently liberalized FDI policy (2005) allows up to a 100% FDI stake in venturers. Industrial policy reforms have substantially reduced industrial licensing requirements, removed restrictions on expansion, and facilitated easy access to foreign technology and foreign direct investment FDI. The upward-moving growth curve of the real-estate sector owes some credit to 3 booming economy and a liberalized FDI regime. In March 2005, the government amended the rules to allow 100 percent FDI in the construction business. This automatic route has been permitted in townships, housing, built-up infrastructure, and construction development projects including housing, commercial premises, hotels, resorts, hospitals, educational institutions, recreational facilities, and city- and regional-level infrastructure.

Several changes were approved in the FDI policy to remove the caps in most sectors. Fields that require relaxation in FDI restrictions include civil aviation, construction development, industrial parks, petroleum and natural gas, commodity exchanges, credit-information services and mining. But this still leaves an unfinished agenda of permitting greater foreign investment in politically sensitive areas such as insurance and retailing. FDI inflows into India reached a record \$19.5 billion in fiscal year 2006-07 (April-March, according to the government's Secretariat for Industrial Assistance. This was more than double the total of US\$ 7.8 bn in the previous fiscal year. The FDI inflow for 2007-08 has been reported as \$24 billion and for 2008-09, it is expected to be above \$35 billion. A critical factor in determining India's continued economic growth and realizing the potential to be an economic superpower is going to depend on how the government can create incentives for FDI flow across a large number of sectors in India.

### **8.7 Self-Check Questions**

- 8.7.1 At the NSE, the capitalization of NIFTY (fifty selected stocks) is taken as a base Capitalization. (True/False)
- 8.7.2 Name Leading stock exchanges in India.

### **8.8 Short Questions**

1. Number of Listed companies on NSE.
2. What is the trading duration of the Indian market?

### **8.9 Long Question**

1. Give an overview of the Securities Market in India.
2. What is Market? Discuss different forms of market in detail.

### **8.10 References**

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### **8.11 Answer to Self-Check Questions**

- 8.7.1 True
- 8.7.2 Bombay Stock Exchange and National Stock Exchange.

**TRADING IN SECURITIES: PRIMARY EQUITY MARKET**

**STRUCTURE**

- 9.1 Concept of Primary Market
- 9.2 Functions of Primary Market
- 9.3 Parties Involved in the New Issue
- 9.4 The Financial Institution
- 9.5 Placement of the Issue
- 9.6 Pricing of New Issue
- 9.7 Investor Protection in the Primary Market
- 9.8 Summary
- 9.9 Self-Check Questions
- 9.10 Short Questions
- 9.11 Long Questions
- 9.12 References
- 9.13 Answer to Self-Check Questions

**9.1 Concept of Primary Market**

Companies raise funds to finance their projects through various methods. The promoters can bring their own money borrow from financial institutions or mobilize capital by issuing securities. The funds may be raised through the issue of fresh shares at par or premium, preferences shares, debentures or global depository receipts. The main objectives of a capital issue are given below:

- To promote a new company
- To expand an existing company
- To diversify the production
- To meet the regular working capital requirements
- To capitalize the reserves

**New Issue Market (Primary Market)**

Stocks available for the first time are offered through the new issue market. The issuer may be a new company or an existing company. These issues may be of a new type or the security used in the past. In the new issue market, the issuer can be considered as a manufacturer. The issuing houses, investment bankers, and brokers act as the channel of distribution for the new issues. They take the responsibility of selling the stocks to the public.

**Relationship Between the Primary and Secondary Market**

1. The new issue market cannot function without the secondary market. The secondary market or the stock market provides liquidity for the issued securities the issued securities are traded in the secondary market offering liquidity to the stocks at a fair price.
2. The stock exchanges through their listing requirements, exercise control over the primary market. The company seeking listing on the respective stock exchange has to comply with all the rules and regulations given by the stock exchange.
3. The primary market provides a direct link between the prospective investors and the company. By providing liquidity and safety, the stock markets encourage the public to subscribe to the new issues. The marketability and the capital appreciation provided in the stock market are the major

factors that attract the investing public towards the stock market. Thus, it provides an indirect link between the savers and the company.

4. Even though they are complementary to each other, their functions and the organizational setup are different from each other. The health of the primary market depends on the secondary market and vice-versa.

### **9.2 The Function of Primary Market**

The main service functions of the primary market are origination, underwriting, and distribution. Origination deals with the origin of the new issue. The proposal is analyzed in terms of the nature of the security, the size of the issue, the timing of the issue and the floatation method of the issue. The underwriting contract makes the share predictable and removes the element of uncertainty in the subscription (underwriting is given in the latter part of this chapter). Distribution refers to the sale of securities to the investors. This is carried out with the help of the lead managers and brokers to the issue.

### **9.3 Parties Involved in the New Issue**

These are registrars to the issue, underwriters, bankers, advertising agencies, financial institutions and government / statutory agencies.

#### **Managers to the Issue**

Lead managers are appointed by the company to manage the public issue programs. Their main duties are (a) drafting of prospectus (b) preparing the budget of expenses related to the issue (c) suggesting the appropriate timings of the public issue (d) assisting in marketing the public issue successfully (e) advising the company in the appointment of registrars to the issue, underwriters, brokers, bankers to the issue, advertising agents, etc. (f) directing the various agencies involved in the public issue.

Many agencies are performing the role of lead managers to the issue. The merchant banking division of the financial institutions, subsidiaries of commercial banks, foreign banks, private sector banks, and private agencies are available to act as lead managers. Some of them are SBI Capital Markets Ltd. Bank of Baroda, Canara Bank, DSP Financial Consultant Ltd. ICICI Securities & Finance Company Ltd., etc. The company negotiates with prospective managers on its issue and settles its selection and terms of appointment. Usually, companies appoint lead managers with a successful background. There may be more than one manager to the issue. Sometimes the banks or financial institutions impose a condition while sanctioning term loans of underwriting assistance to be appointed as one of the lead managers to the issue. The fee payable to the lead managers is negotiable between the company and the lead manager. The fee agreed upon is revealed in the memorandum of understanding filed along with the offer document.

#### **Registrar to the Issue**

After the appointment of the lead managers to the issue, in consultation with them, the Registrar to the issue is appointed. Quotations containing the details of the various functions they would be performing and charges for them are called for selection. Among them the most suitable one is selected. It is always ensured that the registrar to the issue has the necessary infrastructure like computer, Internet and telephone.

The Registrars normally receive the share application from various collection centers. They recommend the basis of allotment in consultation with the Regional Stock Exchange for approval. They arrange for the dispatching of the share certificates. They hand over the details of the share allocation and other related registers to the company. Usually, registrars to the issue retain the issuer records at least for a period of six months from the last date of dispatch of letters of allotment to enable the investors to approach the registrars for redressal of their complaint.

#### **Underwriters**

Underwriting is a contract by means of which a person gives an assurance to the issuer to the effect that the former would subscribe to the securities offered in the event of non-subscription by the

person to whom they were offered. The person who assures is called an underwriter. The underwriters do not buy and sell securities. They stand as backup supporters and underwriting is done for a commission. Underwriting provides insurance against the possibility of inadequate subscription. Underwriters are divided into two categories (i) financial institutions and banks (ii) brokers and approved investment companies. Some of the underwriters are financial institutions, commercial banks, merchant bankers, members of the stock exchange, the Export and Import Bank of India etc. The underwriters are exposed to the risk of non-subscription and for such risk exposure they are paid an underwriting commission.

#### Bankers to the Issue

Bankers to the issue have the responsibility of collecting the application money along with the application form. The bankers to the issue generally charge a commission besides the brokerage, if any. Depending upon the size of the public issue more than one banker to the issue is appointed. When the size of the issue is large, 3 to 4 banks are appointed as bankers to the issue. The number of collection centers is specified by the central government. The bankers to the issue should have branches in the specified collection centers. In big or metropolitan cities more than one branch of the various bankers to the issue are designated as collecting branches are designated in the different towns of the state where the project is being set up. If the collection centers for application money are located nearby people are likely to invest the money in the company shares.

#### Advertising Agents

Advertising plays a key role in promoting the public issue. Hence, the past track record of the advertising agency is studied carefully. Tentative programs of each advertising agency along with the estimated cost are called for. After comparing the effectiveness and cost of each program with the other, a suitable advertising agency is selected in consultation with the lead managers to the issue. The advertising agencies take the responsibility of giving publicity to the issue on the suitable media. The media may be newspapers/magazines/ hoardings/ press release or a combination of all.

#### 9.4 The Financial Institutions

Financial institutions generally underwrite the issue and lend term loans to the companies. Hence, normally they go through the draft of prospectus, study the proposed program for public issue and approve them. IDBI, IFCI & ICICI, LIC, GIC AND UTI are the some of the financial institutions that underwrite and give financial assistance. The lead manager sends the draft prospectus of company to the financial institutions and includes their comments, if any in the revised draft.

#### Government and Statutory Agencies

The various regulatory bodies related with the public issue are:

1. Securities Exchange Board of India
2. Registrar of companies
3. Reserve Bank of India (if the project involves foreign investment)
4. Stock Exchange where the issue is going to be listed
5. Industrial licensing authorities
6. Pollution control authorities (clearance for the project has to be stated in the prospectus)

#### 9.5 Placement of the Issue

The initial issue is floated 1. Through, prospectus 2. Bought out deals/offers for sale 3. Private placement 4. Right issue 5. Book building.

#### Offer Through Prospectus

According to the Companies (Amendment) Act 1985, application forms for shares of a company should be accompanied by a Memorandum (abridged prospectus). In simple terms a prospectus document gives details regarding the company and invites offers for subscription or purchase of any shares or debentures from the public. The draft prospectus has to be sent to the Regional Stock Exchange where the

shares of the company are to be listed and also to all other stock exchanges where the shares are proposed to be listed. The stock exchange scrutinizes the draft prospectus. After scrutiny if there is any clarification needed, the stock exchange writes to the company and also suggests modification if any. The prospectus should contain details regarding the statutory provisions for the issue, program of public issue-opening, closing and earliest closing date of the issue, issue to be listed at, highlights and risk factors, capital structure, board of directions, registered office of the company, brokers to the issue, brief description of the issue, cost of the project, projected earnings and other such details. The board, lending financial institutions and the stock exchanges in which they are to be listed should approve the prospectus. Prospectus is distributed among the stock exchanges, brokers, underwriters, collecting branches of the bankers and to the lead managers. The salient features of the prospectus are

#### **Bought out Deals (Offer for Sale)**

Here, the promoter places his shares with an investment banker (bought out dealer or sponsor) who offer it to the public at a later date. In other words, in a bought-out deal, an existing company off-loads a part of the promoters' capital to a wholesaler instead of making a public issue. The wholesaler is invariably a merchant banker or sometimes just a company with surplus cash. In addition to the main sponsor, there could be individuals and other smaller companies participating in the syndicate. The sponsors hold on to these shares for a period and at an appropriate date they offer the same to the public. The hold on period may be as low as 70 days or more than a year.

In a bought-out deal, pricing is the essential element to be decided. The bought-out dealer decides the price after analyzing the viability, the gestation period, promoters background and future projections. Bought out dealer sheds the shares at a premium to the public.

There are many advantages for the issuing company. Firstly, a medium or small sized company, which is already facing working capital shortage, cannot afford to have long lead-time before the funds could be mobilized from the public. Bought out deal helps the promoters to realize the funds without any loss of time.

Secondly, the cost of raising funds is reduced in bought out deals. For issuing share to the public the company incurs heavy expenses, which may invariably be as high as 10 percent of the cost of the project, if not more.

Thirdly, bought out deal helps the entrepreneurs who are not familiar with the capital market but have sound professional knowledge to raise funds. Sponsors of the deal are mostly concerned with the promoters' background and government policies than about the past track record or financial projections. This helps the new entrepreneur to raise adequate capital from the market.

Fourthly, for a company with no track record of projects, public issues at a premium may pose problems, as SEBI guidelines come in the way. The stipulations can be avoided by a bought our deal. Companies sell the shares at a premium to the sponsors and they can offload the shares to the public at a higher premium.

Fifthly, to the investors bought out deals possess low risk since the sponsors have already held the shares for a certain period and the projects might have been completed or in the verge of completion, the investors need not wait for returns. The major disadvantage! of the bought-out deals is, sponsors future deals is, sponsors are able to create a positive image about the shares and sell them at a hefty premium. Single investment banker gives scope for manipulation of the results. Insider trading and price rigging could be carried out, which can be neither detected nor penalized.

#### **Private Placement**

In this method the issue is placed with a small number of financial institutions, corporate bodies and high net worth individuals. The financial intermediaries purchase the shares and sell them to investors at a later date at a suitable price. The stock is placed with issue house client with the medium of placing

letter and other documents which taken together contribute a prospectus, giving the information regarding the issue. The special feature of the private placement is that the issues are negotiated between the issuing company and the purchasing intermediaries. Listed public limited company as well as closely held private ltd. company can access the public through the private placement method. Mostly in the private placement securities are sold to financial institutions like Unit Trust of India, mutual funds, insurance companies, merchant banking subsidiaries of commercial banks and so on.

Through private placement equity shares, preference shares, cumulative convertible preference shares, debentures and bonds are sold. In India private placement market is witnessing the introduction of several innovative debt market instruments such as step down/step - up debentures, liquid debentures, bonds etc.

Private placement has several inherent advantages:

#### **Cost Effective**

Private placement is a cost-effective method of raising funds. In a public issue under writing, brokerage, printing, mailing and promotion account for 8 to 10 per cent of the issue cost. In the case of the private placement several statutory and non-statutory expenses are avoided'.

#### **Time Effective**

In the public issue the time required for completing the legal formalities and other formalities takes usually six months or more. But in the private placement the requirements to be fulfilled are less and hence, the time required to place the issue is less, mostly 2 to 3 months.

#### **Structure Effectiveness**

It can be structured to meet the needs of the entrepreneurs. It is flexible to suit the entrepreneurs and the financial intermediaries. To make the issue more attractive the corporate can provide discounts to the intermediaries who are buying it. This is not possible with the public issue with stringent rules and regulations. In the case of debentures, the interest ceiling cannot be breached in a public issue. Here the terms of the issue can be negotiated with purchasing institutions easily since they are few in number.

#### **Access Effective**

Through private placement a public limited company listed or unlisted can mobilize capital. Likewise issue of all size can be accommodated through the private placement either small or big where as in the public issue market, the size of the issue cannot fall below a certain minimum size.

#### **Private Placement in India**

The private placement technique is gaining importance in the Indian capital market. Private placements increased by 12.8 percent, accounting for as much as 49.1 per cent of the total resources mobilized by the government and non-government companies during 1996-97. The public sector has become a major user of private placements as its share in total private placement rose from an already high level of 69.5 per cent in 1995-96 to 83.4 per cent in 1996- 97.

#### **Rights Issue**

According to Sec 81 of the Companies Act 1956, if a public company wants to increase its subscribed capital by allotment of further shares after two years from the date of its formation or one year from the date of its first allotment, whichever is earlier should offer share at first to the existing share holders in proportion to the shares held by them at the time of offer. The shareholders have no legal binding to accept the offer and they have the right to renounce the offer in favor of any person. Shares of this type are called right shares. Generally right shares are offered at a advantageous rate compared with the market rate.

According to Section 81, the company has to satisfy certain conditions to issue right shares.

1. Right shares must be offered to the equity shareholders in the proportion to the capital paid on those shares.



2. A notice should be issued to specify the number of shares issued.
3. The time given to accept the right offer should not be less than 15 days.
4. The notice also should state the right of the shareholders to renounce the offer in favour of others.
5. After the expiry of the time given in the notice, the Board of Directors has the right to dispose the unsubscribe shares in such a manner, as they think most beneficial to the company.

### **Book Building**

Book building is a mechanism through which the initial public offerings (IPOS) take place in the U.S. Similar mechanisms are used in the primary market offerings of GDRs also. In this process the price determination is based on orders placed and investors have an opportunity to place orders at different prices as practiced in international offerings. The recommendations given by Malegam Committee paved way for the introduction of the book building process in the capital market in Oct 1995. Book-building involves firm allotment of the instrument to a syndicate created by the lead managers who sell the issue at an acceptable price to the public. Originally the portion of book building process was available to companies issuing more than Rs 100 cr. The restriction on the minimum size was removed and SEBI gave impression to adopt the book building method to issue of any size. In the prospectus, the company has to specify the placement portion under book building process. The securities available to the public are separately known as net offer to the public.

Among the lead managers or the syndicate members of the issue or the merchant bankers a member is nominated by the issuer company as a book runner and his name is mentioned in the draft prospectus. The book runner has to circulate the copy of the draft prospectus to be filed with SEBI among the institutional buyers who are eligible for firm allotment. The draft prospectus should indicate the price band within which the securities are being offered for subscription.

The offers are sent to the book runners. He maintains a record of names and number of securities offered and the price offered by the institutional buyer within the placement portion and the price for which the order is received to the book runners. The price is finalized by the book runner and the issuer company. The issue price for the placement portion and offer to the public should be the same. Underwriting agreement is entered into after the fixation of the price.

One day earlier to the opening of the issue to the public, the book runner collects the application forms along with the application money from the institutional buyers and the underwriters. The book runner and other intermediaries involved in the book building process should maintain records of the book building process. The SEBI has the right to inspect the records.

### **9.6 Pricing of New Issues**

Issue of capital prior to May 27, 1992 was governed by the Controller of Capital Issues Act 1947. Under the Act, the premium was fixed as per the valuation guidelines issued. The guidelines provided for fixation of a fair price on the basis of the net asset value per share on the expanded equity base taking into account, the fresh capital and the profit earning capacity. The repealing of the Capital Issue Control Act resulted in an era of free pricing of securities. Issuers and merchant bankers fixed the offer prices. Pricing of the public issue has to be carried out according to the guidelines issued by SEBI.

At premium Companies are permitted to price their issues at premium in the case of the following

- a. First issue of new companies set up by existing companies with the track record.
- b. first issue of existing private/closely held or other existing unlisted companies with three-year track record of consistent profitability.
- c. First public issue by exiting private/closely held or other existing unlisted companies without three-year track record but promoted by existing companies with a Five-year track record of consistent profitability.
- d. Existing private/closely held or other existing unlisted company with three- year track record of

consistent profitability, seeking disinvestments by offers to public without issuing fresh capital (disinvestment).

e. Public issue by existing listed companies with the last three years of dividend paying track record.

At par value in certain cases companies are not permitted to fix their issue prices at premium. The prices of the share should be at par. They are for

- a. First public issue by existing private, closely held or other existing unlisted companies without three-year track record of consistent profitability and
- b. Existing private/closely held and other unlisted companies without three-year track record of consistent profitability seeking disinvestment offer to public without issuing fresh capital (disinvestment).

### **Allotment of Shares**

According to SEBI regulation, the allocation of shares is done under proportionate allotment method. The allotment for each category is inversely proportional to the over subscription ratio. The applications will be categorized according to the number of shares applied for.

The allocation is done by proportionate basis. If the allocation to a applicant works out to be more than hundred but is not a multiple of hundred, the number excess of hundred and fifty would be rounded off to the higher multiple of 100 i.e. 200. If it is 148 then, it would, be rounded off to 100. If the shares allocated on a proportionate basis to any category are more than the shares allotted to applications in that category, the balance share allotment shall be first adjusted against any other category where the allotment of shares is not sufficient for proportionate allotment in that category. The balance shares, if any remaining after such, adjustment will be added to the category comprising of applicants applying for minimum number of shares.

### **Allotment Method**

Total number of applicants in the category of 100 s - 2000

Total number of shares applied for -2,00,000

Number of times oversubscribed -5

Proportionate allotment to that category  $2,00,000 \times \frac{1}{5} = 40,000$

Since the allotment has to be made in marketable lots, 100 shares will be allotted to 400 persons.

### **9.7 Investors Protection in the Primary Market**

To ensure healthy growth of primary market, the investing public should be protected. The term investors protection has a wider meaning in the primary market. The principal ingredients of investor protection are

- a. Provision of all the relevant information,
- b. Provision of accurate information and
- c. Transparent allotment procedures without any bias.

To provide the above-mentioned factors several steps-have been taken. They are project appraisal, underwriting, clearance of the issue document by the stock exchange and SEBI's scrutiny of the issue document.

### **9.8 Summary**

- ❖ In the new issue market stocks are offered for the first time. The functions and organization of the new issue market is different from the secondary market.
- ❖ In the new issue the lead managers manage the issue, the underwriters assure to take up the unsubscribed portion according to his commitment for a commissioned the bankers take up the responsibility of collecting the application form and money.
- ❖ Advertising agencies promote the new issue through advertising. Financial institutions and underwriter lend terms loans to the company. Government agencies regulate the issue.

- ❖ The new issue is offered through prospectus. The prospectus is drafted according to SEBI guidelines disclosing the needed information to the investing public.
- ❖ In the bought-out deal banks or a company buys the promoters shares and they offer them to the public at a later date. This reduces the cost of raising the fund.
- ❖ Private placement means placing of the issue with financial institutions. They sell shares to the investors at a suitable price.
- ❖ Right issue means the allotment of shares to the previous shareholders at a pro-ratio basis.
- ❖ Book building involves firm allotment of the instrument to a syndicate created by the lead manages. The book runner manages the issue.
- ❖ Worms are given by SEBI to price the issue. Proportionate allotment method is adopted in the allocation of shares.

Project appraisal, disclosure in the prospectus and clearance of the prospectus by the stock exchanges protect the investors in the primary market along with the active role played by the SEBI.

### **9.9 Self-Check Questions**

- 9.9.1 What is the main function of primary market?
- 9.9.2 Name any two regulatory bodies of public issues.

### **9.10 Short Questions**

1. What is relation Between Primary market and Secondary market?
2. How placement of the issue is done?

### **9.11 Long Questions**

1. Define the new issue market? How is it related to the secondary market?
2. What are the guidelines issued by the SEBI in pricing and allotment of the new issue?
3. What are the factors to be considered by the investors in selecting a public issue?
4. 'Vigilance on the part of investors could avoid their being caught up in the poor public issue'. How is it possible?
5. What are the steps taken by SEBI in the primary market to protect the investors?
6. Give an account of the recent trends in the primary market?

### **9.12 References**

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### **9.13 Answer to Self-Check Questions**

- 9.9.1 The main service functions of the primary market are origination, underwriting, and distribution.
- 9.9.2 SEBI and RBI.



**SECONDARY MARKET & ITS OPERATIONS**

**STRUCTURE**

- 10.1 Concept of Secondary Market
- 10.2 History of Stock Exchange in India
- 10.3 Functions of Stock Exchange
- 10.4 Member of the Stock Exchange
- 10.5 Main Financial products/instruments dealt in the secondary market
- 10.6 Margins
- 10.7 Self-Check Questions
- 10.8 Short Questions
- 10.9 Long Questions
- 10.10 References
- 10.11 Answer to Self-Check Questions

**10.1 Concept of Secondary Market**

The market for long-term securities like bonds, equity stocks, and preferred stocks is divided into primary market and secondary market. The primary market deals with the new issues of securities. Outstanding securities are traded in the secondary market, which is commonly known as the stock market predominantly deal in the equity shares. Debt instruments like bonds and debentures are also traded in the stock market. Well-regulated and active stock market promotes capital formation. The growth of the primary market depends on the secondary market. The health of the economy is reflected by the growth of the stock market.

Secondary Market refers to a market where securities are traded after being initially offered to the public in the primary market and/or listed on the Stock Exchange. The majority of the trading is done in the secondary market. The secondary market comprises of equity markets and debt markets.

For the general investor, the secondary market provides an efficient platform for trading of his securities. For the management of the company, Secondary equity markets serve as a monitoring and control conduit—by facilitating value-enhancing control activities, enabling implementation of incentive-based management contracts, and aggregating information (via price discovery) that guides management decisions.

**10.2 History of Stock Exchanges in India**

The origin of the stock exchanges in India can be traced back to the latter half of the 19th century. After the American Civil War (1860-61) due to the share mania of the public, the number of brokers dealing in shares increased. The brokers organized an informal association in Mumbai named “The National Stock and Share Brokers Association” in 1875.

Increased activity in trade and commerce during the First World War and Second War increased stock trading. Stock exchanges were established in different centers like Chennai, Delhi, Nagpur, Kanpur, Hyderabad and Bangalore. The growth of stock exchanges suffered a setback after the end of World War. Worldwide depression affected them. Most of the stock exchanges in the early stages had a speculative nature of working without technical strength. Securities and Contract Regulation Act, 1956 gave powers to the central government to regulate the stock exchanges. The stock exchanges in Mumbai, Calcutta, Chennai, Ahmedabad, Delhi, Hyderabad, and Indore were recognized by the SCR Act. The Bangalore stock

exchange was recognized only in 1963. At present we have 23 stock exchanges and 21 of them have hardware and software compliant to solve the Y2K problem.

Till the recent past, floor trading took place in all the stock exchanges. In the floor trading system, the trade takes place through an open outcry system during the official trading hours. Trading posts are assigned for different securities where buy and sell activities of securities take place. This system needs face-to-face contact among the traders and restricts the trading volume. The speed of the new information reflected in the prices was rather slow. The deals were also not transparent and the system favored the brokers rather than the investors.

The setting up of NSE and OTCEI with the screen-based trading facility resulted in more and more stock exchanges turning towards computer-based trading. Bombay Stock Exchange introduced the screen-based trading system in 1995, which is known as BOLT (Bombay On-line Trading System). There are 19 recognized stock exchanges in India. Mangalore Stock Exchange, Saurashtra Kutch Stock Exchange, Magadh Stock Exchange, and Hyderabad Stock Exchange have been derecognized by SEBI.

In terms of legal structure, the stock exchanges in India could be segregated into two broad groups - 16 stock exchanges which were set up as companies, either limited by guarantees or by shares, and 3 stock exchanges which were set up as associations of persons and later converted into companies, viz. BSE, ASE, and Madhya Pradesh Stock Exchange. Apart from NSE, all stock exchanges whether established as corporate bodies or Association of Persons, were earlier non-profit-making organizations. As per the demutualization scheme mandated by SEBI, all stock exchanges other than the Coimbatore stock exchange have completed their corporatization and demutualization process. Accordingly, out of 19 stock exchanges 18 are corporatized and demutualized and are functioning as for-profit companies, limited by shares.

### **10.3 Functions of Stock Exchange**

#### **Maintains Active Trading**

Shares are traded on the stock exchanges, enabling investors to buy and sell securities. The prices may vary from transaction to transaction. Continuous trading increases the liquidity or marketability of the shares traded on the stock exchanges.

#### **Fixation of Prices**

Price is determined by the transactions that flow from investors' demand and supplier's preferences. Usually, the traded prices are made known to the public. This helps the investors to make better decisions.

#### **Ensures Safe and Fair Dealing**

The rules, regulations and by-laws of the stock exchanges provide a measure of safety to the investors. Transactions are conducted under competitive conditions enabling the investors to get a fair deal.

#### **Aids in Financing the Industry**

A continuous market for shares provides a favorable climate for raising capital. The negotiability and transferability of the securities help the companies to raise long-term funds. When it is easy to trade the securities, investors are willing to subscribe to the initial public offerings. This stimulates capital formation.

#### **Dissemination of Information**

Stock exchanges provide information through their various publications. They publish the share prices traded daily along with the volume traded. A directory of corporate information is useful for the investors' assessment of the corporation. Handouts, handbooks, and pamphlets provide information regarding the functioning of the stock exchanges.

#### **Performance Inducer**

The prices of stock reflect the performance of the traded companies. This makes the corporation more concerned with its public image and tries to maintain good performance.

### **Self-regulating Organization**

The stock exchanges monitor the integrity of the members, brokers, listed companies, and clients. Continuous internal audit safeguards the investors against unfair trade practices. It settles the disputes between member brokers, investors, and brokers.

### **Regulatory Framework**

A comprehensive legal framework was provided by the Securities Contract Regulation Act, of 1956, and the Securities and Exchanges Board of India Act, of 1992. A three-tier regulatory structure comprising the Ministry of Finance, the Securities and Exchanges Board of India, and the Governing Boards of the Stock Exchanges regulates the functioning of stock exchanges.

The Stock Exchanges Division of the Ministry of Finance has powers related to the application of the provision of the SCR Act and the licensing of dealers in another area. According to the SEBI Act, the Ministry of Finance has the appellate and supervisory powers over the SEBI. It has the power to grant recognition to the Stock Exchanges and regulation of their operations. The Ministry of Finance has the power to approve the appointments of executive chiefs and nominations of public representatives in the Governing Boards of the stock exchanges. It has the responsibility of preventing undesirable speculation.

The Securities and Exchange Board of India the Securities and Exchange Board of India even though established in the year 1988, received statutory powers only on 30th Jan 1992. Under the SEBI Act, a wide variety of powers are vested in the hands of SEBI. SEBI has the power to regulate the business of stock exchanges, other security markets, and mutual funds. Registration and regulation of market intermediaries are also carried out by SEBI. It has the responsibility to prohibit fraudulent unfair trade practices and insider dealings. Takeovers are also monitored by the SEBI. Stock Exchanges have to submit periodic and annual returns to SEBI. SEBI has the multi-pronged duty to promote the healthy growth of the capital market and protect the investors.

### **The Governing Board**

The Governing Board of the stock exchange consists of elected member directors, government nominees, and public representatives. Rules, bylaws, and regulations of the stock exchange provide substantial powers to the Executive Director for maintaining the efficient and smooth day-to-day functioning of the stock exchange. The governing Board has the responsibility to maintain an orderly and well-regulated market.

The governing body of the stock exchange consists of 13 members of which 6 members of the stock exchange are elected by the members of the stock exchange (b) the central government nominates not more than three members, (c) The board nominates three public representatives (d) SEBI nominates persons not exceeding three and (e) the stock exchange appoints one Executive Director.

One-third of the elected members retire at an annual general meeting. The retired member can offer himself for election if he is not elected for two consecutive years. If a member serves in the governing body for two years consecutively, he should refrain from offering himself for another two years.

The members of the governing body elect, the President and vice-president. It needs no approval from the Central Government or the Board. The office tenure for the President and Vice-President is one year. They can offer themselves for re-election if they have not held office for two consecutive years. In that case, they can offer themselves for re-election after a gap of one-year period.

### **10.4 Member of Che Stock Exchange**

The Securities Contract Regulation Act of 1956 has provided uniform regulation for the admission of members in the stock exchanges. The qualifications for becoming a member of a recognized stock exchange are given below the minimum age prescribed for the members is 21 years. He/she should be an

Indian Citizen.

He should be, neither a bankrupt nor compounded with the creditors.

He should not be convicted of fraud or dishonesty.

He should not be engaged in any other business connected with a company.

He should not be a defaulter of any other stock exchange.

The minimum required educational qualification is a pass in the 12th examination.

The Mumbai and Calcutta stock exchanges have set up training institutes to enable the members to understand the complexities of stock trading. In recent days highly qualified persons such as Company secretaries, Chartered accountants, and MBAs are becoming members. Corporate membership is also permitted now. The members transact business through their appointed members. The governing board has to approve the partnership and the appointed membership in other stock exchanges. If he applies before the completion of five years, he has to relinquish the If membership of the present membership before accepting the other.

The broker

A member/broker registered with the recognized stock exchange has to apply to the SEBI for registration. Likewise, a sub-broker even though he is registered with the stock exchange should apply to SEBI for registration. Usually, the agreement between the broker and the sub-broker is carried out on a non-judicial stamp paper of Rs 10. The agreement generally specifies the authority and responsibility of the broker and sub-broker.

The broker has to abide by the code of conduct laid down by the SEBI. The code of conduct prevents malpractice, and manipulation and gives other statutory requirements. If a broker is involved in manipulation or price rigging or gives false information, his registration is likely to be suspended. If the rules and regulations regarding insiders' trading and takeover codes are not adhered to, the registration may even be canceled.

Broker and the Investor

1. The broker should provide adequate information regarding the stocks.
2. The broker should be capable of giving short-term and long-term investment suggestions to the investors.
3. The broker should be able to confirm the purchase and sale of the securities quickly.
4. He should be able to provide price quotes quickly, which is now possible with the computer network.
5. The broker should be noted for his integrity. He should have a good name in the society.
6. The- broker should have adequate experience in the market to make correct decisions.
7. The broker should have contact with other stock exchanges to execute the order profitably.
8. The broker should also offer incidental services like arranging for financing the clients' transactions.

### **10.5 Main financial products/instruments dealt in the secondary market:**

Equity: The ownership interest in a company of holders of its common and preferred stock. The various kinds of equity shares are as follows:

#### **Equity Shares:**

An equity share, commonly referred to as an ordinary share also represents a form of fractional ownership in which a shareholder, as a fractional owner, undertakes the maximum entrepreneurial risk associated with a business venture. The holders of such shares are members of the company and have voting rights.

- ❖ Rights Issue / Rights Shares: The issue of new securities to existing shareholders at a ratio to



those already held.

- ❖ **Bonus Shares:** Shares issued by the companies to their shareholders free of cost by capitalization of accumulated reserves from the profits earned in the earlier years.
- ❖ **Preferred Stock / Preference shares:** Owners of these kinds of shares are entitled to a fixed dividend or dividend calculated at a fixed rate to be paid regularly before dividend can be paid in respect of equity share. They also enjoy priority over the equity shareholders in payment of surplus. But in the event of liquidation, their claims rank below the claims of the company's creditors, bondholders / debenture holders.
- ❖ **Cumulative Preference Shares:** A type of preference shares on which dividend accumulates if remains unpaid. All arrears of preference dividend have to be paid out before paying dividend on equity shares.
- ❖ **Cumulative Convertible Preference Shares:** A type of preference shares where the ' dividend payable on the same accumulates, if not paid. After a specified date, these shares will be converted into equity capital of the company.
- ❖ **Participating Preference Share:** The right of certain preference shareholders to participate in profits after a specified fixed dividend contracted for is paid. Participation right is linked with the quantum of dividend paid on the equity shares over and above a particular specified level.
- ❖ **Security Receipts:** Security receipt means a receipt or other security, issued by a securitization company or reconstruction company to any qualified institutional buyer under a scheme, evidencing the purchase or acquisition by the holder thereof, of an undivided right, title or interest in the financial asset involved in securitization.
- ❖ **Government securities (G-Secs):** These are sovereign (credit risk-free) coupon-bearing instruments that are issued by the Reserve Bank of India on behalf of the Government of India, in lieu of the Central Government's market borrowing program. These securities have a fixed coupon that is paid on specific dates on a half-yearly basis. These securities are available in wide range of maturity dates, from short-dated (less than one year) to long dated (up to twenty years).
- ❖ **Debentures:** Bonds issued by a company bearing a fixed rate of interest usually payable half yearly on specific dates and principal amount repayable on particular date on redemption of the debentures. Debentures are normally secured/charged against the asset of the company in favor of debenture holder.
- ❖ **Bond:** A negotiable certificate evidencing indebtedness. It is normally unsecured. A debt security is generally issued by a company, municipality or government agency. A bond investor lends money to the issuer and in exchange, the issuer promises to repay the loan amount on a specified maturity date. The issuer usually pays the bond holder periodic interest payments over the life of the loan. The various types of Bonds are as follows-
- ❖ **Zero Coupon Bond:** Bond issued at a discount and repaid at a face value. No periodic interest is paid. The difference between the issue price and redemption price represents the return to the holder. The buyer of these bonds receives only one payment, at the maturity of the bond.
- ❖ **Convertible Bond:** A bond giving the investor the option to convert the bond into equity at a fixed conversion price.
- ❖ **Commercial Paper:** A short term promise to repay a fixed amount that is placed on the market either directly or through a specialized intermediary. It is usually issued by companies with a high credit standing in the form of a promissory note redeemable at par to the holder on maturity and therefore, doesn't require any guarantee. Commercial paper is a money market instrument issued normally for tenure of 90 days.

- ❖ Treasury Bills: Short-term (up to 91 days) bearer discount security issued by the Government as a means of financing its cash requirements.

### **Types of Orders**

Buy and sell orders are placed with the members of the stock exchanges by the investors. The orders are of different types.

#### **Limit Orders**

Orders are limited by a fixed price. 'Buy Reliance Petroleum at Rs 50. Here, the order has clearly indicated the price at which it has to be bought and the investor is not willing to give more than Rs 50.

#### **Best Rate Order**

Hence the buyer or seller gives the freedom to the broker to execute the order at the best possible rate quoted on that particular date for buying. It may be the lowest rate for buying and the highest rate for selling.

#### **Discretionary Order**

The investor gives the range of price for purchase and sale. The broker can use his discretion to buy within the specified limit. Generally, the approximate price is fixed. The order stands as this 'Buy BRC 100 shares around Rs 40'.

#### **Stop Loss Order**

The orders are given to limit the loss due to unfavorable price movements in the market. A particular limit is given for waiting. If the price falls below the limit, the broker is authorized to sell the shares to prevent further loss. Ex. Sell BRC Ltd at Rs 25, stop loss at Rs 22.

#### **Buying and Selling Shares**

To buy and sell shares the investor has to locate a registered broker or sub broker who can render prompt and efficient service to him. Then orders to buy or sell the specified number of shares of a company of the investor's choice are placed with the broker. The orders may be of any of the above-mentioned type. After receiving the order, the broker tries to execute the order in his computer terminal. Once matching order is found, the order is executed. The broker delivers the contract note to the investors. It gives details regarding: the name of the company, number of shares bought, price, brokerage, and date of delivery of shares. In the physical trading form, once the broker gets the share certificate through the clearing houses, he delivers the share certificate along with transfer deed to the investor. The investor has to fill the transfer deed and stamp it. As now it has to be compulsorily bought in the demat form, the broker has to give a matching instruction to his depository participant to transfer the share bought to the investors' account. The investor should be an account holder in any of the depository participant. In the case of sale of shares on receiving payment from the purchasing broker, the broker effects the payment to the investor.

#### **Share Groups**

The listed shares are divided into three categories: Group A shares (specified shares) B1 shares and B shares. The last two groups are referred to cleared securities or no-specified shares. In 'A' group, shares are selected on the basis of equity, market capitalization and public holding. Further it should have a good track record and a dividend paying company. It should have good growth potential too. The trading volumes and the investors base are high in 'A' group share. Any company when it satisfies these criteria would be shifted from 'B' group to 'A' group. In the B1 group actively traded shares are included. Carry forward transactions are not allowed in this group. Settlement take place through the clearing house along with the 'A' group shares. The settlement cycle and the procedure are identical to 'A' group security. The rest of the company shares listed form the B group.

#### **Settlement Cycle**

Here has been a move from account settlement period to rolling settlement system. The settlement cycle has been gradually brought down from 15 days to just 2 days (T+2) thus putting the Indian capital

market in the elite group of advanced markets of the world. In a Rolling Settlement, trades executed during the day are settled based on the net obligations for the day.

Presently the trades pertaining to the rolling settlement are settled on a T+2day basis where T stands for the trade day. Hence, trades executed on a Monday are typically settled on the following Wednesday (considering 2 working days from the trade day). The funds and securities pay-in and pay-out are carried out on T+2 day.

### **Price Filters**

Abnormal rise or fall in the prices of the securities destroys the investors' confidence and such price fluctuations can lead to high transaction risk. Brokers create instability in prices to earn quick profits. Broker's interest in the stock is initially triggered by market rumors such as takeover, bonus issue, good or bad financial performance and management problems. If the rumors are positive, there would be a scramble for the company's shares. This is done in anticipation of the increase in demand once the information becomes public. Prices can be increased by the traders through circular trading. Circular trading refers to the trading that takes place among the brokers to manipulate the prices for their personal gain. For example, if there is a rumor about the issue of bonus share by a company, the traders enter into matching deals among themselves (that is buy and sell order) at a price higher than the prevailing market price. Market psychology is that when the price increases investors think that it will go up further and enter into the market. At this juncture, the traders exit booking profits from the transactions. The investors are caught unaware of the real situation. To prevent these happenings price filters are introduced.

### **Intraday Price Bands**

Here the price range is fixed to restrict the price movement of a scrip during a trading session. For example, take the case of TVS Suzuki scrip. Suppose, the stock closed on Monday at Rs. 500 at the NSE, it would be allowed to trade on Tuesday only in a 10% percent variation of Monday's close. It would be allowed to trade between Rs. 450 and Rs. 550.

The intra-day price band is laid by all the exchanges depending upon the price and volatility of the stock. At NSE the Nifty and Junior Nifty stocks' have 10 percent and other stocks have five percent, intraday price bands. In August 1997, BSE reduced the filter limit from 10 percent to 5 percent in 32 stocks because of the uncertain market conditions.

The price filter ensures that the stock is traded only within the given range. Transaction beyond the band is rejected by the system. For example, if there is an order to buy TVS Suzuki scrip at Rs. 555, the system will not accept the trade.

### **Limitations**

The intraday price band does not allow for the proper reaction in prices for the given information. Consider the situation of the Thai currency crisis, it affected exports to that nation and in turn, the share prices of some companies might have retreated. However, the price band places an artificial check on the reaction of the price, if the price band has to be released, the NSE has to get special permission from the SEBI.

Secondly, the intra-day price band does not curb the automatic price movements within a day. For example, the TVS Suzuki scrip may open on Tuesday at Rs. 470 and rise immediately to an intraday high of Rs. 535 and may finally close at Rs. 485. The sudden increase of Rs. 65 would increase the investment risk due to the heavy transactions that take place on BSE and NSE.

To smoothen the price volatility Madras Stock Exchange has introduced graded price filters. In MSE, the intraday price band prevents an order from being executed at Rs. 530 after being opened at Rs. 470. An intermediate price filter is applied at Rs. 468,80 (that is 4 percent of Rs. 470). If there are no matching orders at this price, the stock price is frozen at this level for the day. If the matching is order is

found, it would be allowed to rise further by another intermediate price filter level, say 6 percent. Such graded price filters effectively prevent knee-jerk price movements.

### **10.6 Margins**

Margins are additional filters applied by the stock exchanges to curb the price volatility. For every transaction undertaken by the broker he has to deposit a margin amount to the stock exchange. The margin amount paid is used as a tool to discourage the speculative and circular trading, it can be made simple with an example, if the NSE were to impose a margin of 20 per cent, traders would have to deposit Rs. 20 with the exchange for every Rs. 100 worth of shares transacted. This would certainly dampen the circular trading. Margins are of different types.

- ❖ Gross Exposure margin
- ❖ Net Exposure margin
- ❖ Mark to Market margin
- ❖ Concentration margin
- ❖ Special margin

#### **Gross Exposure Margin**

This margin limits the risk exposure of the trader by putting an upper limit to his transaction. This would prevent him from trading beyond his means and the default risk. In the NSE the gross exposure is up to 7 times of the trader's base capital, with Rs. 1 lakh he can trade up to Rs. 7 lakhs. If it crosses that limit, he has to either switch over his terminal or should bring the gross exposure within the limits or he can deposit additional margin with the exchange to increase the limit.

#### **Net Exposure Margin**

Here, the trader has to deposit margins at a graded basis if the purchase is greater than sales in any day. This is imposed to curtail the risk involved in heavy purchase of shares without matching sales. For example, if a trader buys one lakh shares of HUL at Rs 185 and sells only 30,000 for the net outstanding position of 70,000 shares poses as threat. Hence, the trader has to deposit a margin for the net exposure. Ten per cent margin is for net exposures excess of the total purchase.

#### **Marked to Market Margin**

The gross and net exposure margins try to stabilize the high transaction volume. The risk arises not only through the volume transacted but also through the price volatility. The trader may be able to find a matching order only at a lower price. For example, if HUL stock price falls from Rs 185/- at the end of the trading session, the exposure risk would be high for the trader.

In the mark to market margin the trader has to deposit a sum that would be a fixed percentage of the product of the difference between the closing selling and purchasing price and the outstanding net position at the end of the day. This would be 50% of the price difference on the scrips, which fluctuate by 5% in a day or 10% over a settlement period. This margin is not imposed on share with market value of Rs 50 or less.

#### **Concentration Ratio Margin**

This margin is levied to prevent the trader showing interest on a few stocks to manipulate their prices. Margin is computed on a graded basis, if 70 per cent of trader's total turnover in the previous quarter is derived from three or fewer stocks.

#### **Special Margin**

Special margins are imposed to arrest price rigging. If there is a high degree of volatility in a particular scrip's prices, even 100 per cent margin is imposed by the exchange. The 100 per cent margin curbs the high degree of price fluctuations.

## **Recent Trends in the Margin**

Margin Trading is trading with borrowed funds/securities. It is essentially a leveraging mechanism which enables investors to take exposure in the market over and above what is possible with their own resources. SEBI has been prescribing eligibility conditions and procedural details for allowing the Margin Trading Facility from time to time.

Corporate brokers with- net worth of at least Rs.3 crore are eligible for providing Margin trading facility to their clients subject to their entering into an agreement to that effect. Before providing margin trading facility to a client, the member and the client have been mandated to sign an agreement for this purpose in the format specified by SEBI. It has also been specified that the client shall not avail the facility from more than one broker at any time.

The facility of margin trading is available for Group 1 securities and those securities that are offered in the initial public offers and meet the conditions for inclusion in the derivatives segment of the stock exchanges.

For providing the margin trading facility, a broker may use his own funds or borrow from scheduled commercial banks or NBFCs regulated by the RBI. A broker is not allowed to borrow funds from any other source.

The "total exposure" of the broker towards the margin trading facility should not exceed the borrowed funds and 50 percent of his "net worth". While providing the margin trading facility, the broker has to ensure that the exposure to a single client does not exceed 10 percent of the "total exposure" of the broker.

The initial margin has been prescribed as 50% and the maintenance margin has been prescribed as 40%.

In addition, a broker has to disclose to the stock exchange details on gross exposure including name of the client, unique identification number under the SEBI (Central Database of Market Participants) Regulations, 2003, and name of the scrip.

If the broker has borrowed funds to provide a margin trading facility, the name of the lender and the amount borrowed should be disclosed by the next day.

The stock exchange, in turn, has to disclose the scrip-wise gross outstanding in margin accounts with all brokers to the market. Such disclosure regarding margin trading done on any day shall be made available after the trading hours on the following day.

The arbitration mechanism of the exchange would not be available for settlement of disputes, if any, between the client and broker, arising out of the margin trading facility. However, all transactions done on the exchange, whether normal or through margin trading facility, shall be covered under the arbitration mechanism of the exchange.

The normal course of online trading in the Indian market

- Step 1. Investor/trader decides to trade
- Step 2. Places an order with a broker to buy/sell the required quantity of respective securities
- Step 3. Best-priced order matches based on price-time priority
- Step 4. Order execution is electronically communicated to the broker's terminal
- Step 5. Trade confirmation slip issued to the investor/trader by the broker
- Step 6. Within 24 hours of trade execution, a contract note is issued to the investor/trader by the broker
- Step 7 Pay-in of funds and securities before T+2 day
- Step 8. Pay-out of funds and securities on T+2 day

In case of short or bad delivery of funds/securities, the exchange orders for an auction to settle the delivery. If the shares cannot be bought in the auction, the transaction is closed out as per SEBI guidelines.

### **10.7 Self-Check Questions**

10.7.1 Bombay Stock Exchange introduced the screen-based trading system in \_\_\_\_.

10.7.2 The holders of Equity shares are members of the company and have voting rights.  
(True/False)

### **10.8 Short Questions**

1. What are Government Securities?
2. Discuss different types of orders?

### **10.9 Long Questions**

1. Write Functions of Stock Exchange.
2. Discuss the History of the Stock Exchange in India.

### **10.10 References**

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### **10.11 Answer to Self-check Questions**

10.7.1 1995.

10.7.2 True.



**ANALYSIS & EVALUATION OF DEBT & EQUITY: DEBT VALUATION**

**STRUCTURE**

- 11.1 Debt/Bond Valuation
- 11.2 Types of Debt Instruments
  - 11.2.1 Money Market Instrument
  - 11.2.2 Govt. Securities & Govt. Guaranteed bonds
  - 11.2.3 Corporate debentures
- 11.3 Features of Debt Instrument
- 11.4 Rating of Debt Securities
- 11.5 Analysis of Convertible Bonds
- 11.6 Conversion Value and Option Value
- 11.7 Summary
- 11.8 Self-Check Questions
- 11.9 Short Questions
- 11.10 Long Questions
- 11.11 References
- 11.12 Answer to Self-Check Questions

**11.1 DEBT/BOND Valuation**

Debt instruments promise to pay a stipulated stream of cash flows. This generally comprises periodic interest payments over the life of the instrument and principal payment at the time of maturity.

A vast menu of debt instruments exists. They may be classified into two groups according to maturity, where maturity is defined as the length of time between the issue date and the redemption date. Debt instruments that have a maturity of one year or less are called money market instruments. Debt instruments that have a maturity of more than one year are called bonds (or debentures).

The debt market in India has registered impressive growth, particularly since 1993 and, not surprisingly, has been accompanied by increasing complexity in instruments, interest rates, methods of analysis, and so on. It is instructive to compare the characteristics of the pre-liberalization scenario with those of the post-liberalization scenario. This comparison is given in Exhibit 10.1.

Since debt instruments loom large in the world of finance, a basic understanding of certain analytical concepts and methods used in debt valuation is essential for students of finance.

**11.2 Types of Debt Instruments**

The variety of debt instruments may be classified as follows:

- Money market instruments
- Government securities and government-guaranteed bonds
- Corporate debentures

**11.2.1 Money Market Instruments**

Debt instruments that have a maturity of less than 1 year at the time of issue are called money market instruments. The important money market instruments in India are Treasury bills, certificates of deposits, and commercial paper.

Treasury Bills Treasury bills represent short-term obligations of the Government which have maturities like 91 days, 182 days, and 364 days. They do not carry an explicit interest rate (or coupon



rate). They are instead sold at a discount and redeemed at par value. Hence the implicit interest rate is a function of the size of the discount and the period of maturity.

Though the yield on Treasury bills is somewhat low, they have appeal for the following reasons: (i) They can be transacted readily as they are issued in bearer form, (ii) There is a very active secondary market for Treasury bills and the Discount and Finance House of India is a major market maker, (iii) Treasury bills are virtually risk-free.

### **Certificates of Deposit**

A certificate of deposit (CD) represents a negotiable receipt of funds deposited in a bank for a fixed period. It may be in a registered form or a bearer form. The latter is more popular as it can be transacted more readily, in the secondary market. Like Treasury bills, CDs are sold at a discount and redeemed at par value. Hence the implicit interest rate is a function of the size of the discount and the period of maturity.

CDs are a popular form of short-term investment for companies for the following reasons : (i) Banks are normally willing to tailor the denominations and maturities to suit the needs of the investors, (ii) CDs are fairly liquid, (iii) CDs are generally risk-free, (iv) CDs generally offer a higher rate of interest than Treasury bills or term deposits.

### **Commercial Paper**

Commercial paper represents short-term unsecured promissory notes issued by firms that are generally considered to be financially strong. Commercial paper usually has a maturity period of 90 days to 180 days. It is sold at a discount and redeemed at par. Hence the implicit rate is a function of the size of the discount and the period of maturity. Commercial paper is either directly placed with investors or sold through dealers. Commercial paper does not presently have a well-developed secondary market in India.

The main attraction of commercial paper is that it offers an interest rate that is typically higher than offered by Treasury bills or certificates of deposit. However, its disadvantage is that it does not have an active secondary market. Hence, it makes sense for firms that plan to hold till maturity.

### **11.2.2 Government Securities and Government-Guaranteed Bonds**

The largest borrowers in India are the central and state governments. The Government of India periodically sells central government securities. These are essentially medium to long-term bonds issued by the Reserve Bank of India on behalf of the Government of India. Interest payments on these bonds are typically semi-annual. State governments also sell bonds. These are also essentially medium to long-term bonds issued by the Reserve Bank of India on behalf of state governments. Interest payments on these bonds are typically semi-annual.

Apart from the central and state governments, a number of governmental agencies issue bonds that are guaranteed by the central government or some state government. Interest payments on these bonds are typically semi-annual.

### **11.2.3 Corporate Debt**

Bonds (or debentures) are issued frequently by public sector companies, financial institutions, and private sector companies.

A wide range of innovative debt securities have been created in India, particularly from early 1990s. This innovation has been stimulated by a variety of factors, the most important being the increased volatility of interest rates and changes in the tax and regulatory framework. A brief description of various types of corporate bonds is given below.

#### **Straight Bonds**

The straight bond (also called plain vanilla bond) is the most popular type of bond. It pays a fixed periodic (usually semi-annual) coupon over its life and returns the principal on the maturity date.

#### **Zero Coupon Bonds**

A zero-coupon bond (or just zero) does not carry any regular interest payment. It is issued at a

steep discount over its face value and redeemed at face value on maturity. For example, the Industrial Development Bank of India (IDBI) issued deep discount bonds in 1996 which have a face value, of Rs, 200,000 and a maturity period of 25 years. The bonds were issued at Rs. 5,300. These bonds carry call and put options.

### **Floating Rate Bonds**

Straight bonds pay a fixed rate of interest. Floating rate bonds, on the other hand, pay an interest rate that is linked to a benchmark rate such as the Treasury bill interest rate.

### **Bonds with Embedded Options**

Bonds may have options embedded in them. These options give certain rights to investors and/or issuers. The more common types of bonds with embedded options are:

- **Convertible Bonds:** Convertible bonds give the bond holder the right (option) to convert them into equity shares on certain terms.
- **Callable Bonds:** Callable bonds give the issuer the right (option) to redeem them prematurely on certain terms.
- **Puttable Bonds:** Puttable bonds give the investor the right to prematurely sell them back to the issuer on certain terms.

### **Commodity-Linked Bonds**

The payoff from a commodity linked bond depends to a certain extent on the price of a certain commodity. For example, in June 1986 Standard Oil Corporation issued zero coupon notes which would mature in 1992. The payoff from each note was defined as:  $\$1,000 + 200 [\text{Price per barrel of oil in dollars} - \$25]$ . The second term of the payoff, however, was subject to a floor of 0.

## **11.3 Features of Debt Instruments**

Bonds tend to be confusing because of complex provisions attached to them. The financial contract between the issuer and the holder of bonds is called the bond indenture which spells out the features of the bond in terms of collateral, sinking fund, call provision, protective covenants, and so on.

### **Collateral**

Collateral represents a pledge of assets in favor of the bond holders. It serves as an insurance against any possible default by the borrower.

### **Sinking Fund**

A sinking fund provision requires the issuing firm to retire a certain percentage of the bond issue at stipulated points of time.

### **Protective Covenants**

The bond indenture often contains several covenants to protect the interest of lenders. These covenants impose restrictions on management and give bondholders greater confidence that the firm will honor its commitments. For example, covenants may put limits on dividend payment, managerial compensation, and total borrowings.

### **Bond Pricing**

The value of a bond - or any asset, real or financial - is equal to the present value of the cash flows expected from it. Hence determining the value of a bond requires:

- An estimate of expected cash flows.
- An estimate of the required return. To simplify our analysis of bond valuation we will make the following assumptions:
  - ❖ The coupon interest rate is fixed for the term of the bond.
  - ❖ The coupon payments are made every year and the next coupon payment is receivable exactly a year from now.
  - ❖ The bond will be redeemed at par on maturity.

Given these assumptions, the cash flow for a non-callable bond comprises an annuity of a fixed coupon interest payable annually and the principal amount payable at maturity. Hence the value of bond is:

Where,

$$P = \sum_{t=1}^n \frac{C}{(1+r)^t} + \frac{M}{(1+r)^n}$$

P = value (in rupees)

n = number of years

C, = annual coupon payment (in rupees)

r = periodic required return

M = maturity value

t = time period when the payment is received

Since the stream of annual coupon payments is an ordinary annuity, we can apply the formula for the present value of an ordinary annuity. Hence the bond value is given by the formula-

$$P = C \times PVIFA_{r,n} + M \times PVIF_{r,n}$$

To illustrate how to compute the price of a bond, consider a 10-year, 12% coupon bond with a par value of 1,000. Let us assume that the required yield on this bond is 13%. The cash flows for this bond are as follows 10 annual coupon payments of Rs. 120

- ❖ Rs. 1000 principal repayment 10 years from now the value of the bond is:  $P * 120 * PVIFA_{13\%, 10yrs} + 1,000 * PVIF_{13\%, 10yrs}$
- =  $120 \times 5.426 + 1,000 \times 0.295 = 651.1 + 295 = \text{Rs. } 946.1$

#### **Bond Values with Semi-annual Interest**

Most of the bonds pay interest semi-annually. To value such bonds, we have to work with a unit period of six months, and not one year. This means that the bond valuation equation has to be modified along the following tones:

- ❖ The annual interest payment, C, must be divided by two to obtain the semi-annual interest payment.
- ❖ The number of years to maturity must be multiplied by two to get the number of half-yearly periods.
- ❖ The discount rate has to be divided by two to get the discount rate applicable to half-yearly periods.

With the above modifications, the basic bond valuation becomes:

Where p = value of bond

$C/2$  = semi-annual interest payment

$r/2$  = discount rate applicable to a half-year period

M = maturity value

2n = maturity period expressed in terms of half-yearly periods.

As an illustration, consider an 8-year, 12% coupon bond with a par value of Rs. 1,000 on which interest is payable semiannually. The required return on this bond is 12 percent.

Applying Eq(10.3), the value of the bond is :

+ Price-Yield Relationship

A basic property of a bond is that its price varies inversely with yield. The reason is simple. As the required yield increases, the present value of the cash flow decreases; hence the price decreases. Conversely, when the required yield decreases, the present value of the cash flow increases; hence the price increases. The graph of the price-yield relationship for any callable bond has a convex shape ^

### ❖ Relationship between Bond Price and Time

Since the price of a bond must equal its par value at maturity (assuming that there is no risk of default), bond prices change with time. For example, a bond that is redeemable for Rs. 1000 (which is its par value) after 5 years when it matures, will have a price of Rs. 1,000 at maturity, no matter what the current price is. If its current price is, say, Rs. 1000, it is said to be a premium bond. If this required yield does not change between now and the maturity date, the premium will decline over time as shown by curve A in Exhibit 10.3. On the other hand, if the bond has a current price of say Rs. 900, it is said to be a discount bond. Only when the current price is equal to par value - in such a case the bond is said to be a par bond - there is no change in price as time passes, assuming that the required yield does not change between now and the maturity date. Bonds are generally traded based on their prices. However, they are usually not compared in terms of price because of significant variations in cash flow patterns and other features. Instead, they are typically compared in terms of yield.

In the previous section, we learned how to determine the price of a bond and discussed how price and yield were related. We now discuss varieties of yield measures.

The commonly employed yield measures are: current yield, yield to maturity, yield to call, and realized yield to maturity. Let us examine how these yield measures are calculated.

### ❖ Current Yield

The current yield relates the annual coupon interest to the market price. It is expressed as

$$\text{Current Yield} = \text{Annual Interest} / \text{Price}$$

For example, the current yield of 10-year, 12 percent coupon bond with a par value of Rs. 1000 and selling for Rs. 950 is 12.63 percent.

The current yield calculation reflects only the coupon interest rate. It does not consider the capital gain (or loss) that an investor will realize if the bond is purchased at a discount (or premium) and held till maturity. It also ignores the time value of money. Hence it is an incomplete and simplistic measure of yield.

### ❖ Yield to Maturity

The yield to maturity (YTM) of a bond is the interest rate that makes the present value of the cash flows receivable from owning the bond equal to the price of the bond. Mathematically, it is the interest rate at which satisfies the equation: What is

$$P = \frac{C}{(1+r)} + \frac{C}{(1+r)^2} + \dots + \frac{M}{(1+r)^n}$$

P = price of the bond

C = annual interest (in rupees)

M = maturity value (in rupees)

N = number of years left to maturity

### Realized Yield to Maturity

The YTM calculation assumes that the cash flows received through the life of a bond are reinvested at a rate equal to the yield to maturity. This assumption may not be valid as reinvestment rate/s applicable to future cash flows may be different. It is necessary to define the future reinvestment rates and figure out the realized yield to maturity.

### Risk In Debt

Like any other investment, bonds should be viewed in terms of their risk and return. Bonds are subject to diverse risks, such as interest risk, inflation risk, real interest rate risk, default risk, call risk and liquidity risk.

### Interest Rate Risk

Interest rates tend to vary over time, causing fluctuations in bond prices. A rise in interest rates

will depress the market prices of outstanding bonds whereas a fall in interest rates will push the market prices up.

Interest rate risk, also referred to as market risk, is measured by the percentage change in the value of a bond in response to a given interest rate change. It is a function of the maturity period of the bond and its coupon interest rate.

Longer maturity period — Greater sensitivity of price to changes in interest rates.

Larger coupon (interest) payment — Lesser sensitivity of price to changes in interest rates. +

### **Inflation Risk**

Interest rates are defined in nominal terms. This means that they express the rate of exchange between current and future rupees. For example, a nominal interest of 12 percent on a one-year loan means that Rs 112 is payable a year hence for Rs 100 borrowed today. However, what really matters is the real rate of interest, the rate of exchange between current and future goods and services. Then the inflation is higher than expected, the borrower gains at the expense of the lender and vice versa. Put differently, inflation is a zero-sum game.

The impact of a change in the inflation rate is similar to that of a change in the interest rate. This means that inflation risk is greater for long-term bonds. Hence, in a period of volatile inflation rates, borrowers will be disinclined to issue long-term fixed-interest bonds, and investors, too, will be reluctant to buy such shares. During such times, floating-rate bonds and shorter-maturity bonds become more popular.

### **Real Interest Rate Risk**

Even if there is no inflation risk, borrowers and lenders are still exposed to the risk change in the real interest rate. Shifts in supply and/ or demand for funds will change the real rate of interest.

To understand the implications of real interest rate risk, consider an example. Suppose that the real interest rate falls from 6 to 4 percent because a combination of tax law changes and heightened competition drives down the real interest rate. In this case, a firm that has borrowed funds at 6 percent on its debt.

### **Default Risk**

Default risk refers to the risk accruing from the fact that a borrower did not pay interest and/ or principal on time.

Default risk, also referred to as 'Credit Risk', is normally gauged by the rating assigned to the debt instrument by an independent credit rating agency (like CRISIL, ICRA, or CARE). Other things being equal, bonds which carry a higher default risk (lower credit rating) trade at a higher yield to maturity. Put differently, they sell at a lower price compared to government securities which are considered free from default risk (as the government has the power to print money, it is believed that it will not default in honoring its commitments). Except in the case of highly risky instruments, referred to as junk bonds, investors seem to be more concerned with the perceived risk of default rather than the actual occurrence of default. Even though the actual default may be highly unlikely, they believe that a change in the perceived default risk of a bond would have an immediate impact on its market price.

### **Call Risk**

A bond may have a call provision that gives the issuer the option to call the bond before its scheduled maturity. The issuer would generally exercise the call option when interest rates decline. While this is attractive from the issuer's point of view, it exposes the investors to call risk. Since bonds are typically called for repayment after interest rates have fallen, investors will not find comparable investment vehicles. They almost invariably have to accept a lower yield when they reinvest the amount received on premature redemption.

### **Liquidity Risk**

Barring some popular Government of India securities which are traded & actively, most debt instruments do not seem to have a very liquid market. The debt market is mainly an over-the-counter market and much of the activity seems to occur in the primary (new issues; market. Given the poor liquidity in the debt market, investors face difficulty in trading debt instruments, particularly when the quantity is large. They may have to accept a discount over the quoted price while selling and pay a premium while buying. This seems to be a major problem in certain segments of the debt market bigger than most investors realize.

### **Interest Rate Risk**

We have seen that bond prices and yields are inversely related. As interest rates fluctuate bondholders experience capital losses and gains. Why? The reason is that in a competitive market securities are priced to offer fair expected rates of return. If a bond is issued with a 10 percent coupon when the competitive yield is 10 percent, then it will sell at par. 1/If the market rate rises to 11 percent, the bond price must fall so that its yield rises to 11 percent; conversely, if the market rate falls to 9 percent, its price must rise.

### **11.4 Rating of Debt Securities**

Rating of the debt securities issued by companies, quasi-government, it organizations, and governments first originated in the United States where presently at least five firms are offering such services. In recent years, rating agencies have been set up in several other countries.

In India, too, four rating agencies, viz, CRISIL, ICRA, CARE, and Phelps and Duff have been set up. Some more agencies are in the pipeline.

A debt rating is not a recommendation for purchasing, selling, or holding a security. The important elements relevant for investment decision-making in a debt security are: (i) yield to maturity, (ii) risk tolerance of the investor, and (iii) credit risk of the security. Clearly, the focus of debt rating is on only one of these three elements, viz. credit risk of the security, and hence it cannot be the sole basis for investment decision-making.

A debt rating is not a general evaluation of the issuing organization. If a debt issue of a firm X is rated higher than a debt issue of firm Y, it does not mean that firm X is better than firm Y. Remember that debt rating being security-specific is supposed to assess the credit risk of a particular debt security, nothing less and nothing more.

A debt rating does not create a fiduciary relationship between the rating agency and the users of a rating since there is no legal basis for such a relationship.

#### **Functions of Debt Ratings**

Debt ratings (or debt rating firms) are supposed to:

- Provide superior information.
- Offer low-cost information.
- Serve as a basis for a proper risk-return trade-off.
- Impose healthy discipline on corporate borrowers.
- Lend greater credence to financial and other representations.
- Facilitate the formulation of public policy guidelines on institutional investment. Analysis of

#### **Convertible Bonds**

With the repeal of the Capital Issues Control Act and the enactment of the SEBI Act in 1992, the rules of the game applicable to convertible bond have changed. As per SEBI guidelines issued in June 1992, the provisions applicable to fully convertible bonds and partially convertible bonds are as follows:

- ◆ The conversion premium and the conversion timing shall be predetermined and stated in the prospectus.
- ◆ Any conversion, partial or full, will be optional at the hands of the bond holder, if the

conversion takes place at or after 18 months but before 36 months from the date of allotment.

- ◆ A conversion period of more than 36 months will not be permitted unless conversion is made optional with 'put', and 'call' options.
- ◆ Compulsory credit rating will be required if the conversion period for fully convertible bonds exceeds 18 months.

7 Convertible bonds partake some characteristics of straight bonds and some features of equity shares. Since this book does not have a separate chapter on convertible bonds, they are being discussed in this chapter.

From the SEBI guidelines, it is clear that convertible bonds in India presently can be for three years.

- a. Compulsorily convertible bonds which provide for conversion within 18 months.
- b. Optionally convertible bonds which provide for conversion after 36 months.
- c. Bonds that provide for conversion after 36 months but which carry 'call' and 'put' features. Bulk of the convertible bonds are of types (a) and (b). hence, our discussion on the valuation of convertible bonds will focus on these two types.

#### **Valuation of compulsorily Convertible (Partly or Fully) bonds**

If you own a compulsorily convertible (partly or fully) bond you receive:

- A certain number of equity shares on part/full conversion.
- A certain stream of interest and principal repayment.
- Hence the value of such a bond is equal to the sum of two components.
- The present value of equity shares receivable on conversion.
- The present value of interest and principal payments receivable on the bond.

#### **Valuation of Optionally Convertible Bonds**

An optionally convertible bond may be viewed as a bond-warrant package. Its value is a function of three factors:

- Straight Bond Value
- Conversion Value
- Option Value Straight Bond Value

The straight bond value of a convertible bond is the discounted value of the interest and principal repayments receivable on it, if it is retained as a straight debt instrument. The discount rate used in this calculation depends on the general interest rates and the credit rating of the bond.

The value of a straight bond depends on the value of the firm. If a firm's value declines, the value of its straight bond may fall. In the extreme, if the value of a firm shrinks to zero, the value of its straight bond becomes nil. The maximum value of a firm's straight-to bond would be equal to the value of an equivalent risk-free bond.

#### **11.6 Conversion Value and Option Value**

##### **Conversion Value**

The conversion value is the value of the bond if the bondholders seek conversion. It is equal to the stock price multiplied by the conversion rate. Thus, the conversion value is linearly related to the value of the firm. We have defined the straight bond value and the conversion value of a convertible bond. The value of a convertible bond theoretically cannot fall below its straight bond value as well as its conversion value. Put differently, the convertible bond has two floor values: as straight bond value and its conversion value. The combined effect of these two lower bounds is shown by the heavy line in the exhibit, which simply reflects Max (Straight bond value, Conversion value).

##### **Option Value**

If you hold a convertible bond, you are not compelled to make an immediate choice in favor of or against conversion. You can wait, learn from hindsight, and finally choose the most profitable alternative. The option to wait is valuable. Hence, the value of the convertible bond lies above its floor value. The difference between the dashed line and the thick lower bound line represents the value of the option to convert.

Thus, the value of a convertible bond may be expressed as follows:

Value of the convertible bond = Max (Straight bond value, Conversion Value) Option value.

### 11.7 Summary

- The debt marketing in India has registered an impressive growth particularly since mid-nineties and, not surprisingly, has been accompanied by increasing complexity in instruments, interest rates, methods of analysis, and so on.
- The variety of debt instruments may be classified as follows: money market instruments, government securities and government guaranteed bonds, and corporate debentures.
- The value of a non-callable bond is:
- The commonly employed yield measures **sure:** current yield, yield to maturity, yield to call, and realized yield to maturity.
- The current yield of a bond is: annual interest/price.
- The yield to maturity (YTM) of a bond is the interest rate that makes the present value of the cash flows receivable from owning the bond equal to the price of the bond.
- The following formula may be used to find the approximate YTM on a bond:
- Bonds are subject to diverse risks, such as interest rate risk, inflation risk, real interest rate risk, default risk, call risk and liquidity risk.
- Interest rate risk, also referred to as "market risk", is measured by the percentage change in the value of a bond in response to a given interest rate change
- The duration of a bond is the weighted average maturity of its cash flow stream, where the weights are proportional to the present value of cash flows.
- Another perspective on the term structure of interest rates is provided by the forward interest rates, viz the interest rates applicable to bonds in the future.
- The expectations theory propounds that any long-term rate is equal to the geometric mean of current and future one-year rates expected by the market participants. The liquidity preference theory holds that forward rates should incorporate interest rate expectations as well as risk premium (or liquidity premium). The preferred habitat theory argues that investors as well as borrowers have distinct preferences for certain maturities and these have an important bearing on the yield curve.

The interest rate is determined by four factors or variables: short-term risk-free interest rate, maturity premium, default premium, and special features.

For analytical purposes, an optionally convertible debenture may be viewed as a debenture-warrant package. Its value is a function of three factors: straight debenture value, conversion value, and option value.

- The straight debenture value of a convertible debenture is the discount value of the interest and principal payments receivable on it, if it is retained as a straight debt security.
- The conversion value is the value of the debenture if the debenture-holder seeks conversion.

### 11.8 Self-Check Question

11.8.1 Current Yield can be expressed as:

11.8.2 Commercial paper usually has a maturity period of 90 days to 180 days. (True/False)

### 11.9 Short Questions

1. What are Zero-Coupon bonds?
2. Discuss classifications of debt instrument.



### **11.10 Long Questions**

1. How would You analyze convertible bonds?
2. Discuss functions of Debt Ratings.

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### **11.12 Answer to Self-Check Questions**

- 11.8.1  $\text{Current yield} = \text{Annual Interest} / \text{Price}$
- 11.8.2 True.

## **EQUITY VALUATION**

### **STRUCTURE**

- 12.1 Balance- Sheet Valuation
- 12.2 Dividend discount models
- 12.3 Price earning method
- 12.4 CAPM
- 12.5 Self-Check Questions
- 12.6 Short Questions
- 12.7 Long Questions
- 12.8 Reference
- 12.9 Answers to Self-Check Questions

### **12.1 Balance sheet valuation**

Analysts often look at the balance sheet of the firm to get a handle on some valuation measures. Three measures derived from the balance sheet are: book value, liquidation value, and replacement cost.

#### **Book Value**

The most common valuation measure is book value. The book value per share is simply the net worth of the company (which is equal to paid up equity capital plus reserves and surplus) divided by the number of outstanding equity shares. For example, if the net worth of Zensar Limited is Rs 37 million and the number of equity shares of Zenith is 2 million; the book value per share works out to Rs 18.50 (Rs 37 million divided by 2 million).

How relevant and useful is the book value per share as a measure of investment value?

The book value per share is firmly rooted in financial accounting and hence can be established relatively easily. Due to this, its proponents argue that it represents an 'objective' measure of value. A closer examination, however, quickly reveals that what is regarded as 'objective' is based on accounting conventions and policies which are characterized by a great deal of subjectivity and arbitrariness. An allied and a more powerful criticism against the book value: measure, is that the historical balance sheet figures on which it is based are often very divergent from current economic value. Balance sheet figures rarely reflect earning power and hence the book value per share cannot be regarded as a good proxy for true investment value.

#### **Liquidation Value**

Value realized from liquidating Amount to be paid to all the creditors all the assets of the firm and preference shareholders Number outstanding equity shares to illustrate, assume that Pioneer Industries would realize Rs 45 million from the liquidation of its assets and pay Rs 18 million to its creditors and

preference shareholders in full settlement of their claims. If the number of outstanding equity shares of Pioneer is 1.5 million, the liquidation value per share works out to:

$$\begin{aligned} & \text{Rs } 45\text{mn} - \text{Rs } 18\text{mn} / 1.5 \text{ mn} \\ & = \text{Rs } 18 \end{aligned}$$

While the liquidation value appears more realistic than the book value, there are two serious problems in applying it.

- a. It is very difficult to estimate what amounts would be realized from the liquidation of various assets
- b. The liquidation value does not reflect earning capacity. Given these problems, the measure of liquidation value seems to make sense only for firms, which are better dead and alive' -such firms are not viable and economic values cannot be established for them.

### Replacement Cost

Another balance sheet measure considered by analysts in valuing a firm is the replacement cost of its assets less liabilities. The use of this measure is based on the premise that the market value of a firm cannot deviate too much from its replacement cost. If it did so, competitive pressures will tend to align 'the two.

This idea seems to be popular among economists. The ratio of market price to replacement cost is called Tobin q, after James Tobin a Nobel Laureate in economics. The proponents of replacement cost believe that in the long run Tobin's q will tend to

1. The empirical evidence, however, is that this ratio can depart significantly from 1 for long periods of time. There is a major limitation of the replacement cost concept. The organizational capital, a very valuable asset, is not shown on the balance sheet. (Organizational capital is the value created by bringing together employees, customers, suppliers, managers, and others in a mutually beneficial and productive relationship. An important characteristic of organizational capital is that it cannot be easily separated from the firm as a going entity.) Although balance sheet analysis may provide useful information about book value, liquidation value, or replacement cost, 'the analyst must focus on expected future dividends, earnings, and cash flows to estimate the value of a firm as a going entity.

As we have already discussed in our previous lectures, the intrinsic value of corporate security is equal to the present value of the payment stream on the security discounted at an appropriate discount rate (capitalization rate). Symbolically,

$$V = C_1/(1+k) + C_2/(1+k)^2 + C_3/(1+k)^3 + \dots + C_n/(1+k)^n = \sum_{t=1}^n C_t/(1+k)^t$$

Where:

V is the present value

C<sub>t</sub> is Payments at time t

k is the Discount or capitalization rate

### 12.2 Dividend Discount Model

Dividend discount models are designed to compute the intrinsic value of a share of common stock under specific assumption as to the expected growth pattern of future dividends and the appropriate discount rate to employ. Merrill Lynch, CS First Boston, and a number of other investment banks routinely make such calculations based on their own particular models and estimates. What follows is an examination of such models, beginning with the simplest one.

According to the dividend discount model, the value of an equity share is equal to the present value of dividends expected from its ownership plus the present value of the sale price expected when the equity share is sold. For applying the dividend discount model, we will make the following assumptions:

- i. Dividends are paid annually-this seems to be a common practice for business firms in India; and
- ii. The first dividend is received one year after the equity share is bought.

## I. Single Period Valuation Model

Let us begin with the case where the investor expects to hold the equity share for one year. The price of the equity share will be:

$$P_0 = \frac{D_1}{(1+r)} + \frac{P_1}{(1+r)}$$

Where:

$P_0$  is the current price of the equity share  $D_1$  is the expected dividend expected next year  $P_1$  is the price expected next year  $r$  is the rate of return required on the equity share.

Assume that the equity share of a company is expected to provide a dividend of Rs 2 and fetch a price of Rs 18 a year hence. What price would it sell for now if investors' required rate of return is 12%.

$$P_0 = \frac{2.0}{(1.12)} + \frac{18}{(1.12)} = \text{Rs } 17.86$$

Change in the price of the equity share if the company is expected to grow at a rate of  $g$  every year. If the current price,  $P_0$  becomes  $P_0(1+g)$  a year hence, we get:

$$P_0 = \frac{D_1}{(1+r)} + \frac{P_0(1+g)}{(1+r)}$$

Or

$$P_0 = \frac{D_1}{(r-g)}$$

Let's take another example. Suppose that the expected dividend per share of a company is Rs 2. The dividend per share has grown over the past years @ 5% per year. This growth rate is expected to continue in future. Further, the market price of the equity share is expected at the same rate. We want to know the fair estimate of the intrinsic value of the equity share if the required rate is 15%.

Let's apply the above equation.

$$P_0 = \frac{2}{(0.15-0.05)} = \text{Rs } 20$$

Exercise: The equity stock of Rax Ltd. is currently selling for Rs 30 per share. The dividend expected next year is Rs 2. The investors' required rate of return on this stock is 15%. If the constant growth model applies to Rax Ltd. What is the expected growth rate?

You have just learnt how to compute the intrinsic value of the equity, if the forecast values of dividend, share price and the required rate of return are given. Now, if I turn the question the other way round and asks you to compute the expected rate of return, given the current market price and forecast values of dividend and share price. In that case, the expected rate of return equal to:

$$r = \frac{D_1}{P_0} + g$$

Taking the help of the example. Suppose that the expected dividend per share of a company is Rs 5. The dividend is expected to grow at the rate of 6% per year. If the price share now is Rs 50, what is the expected rate of return? If we put the values in the above-defined equation, we get 16%.

## II. Multi-Period Valuation Model

Since equity shares have no maturity period, they may be expected to bring a dividend stream of infinite duration. Hence the value of an equity share may be put as:

$$P_0 = \frac{D_1}{(1+r)} + \frac{D_2}{(1+r)^2} + \frac{D_3}{(1+r)^3} + \dots + \frac{D_n}{(1+r)^n} + \dots$$
$$= \frac{SD}{(1+r)^t} \quad t=1$$

Where:

$P_0$  is the price of the equity share today

$D_1$  is the dividend expected a year hence

$D_2$  is the dividend expected two years hence

$D_n$  is the dividend expected at the end of infinity

$r$  is the expected rate of return on the equity share.

We know that the equation above presents the valuation model for an infinite horizon. Let's now see whether it is applicable to a finite horizon also. Let's consider how an equity share would be valued by an investor who plans to hold it for  $n$  years and sell it thereafter for a price of  $P_n$ .

The value of the equity share to him would be:

$$P_0 = \frac{D_1}{(1+r)} + \frac{D_2}{(1+r)^2} + \frac{D_3}{(1+r)^3} + \dots + \frac{P_n}{(1+r)^n}$$

$$= \sum_{t=1}^n \frac{D_t}{(1+r)^t} + \frac{P_n}{(1+r)^n}$$

we have got the same equation as a generalized multi period valuation formula. This equation is general enough to permit any dividend pattern- constant, rising, declining, or randomly fluctuating. For practical applications we make simplifying assumptions

about the pattern of dividend growth. The most commonly used assumptions are as follows:

1. The dividend per share remains constant forever, implying that the growth rate is 0% (the zero-growth model).
2. The dividend per share grows at a constant rate per year forever (the constant growth model).
3. The dividend per share grows at a constant extraordinary rate for a finite period, followed by a constant normal rate of growth forever thereafter (the two-stage model).
4. The dividend per share, currently growing at an above normal rate, experiences a gradually declining rate of growth for a while. Thereafter, it grows at a constant normal rate (the H model).

#### **Zero growth Model**

A special case of the constant growth model calls for an expected growth rate,  $g$ , of zero. Here the assumption is that dividends will be maintained at their current level forever.

The dividend per share is expected on the current market price per share. The amount of dividend does not grow. This is the fixed amount of dividend,

$$D_0 = D_1 = D_2 = D = \text{Constant}$$

In this case, the model reduces to perpetuity.

If we assume that the dividend per share remains constant year after year at a value of  $D$ , the equation becomes

$$P_0 = \frac{D}{r}$$

It means that the present value interest factor of perpetuity is simply 1 divided by the interest rate expressed in decimal form. Hence, the present value of the perpetuity is simply equal to the constant annual payment divided by the interest rate. For example, the present value of a perpetuity of Rs 10,000 if the interest rate is 10% will be equal to:  $10,000/0.10 = \text{Rs } 1,00,000$ .

The reason is that an initial sum if invested at a rate of interest of 10%, provides a constant annual income of Rs 10,000 forever without any impairment of the capital value. The no-growth case is equivalent to the valuation process for preferred stock because dividend amount remains unchanged.

Note: This is a straightforward application of the present value of perpetuity formula.

Let's take an example: Hindustan Manufacturing Ltd. has distributed a dividend of Rs. 30 on each Equity share of Rs 10. The expected rate of return is 35%. Calculate current market price of share. Substituting in the formula;

$$30/0.35 = \text{Rs } 85.71 \text{ Constant Growth}$$

#### **Constant Growth Valuation (Gordon Model)**

A constant growth stock is a stock whose dividends are expected to grow at a constant rate ( $g$ ) in the foreseeable future. This condition fits many established firms, which tend to grow over the long run at the same rate as the economy, fairly well.

Assume that you have purchased the shares of a company, which is expected to grow at the rate of 6% per annum. The dividend expected on your share a year hence is Rs 2. What price will you put on it if your required rate of return for this share is 14%.

The price for your share can be calculated as:

$$P_0 = 2.00 / (0.14 - 0.06)$$

\* Rs 25

### Two Stage Growth Model

The simplest extension of the constant growth model assumes that the extraordinary growth (good or bad) will continue for a finite number of years and thereafter the normal growth rate will prevail infinitely. The constant growth model is extended to two-stage growth model. Here, the growth stages are divided into two, namely, a period of extraordinary growth (or decline) and a constant growth period of infinite nature. The extraordinary growth period will continue for some period followed by the constant growth rate. The information technology industry is at present experiencing an extra-ordinary growth rate, it may continue for some time and afterwards it may maintain constant growth rate.

Present value of the dividend during the above normal growth period

The present value of the stock / price - Present value of stock price at the end of the above normal growth period Let's try a practical application of the two-stage growth model Assume that the current dividend on an equity share of ABC Ltd. is Rs 2. The company is expecting to enjoy an above normal growth rate of 20% for a period of 6 years. Thereafter the growth rate will fall and stabilize at 10%. Equity investors require a return of 15%.

H-Model

Some assumptions for this model before starting the discussions:

1. While the current dividend growth rate,  $g_a$ , is greater than  $g_n$ , the normal long run growth rate, the growth rate declines linearly for  $2H$  years.
2. After  $2H$  years, the growth rate becomes  $g_n$ .
3. After  $H$  years, the growth rate become exactly halfway between  $g_a$  and  $g_n$ .

### Growth Rate

While the derivation of the H model is quite complicated but the valuation is quite simple

#### 12.3 P/ E Ratio or Earnings Multiplier Approach

Much of the real-world discussion of stock market valuation concentrates on the firm's price-earning's multiple, the ratio of price per share to earnings per share, commonly called as the P/ E ratio. The reciprocal of P/E ratio is called as (earnings -price) E/P ratio or earnings yield. Investors seem to attach a lot of importance to P/E ratios. Under this approach we estimate the P/ E ratio as follows:

$$P_0 = E_1 * (P_0/E_1)$$

$P_0$  is the estimated price

$E_1$  is the estimated earnings per share

$P_0/E_1$  is the justified price -earnings ratio

You must have noticed that the financial dailies give information on P/E ratios of a large number of companies, and financial analysts evaluate the performances and prospects of shares in terms of P/E ratios. Can you think of some questions like whether P/E ratio relates to the cost of capital? Or how far is the P/E ratio reliable as a performance indicator.

It is sometime suggested that the reciprocal of P/E ratio is a measure of the opportunity cost of capital. We would be discussing all this in the coming part of the lesson.

Let's start with some of the determinants of P/E ratio. The determinants of the P/E ratio can be derived from the dividend discount model, which is the foundation for valuing equity stocks. Let's begin with constant growth model. We know that:

$$P_0 = \frac{D_1}{r-g}$$

In this model:

$$D_1 = E_1(1-b)$$

$$r > (ROE \cdot b)$$

If we divide, both the sides by  $E_1$ , we get:

$$\frac{P_0}{E_1} = \frac{(1-b)}{r - (ROE \cdot b)}$$

What does the above equation indicate?

1. The dividend payout ratio,  $(1-b)$
2. The required rate of return,  $r$
3. The expected growth rate,  $ROE \cdot b$

Let's analyse the relation of all of the above with P/E ratio.

### **P/E Ratio & Plough Back Ratio (P/E Ratio and b)**

Note that  $b$ , the plough back ratio appears in the numerator as well as in the denominator. What is the effect of a change of  $b$  on the P/E ratio? Now, it depends on how ROE compares with  $r$ . If:  $ROE > r$ , an increase in  $b$  leads to an increase in P/E

$ROE > r$ , an increase in  $b$  has no effect on P/E

$ROE < r$ , an increase in  $b$  leads to a decrease in P/E

P/E Ratio and Interest rate (P/E ratio and  $r$ )

The required rate of return on equity stock reflects interest rate and risk. There is an inverse relationship between P/E ratios and interest rates:

When interest rates increase, required rates of return on all securities, including equity stocks increase, pushing security prices downward.

When interest rates fall, security prices rise.

### **P/E Ratio and Risk**

Other things being equal, riskier stocks have lower P/E multiples. We can note this easily by examining the formula for the P/E ratio of the constant growth model:

$$P/E = \frac{(1-b)}{(r-g)}$$

We can conclude that:

Riskier stocks have higher required rate of return ( $r$ ) and hence lower P/E multiples. This is true in all cases, not just the constant growth model. For any expected earnings and dividend stream, the present value will be lower when the stream is considered to be riskier. Hence the P/E multiple will be lower.

### **P/E Ratio and Liquidity**

Other things being equal, stocks which are highly liquid command higher P/E multiples and stocks which are highly illiquid command lower P/E multiples. The reason for this is not far to seek. Investors value liquidity just the way they value safety and hence are willing to give higher P/E multiples to liquid stocks.

Now that we are growth rates and the valuation, let's analyse the impact of growth on price, earnings and P/E ratio.

### **Impact of Growth on Price, Returns, and P/E Ratio**

The expected growth rates of companies differ widely. Some companies are expected to remain virtually stagnant or grow slowly; other companies are expected to show normal growth; still others are expected to achieve supernormal growth rate. Assuming a constant total required return, differing expected growth rates mean differing stock prices, dividend yields, capital gains yields, and price-earnings ratios. To illustrate, let's consider three cases:

Growth Rate (%)

Low/ growth firm 5

Normal growth firm 10

Supernormal growth firm 15

If, we assume that the expected earnings per share and dividend per share of each of the three firms are Rs 3.00 and Rs 2.00 respectively. Investors required total return from equity investments is 20 percent. Given the above information, we may calculate the stock price, dividend yield, capital gains yield, and price-earnings ratio

From the above calculations, we can conclude the following:

- As the expected growth in dividend, increases, other things being equal, the expected return depends more on the capital gains yield and less on the dividend yield.
- As the expected growth rate in dividend increases, other things being equal, the price-earnings ratio increases.
- High dividend yield and low price-earnings ratio imply limited growth prospects.
- Low dividend yield and high price-earnings ratio imply considerable growth prospects.

The expected EPS and DPS next year for each of the three firms are Rs 4 and Rs 2 respectively. Investors' total required rate of return from equity investments is 16%. Calculate the stock price, dividend yield, capital gains yield, and price-earnings ratio for the three cases. You must have heard about growth stocks and income stocks. I hope you are aware that growth stocks are supposed to provide returns primarily in the form of capital appreciation whereas income stocks are expected to provide returns mainly in the form of cash dividends. Now, I must ask you a basic question:

Does such a Distinction make Sense?

Let's study the Relationship Between Earnings/Price Ratio, Expected Return and Growth to answer the question We will analyze this relationship by taking a small example of a company. Suppose that Maturity Limited, a firm that does not grow at all. It pays all its earnings as dividends and does not plough back anything. Put differently, it pays a constant stream of dividends and hence its stock is like a perpetual bond. Hence the expected return on its stock is its dividend per share divided by the share price (i.e., the dividend yield) which is also the same as its earnings per share divided by the share price (i.e. the E/P ratio). If the earnings per share as well as the dividend per share is Rs 15 and the stock price is Rs 100, Expected return \* Dividend yield = Earnings/ Price ratio

Or

$$D1/P0 = E1/P0$$

In this case  $D1/P0 = E1/P0$ , EPS is the same as DPS

Therefore:

$$- 15/100 \text{ or } 15\%$$

Therefore, the price (P0) is equal to;

$$D1/r = E1/r; \text{ where } r \text{ is the expected return}$$

Note that even for a growing firm the expected return can equal the E/P ratio if retained earnings earn a return equal to the market capitalization ratio



Let's suppose Maturity Limited identifies a proposal to invest Rs 15 a share next year, which is expected to earn a return of 15 percent, just equal to the opportunity cost of capital. To undertake this investment, Maturity Limited decides to skip the dividend for year 1. The investment of Rs 15 a share will generate additional earnings of Rs 2.25 (Rs 15\*15 percent) per share in future thereby raising the dividend per share to Rs 17.25 per share from year 2 onwards.

The NPV per share for this proposal will be:

$$\left[ -15 + \frac{2.25}{0.15} = 0 \right]$$

Since the prospective return on this investment is equal to the opportunity cost of capital, it makes no contribution to the value of the firm and has no effect on the share price. The reduction in value caused by a zero dividend in year 1 is offset by an increase in value due to higher dividends in subsequent years. Hence, the market capitalization rate equals the

**E / P ratio:**

$$r = \frac{EI}{PO} = \frac{15}{100} = 0.15$$

We have seen that the market capitalization rate is equal to E/P ratio when the proposed investment has a zero NPV.

#### **12.4 CAPM (Capital Asset Pricing Model)**

It looks at risk and rates of return and compares them to the overall stock market. In other words, we can say that it is a model describing the relationship between risk and expected return that is used in the pricing of risky securities. CAPM says that the expected return of a security or a portfolio equals the rate on a risk-free security plus a risk premium. If this expected return does not meet or beat the required return then the investment should not be undertaken.

If you use CAPM you have to assume that most investors want to avoid risk, (risk averse), and those who do take risks, expect to be rewarded.

Valuation with the Capital Asset Pricing Model uses a variation of discounted cash flows; only instead of giving yourself a "margin of safety" by being conservative in your earnings estimates, you use a varying discount rate that gets bigger to compensate for your investment's riskiness. There are different ways to measure risk; the original CAPM defined risk in terms of volatility, as measured by the investment's beta coefficient. We can calculate the required rate of return by using CAPM in the following way:

$$K_s = K_{rf} + B (K_m - K_{rf})$$

Where:

$K_s$  is the Required Rate of Return, (or just the rate of return).

$K_{rf}$  is the Risk-Free Rate (the rate of return on a "risk free investment", Government Treasury Bills)

$B$  = Beta. A measure of volatility, or systematic risk, of a security or portfolio in comparison to the market as a whole is known as beta coefficient. A beta of 1 indicates that the security's price will move with the market. A beta greater than 1 indicates that the security's price will be more volatile than the market. A beta of less than 1 means that it will be less volatile than the market.

$K_m$  = The expected return on the overall stock market.

(You have to guess what rate of return you think the overall stock market will produce.) Lots take an example, to understand CAPM.

As an example, let's assume that the risk-free rate is 5%, and the overall stock market will produce a rate of return of 12.5% next year. You assume that XYZ company has a beta of 1.7. What rate of return should you get from this company in order to be rewarded for the risk you are taking? Remember investing in XYZ company (beta =1.7) is riskier than investing in the overall stock market (beta \* 1.0). So, you want to get more than

12.5%, right? Let's plug these inputs in the equation.

$$K_s = K_{rf} + B (K_m - K_{rf})$$

$$K_s = 5\% + 1.7 (12.5\% - 5\%)$$

$$= 5\% + 1.7 (7.5\%)$$

By solving, we get  $K_s = 17.75\%$

So, if you invest in XYZ Company, you should get at least 17.75% return from your investment. If you don't think that XYZ Company will produce those kinds of returns for you, then you would probably consider investing in a different stock. Analysts sometimes use a more complicated value for beta, that grows with a company's debt level. Though there is also a lot of controversy about whether beta, which measures past volatility, is sufficient or even relevant in predicting future risk.

### 12.5 Self-Check Questions

Question 1: What is the primary purpose of equity valuation?

- Assessing a company's creditworthiness
- Determining the fair value of a company's common stock
- Estimating future cash flows
- Evaluating short-term liquidity

Question 2: Which of the following valuation methods considers the present value of expected future cash flows?

- Comparable Company Analysis (CCA)
- Dividend Discount Model (DDM)
- Price/Earnings (P/E) ratio
- Return on Equity (ROE)

Question 3: What does the Price/Earnings (P/E) ratio indicate about a stock?

- The company's ability to generate profits relative to its market price
- The dividend yield of the stock
- The total market capitalization of the company
- The volatility of the stock price

Question 4: Which of the following factors is NOT typically considered in the Discounted Cash Flow (DCF) valuation method?

- Terminal value
- Risk-free rate
- Historical stock prices
- Beta coefficient

Question 5: What is the concept behind the Gordon Growth Model in the Dividend Discount Model (DDM)?

- Projecting future earnings growth
- Discounting future dividends at a constant rate
- Analyzing market trends
- Assessing the company's debt levels

### 12.6 Short Questions

- What is the significance of discounted cash flow (DCF) in equity valuation?

2. How do market multiples, such as price-to-earnings (P/E) ratio, contribute to the evaluation of a company's equity?
3. Explain the role of fundamental analysis in determining the intrinsic value of a stock for equity valuation.
4. How can macroeconomic factors impact the equity valuation of a company, and what indicators should be considered in this context?

### **12.7 Long Questions**

1. What are the diverse methods for equity valuation and their contributions to understanding a company's market value?
2. How do market multiples aid in assessing a company's relative value, and what factors should be considered in this approach?
3. Explain the significance of discounted cash flow (DCF) analysis in equity valuation, highlighting key evaluation factors.
4. Discuss the role of qualitative factors in equity valuation and the integration of quantitative and qualitative considerations for informed investment decisions.

### **12.8 Reference**

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### **12.9 Self-Check Questions Answers Key**

1. b. Determining the fair value of a company's common stock
2. b. Dividend Discount Model (DDM)
3. a. The company's ability to generate profits relative to its market price
4. c. Historical stock prices
5. b. Discounting future dividends at a constant rate

## **FUNDAMENTAL ANALYSIS**

### **STRUCTURE**

- 13.1 Introduction
- 13.2 Influence of the economy
- 13.3 Economy vs. Industry and Company
- 13.4 Industry Analysis
- 13.5 Self-Check Questions
- 13.6 Short Questions
- 13.7 Long Questions
- 13.8 Reference
- 13.9 Answers to Self-Check Questions

### **13.1 Introduction**

Fluctuations in security markets are related to changes in the aggregate economy. The price of most bonds is determined by the level of interest rates, which are influenced by overall economic activity and Reserve bank policy. Individual stock prices reflect investor expectations about an issuing firm's performance in terms of earnings, cash flow, and the investor's required rate of return. This performance is likewise affected by the overall performance of the economy. The relationship of alternative economic series to the behaviour of the entire economy and can be classified numerous economic series into three groups: leading, coincident, and lagging indicator series. Further, extensive analysis of the relationship between the economy and the stock market has shown that stock prices are one of the better leading indicator series. The evidence not only has indicated a strong relationship between stock prices and the economy but also has shown that stock prices consistently turn before the economy does.

### **13.2 Influence of the Economy**

Companies are a part of the industrial and business sector, which in turn is a part of the overall economy. Thus, the performance of a company depends on the performance of the economy in the first place. If the economy is in recession or stagnation, ceteris paribus, the performance of companies will be bed in general, with some exceptions however. On the other hand, if the economy is booming, incomes are rising and the demand is good, then the industries and the companies in general may be prosperous, with some exception however.

In the Indian economy, the matters to be considered in the first place are the behaviour of the monsoon and the performance of agriculture. As agriculture is the mainstay of the 70% of the population and contributes nearly 35% of the output of the economy, it is important for the assessment and forecast of industrial performance. If the monsoon is good and agricultural income rise, the demand for industrial products and services will be good and industry prospers.

Secondly, India has a mixed economy, where the public sector plays a vital role. The Government being the biggest investor and spender, the trends in public investment and expenditure would indicate the likely performance of the Indian economy. Concomitant with this, the government

budget policy, tax levies and government borrowing programs along with the extent of deficit financing will have a major influence on the performance of the Indian economy, as these influence the demand and income of the people. The changes in excise and customs duties, corporate taxes, etc. are all relevant to assess the trends in the economy as they have an impact on the industry and the companies.

Thirdly, the monetary policy and trends in money supply which mainly depend on the government's budget policy, its borrowing from the public and credit from the banks and the RBI, have a major impact on the industrial growth through the cost and availability of credit, the profit margins of the companies etc. The monetary situation along with the budgetary policy influences the movement in price level (inflation) and interest rates, The tight money position, increasing budget deficits and RBI creation of currency lead to an inflationary spiral. Although some interest rates in the organized financial system are now freed, the bazaar rates in the unorganized market do reflect the availability of funds in the free markets. So, interest rates in the free markets and the degree of inflation do have a major influence on the economy and the performance of the industries. Although a mild inflation is good for business psychology, higher degrees of inflation, particularly in two digits, will defeat all business planning, lead to cost escalations and squeeze on profit margins. These will adversely affect the performance of industry and companies.

Fourthly, the general business conditions in the form of business cycles or the level of less activity to influence the demand for industrial products and the performance of the industry. In India, there are no business cycles but outputs do fluctuate depending upon the state of the economy, performance of agriculture, availability of power and other infrastructural outputs, imported inputs and a host of other factors. These factors do influence the costs and profit margins of companies from both demand and supply sides. The business earnings and profits are affected by such changes in business conditions.

Fifthly, the economic and political stability in the form of stable and long-term economic policies and a stable political system with no uncertainty would also be necessary for a good perform since of the economy in general and of companies in particular. The Government regulations being all-pervasive in India, the government policy has to be known in advance in all its aspects and there should be no uncertainty about the political system as economic and political factors are interlinked. Political uncertainties and adverse changes in government policy do adversely affect industrial growth. Government policy relating to projects, clearance for foreign collaboration and foreign investment, price and distribution controls, and listing requirements on stock exchanges and a host of other matters like import restrictions do affect the performance of companies. The foreign exchange position and the balance of payments situation at any time would also indicate the rigours of government policy with regard to imports, exports, foreign investment and related matters.

All the above factors of the economy influence the corporate performance and the industry in general. In any investment analysis, a broad picture of these factors and a forecast of the growth of the economy and of industry would be necessary to decide when to invest and what to invest in.

### **13.3 Economy vs. Industry and Company**

At any stage in the economy, there are some industries which are growing while others are declining. The performance of companies will depend among other things upon the state of the industry as a whole and the economy. If the industry is prosperous, the companies, within the industries may also be prosperous although a few may be in a bad shape. The performance of a company is thus a function not only of the industry and of the economy, but more importantly, on its own performance. The share price of the company is empirically found to depend up to 50% on the performance of the industry and economy. The economic and political situation in the country has thus a bearing on the prospects of the company.

There are different phases in the economy such as boom, depression, recession, etc. The

performance of the economy in India is not cyclical as in the case of developed countries exhibiting business cycles, as the Indian economy depends basically on the monsoon and the growth rate of agriculture. Besides, with a huge public sector in our mixed economy, the performance of the five-year plan, yearly public investment, government expenditure and a host of other factors influence the economy, industry and company. Thus, one important factor is the fiscal policy which incorporates government expenditure and taxation, borrowing, deficit financing, etc. and which influence both the public and private sectors in the economy. The industrial growths in general and of infrastructural industries in particular influence the corporate performance.

At any stage in the economy there are some industries growing fast while others are declining. The performance of companies will depend among other things upon the state of the industry as a whole. If the industry is prosperous, the companies, within the industries may also be prosperous, if the economy is also doing well. The performance of a company is thus a function of the industry and of the economy in addition to its own performance.

The share price of the company is empirically found to depend up to 50% on the performance of the industry and economy. The economic and political situation in the country has thus a bearing on the prospects of the company. The industries in different stages of growth are shown below: -Even in industries of above average growth, there may be some companies of poor growth or no growth at all. The fundamentals of the company will explain this. The Market Price (MP) is a function of intrinsic factors to the extent of about 50% of it and the rest is accounted by the expectations, psychological and sentimental factors.

Influences of the economy are part of the business environment. Demographics, changes in technology, and political and regulatory environments will affect the cash flow and risk prospects of different industries. In the past 50 years, the United States has had a baby boom, a baby bust, and is now enjoying a baby boomlet as members of the baby-boom generation (those born between the end of World War II and the early 1960s) have children. The influx of the baby boom and "the greying of the baby boom" have had a large impact on U.S. consumption, from advertising strategies to house construction to concerns over social security and health care. The study of demographics includes much more than population growth and age distributions. Demographics also includes the geographical distribution of people, the changing ethnic mix in a society, and changes in income distribution. Wall Street industry analysts carefully study demographic trends and attempt to project their effect on different industries and firms.

In the 1990s, the fastest-growing age groups in the United States were those in their forties and fifties, teens, and those over 70; among the declining groups were those between ages 18 and 24. As of the early 2000s, more than one in eight Americans are 65 years of age or older. The changing age profile of Americans has implications for resource availability, namely, a possible shortage of entry-level workers leading to an increase in labor costs and difficulty in finding qualified persons to replace the retiring baby boomers. The aging population also affects savings patterns, as people in the 40 to 60 age bracket usually save more than younger people. This is good for the financial services industry, which offers assistance to those who want to invest their savings. Alternatively, fewer younger workers and more "saving seniors" may have a negative impact on some industries, such as the retailing industry. Lifestyles deal with how people live, work, form households, consume, enjoy leisure, and educate themselves. Consumer behaviour is affected by trends and fads. The rise and fall of jeans, "designer" jeans, chinos, and other styles in clothes illustrate the sensitivity of some markets to changes in consumer tastes. The increase in divorce rates, dual-career families, population shifts away from cities, and computer-based education and entertainment have influenced numerous industries, including housing, automobiles, convenience and catalogue shopping, services, and home entertainment.

From an international perspective, some Indian. -brand goods—from blue jeans to movies— have a high demand overseas. They are perceived to be more “in style\* and perhaps higher quality than items produced domestically. Sales in several industries have benefited from this exercise of consumer choice overseas.

Trends in technology can affect numerous industry factors including the product or service and how it is produced and delivered. There are literally dozens of examples of changes that have taken or are taking place due to technological innovations. For example, demand has fallen for carburetors on cars because of electronic fuel-injection technology. The engineering process has changed because of the advent of computer-aided design and computer-aided manufacturing. Perpetual improvement of designs in the semiconductor and microprocessor industry has made that industry a difficult one to evaluate. Innovations in process technology allowed steel mini mills to grow at the expense of large steel producers.

Advances in technology allow some plant sites and buildings to generate their own electricity, bypassing their need for power from the local electric utility. Trucks have reduced railroads' market share in the long-distance carrier industry, and planes, not trains, now mainly carry people long distances. The “information super highway “is becoming a reality and may lead to linkages between telecommunications and cable television systems. Changes in technology have Spurred capital spending in technological equipment's firms try to use microprocessors and software as a means to gain competitive advantages. The future effect of the Internet is astronomical. The retailing industry is a user of new technology. Some forecasters envision “relationship merchandising,” in which customer databases will allow closer links between retail stores and customer needs.

Rather than doing market research to focus on aggregate consumer trends, specialized retailers can offer products that particular consumer segments desire in the locations that consumers prefer. Technology may allow retailers to become more organizationally decentralized and geographically diversified. Major retailers use bar-code scanning, which speeds the checkout process and allows the firm to track inventory. Use of customer credit cards allows firms to track customer purchases and send custom-made sales announcements. Electronic data interchange (EDI) allows the retailer to electronically communicate with suppliers to order new inventory and pay accounts payable. Electronic funds transfer allows retailers to move funds quickly and easily between local banks and headquarters.

Because political change reflects social values, today's social trend may be tomorrow's law, regulation, or tax. The industry analyst needs to project and assess political changes relevant to the industry under study. Some regulations and laws are based on economic reasoning. Due to utilities' positions as natural monopolies, their rates must be reviewed and approved by a regulatory body in the above context, any particular industry can be studied with a view to assess the problems, prospects, etc. of the company in the industry. The industry data are to be examined from the point of view of the product-mix, raw materials, components, pricing cost of production, etc., profit margins and related data juxtaposed with those of the company. The capacity utilization of the industry in general and of the company in question within the industry is to be compared. The demand and supply, the market conditions and the share of the company in the market are to be studied before making a projection of its future growth, keeping the industry prospects in mind.

The future profitability can be assessed from the half yearly and annual reports, press releases, AGM's reports, market reports, management interviews and Industry and Commerce Association's publications. The share of the company in which investment is sought is to be analyzed in terms of the fundamentals of the company in the background of the industry's performance. The decision to buy has to be on the basis of whether the price of the share is proper arid the future profitability is good based on a rational forecast for the future.

We have to consider the quantifiable factors and qualitative factors of the company. Among the

quantifiable factors we have to consider the capital efficiency and the sales turnover and the profitability margins. The quantifiable data are based on financial statement Analysis. The qualitative factors are:

- a.** Management efficiency,
- b.** Rating of promoters,
- c.** Rating of collaborators,
- d.** Uniqueness of the product,
- e.** Location of government policy and patronage, etc.

The industrial position not only depends upon the economic growth but on the nature of the industry itself. Within the industry the factors which have to be taken into account are the product-mix, the various outputs, nature of the products, inputs and raw materials, installed capacity of the industry - utilization of capacity - the market nature of the inputs, their domestic availability and the problems of the industry in general. The pricing and the Government controls on prices, distribution, etc., controls on imports and tax policy, excise and customs duties etc. would influence the cost of production and the profit margins of the industry, as also the prospects of growth. In the area of market, the demand for the products produced and the prospects for exports, protection or tariff preferences, etc. influence the prospects of the industry. In many industries, the raw materials and other inputs and their availability domestically, particularly of electricity, have a major Influence on the market from the point of view of supply. Labor conditions in the industry should also be looked into and have a bearing on growth prospects.

In the company analysis, the financial highlights of the companies, which are influenced by the industry and the economy are the capacity utilization, demand, cost and profit margins. The state of the capital market and the capacity to raise capital from the market not only depend on the performance of the companies but of the economy and the industry as well. The fundamentals of the company are to be analyzed in terms of its financial structure, leverage, liquidity and profitability, financial viability, etc. The information for this purpose is to be secured from the annual reports of the company, balance sheets, press reports, AG M's reports management's press releases and the publications of the Industry and Commerce Associations.

The most important variable influencing the company's performance is management, namely, the quality, capability, popularity and integrity of the management. Generally, the rating of the promoters and management has to be looked into through their plans, financial management, growth orientation, expansion plans, tax planning, R & D, technology, etc. The popularity of the management is known from their track record, retention policy, distribution of dividends and bonus, etc. The honesty and integrity of the management can be seen from the shareholding pattern and the availability of floating stock and the liquidity of shares of the company. In the area of financial management, companies' financial structure, retention policy, dividend record, bonus policy and liquidity ratios, etc. are to be looked into. The market capitalizations of a share is to be compared with the book value and the intrinsic worth of the company. The share has to be examined to know whether it is properly priced and reflects its true intrinsic value. The P/E ratio and earnings per share, book value, etc. are to be looked into in this context. Only shares which are underpriced are to be generally purchased, provided they have the potential for growth and capital appreciation.

Any particular industry can be studied with a view to assess the problems, prospects, etc. of the company in the industry. The industry data are to be examined from the point of view of the installed capacity and its utilisation, raw materials, components, pricing, cost of production, etc., profit margins and related data juxtaposed with those of the company. The capacity utilisation of the industry in general and of the company in question within the industry are to be compared, the demand and supply, the market conditions and the share of the company in the market are to be studied before making a projection of its future growth, keeping the



industry prospects in mind. The future profitability can be assessed from the half-yearly and annual reports, press releases, AGM's reports, market reports, management interviews and Industry and Commerce Association's publications. The stock of the company in which investment is sought is to be analysed in terms of the fundamentals of the company in the background of the industry's performance. The decision to buy has to be on the basis of whether the price of the share is proper and the future profitability is good based on a rationed forecast for the future.

To examine the financial highlights, we have to consider among other things, the capital efficiency and the sales turnover and the profitability margins.

Normally, a company uses capital efficiently by having a high turnover of equity. Similarly, the use of capital is efficient if there is a high sales turnover to gross block. The company may have only a small profit margin but if the sales turnover is high, the profits will also be high. Gross profits- to-sales ratio measures the profit margins. In this context, the growth of gross block, sales, equity, and gross profits are to be analysed in respect of each company within the industry. On this basis, these ratios of companies within the industry are to be compared with the industry's overall operating performance in respect of the variables referred to earlier. The gross profit (GP) is also to be examined in relation to the market capitalisation. The riskless return is 12% and a reasonable return is 15%. Depreciation, taxes, etc., may account for another 15%. A total return in the form of gross profit of not less than 30% is, therefore, to be expected from any company to start with. If a company in any industry is less profitable than that, it is not worth the purchase. Similarly, gross profit to gross block and the dividend policy, earning per share and bonus payouts are all to be examined from the point of view of the future prospects of the company in the background of industry performance and possible capital appreciation of the shares.

### **13.4 Industry Analysis**

At any point to time, there may be industries which are on the upswing of the cycle called sunshine industries and those which are on the decline called sunset industries. In India, there are some growth industries like electronic and computers which are the key industries. The engineering, Petro-chemicals and capital goods industries are in the core sector. A few industries like diamonds, engineering, etc. are in the export sector. Jute and cotton textiles are the decadent industries. At present, Tele Communications, Computer Software, energy etc. are some examples of Sunrise Industries.

As referred to earlier, performance of a company has been found to depend broadly up to 50% on the external factors of the economy and industry. These externalities depend on the availability of inputs, like proper labour, water, power and interrelations between the economy and industry and the company. It is, in this context, that a well-diversified company performs better than a single product company, because while the demand for some products may be declining, that for others may be increasing. Similarly, the input prices and cost factors would vary from product line to product line, leading to different margins and a diversified company is a better bet for investor.

The industry analysis should take into account the following factors among others-as influencing the performance of the company, whose shares are to be analyzed:

#### **1.Product Line**

The position of the industry in the life cycle of its growth -initial stages, high growth stages and maturing stages are to be noted. It is also necessary to know the industries with a high growth potential like computers, electronics, chemicals, diamonds, etc. and whether the industry is in the priority sector or the key industry group or capital goods or consumer goods groups. The importance attached by the government in their policy and of the Planning Commission in their assessment of these industries is to be studied. Product may be new one or an import substitution product which has good future.

#### **2.Raw Material and Inputs**

Under this head, we have to look into industries depending on imports of scarce raw materials,

competition from other companies and industries, and the barriers to entry of a new company, protection from foreign competition, import and export restrictions, etc. An industry which has a limited supply of materials domestically and where imports are restricted, for example, will have dim growth prospects. Labour is also an input and industries with labour problems may have difficulties of growth.

### **3.Capacity Installed and Utilised**

The demand for industrial products in the economy is estimated by the Planning Commission and the government, and the units are given licensed capacity on the basis of these estimates. If the demand is rising as expected and the market is good for the products, the utilisation of capacity will be higher. If, however, 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 utilisation will be low and profitability will be poor.

### **4.Industry Characteristics**

Whether the industry is cyclical, fluctuating or stable, has to be looked into first, as the prospects for growth will depend on this to an extent. If the demand is seasonal as in the case of fertilizers, pesticides, etc., their problems may mar the growth prospects. If it is consumer product and the demand is all over India, freight charges are an important component of the cost of production. The scale of production and the width of the market would also determine the selling and advertisement costs. The nature of the industry would thus be an important factor for determining the scale of operations and profitability. The growth prospects would depend on raw materials, easy access to inputs, particularly power, transport and other infrastructural facilities.

### **5.Demand and Market**

The demand for the product should be expanding and its price should not be controlled by the government, if the industry is to have good prospects of profitability. If the demand is income- elastic and price-elastic, the supplier should be able to sell the goods at a growing rate and the prospects of growth are good. It is also important that the prices of raw materials and other input costs like freight, electricity, etc. should not be controlled by the government. The demand should also be growing and there should be export demand for the product. If the nature of the product is such as drugs, fertilizers or other consumer goods, whose price and distribution are controlled by the government, the growth prospects would be less. Thus, decontrol of cement recently has helped the cement industry to grow and expand.

### **6.Government Policy with Regard to Industry**

The government policy is announced in the Industrial Policy Resolutions and subsequent announcements from time to time by the government. The policy can also be seen from the strategy as laid down in the five-year plans and importance given to the industry by the Planning Commission and the expected demand in the economy. The Plan priorities for the industry, the physical and financial targets of investment and foreign collaboration in that industry are important variables affecting its fortunes. The government has powers of control over industry in terms of output, price and distribution of the product and a number of other aspects. The government policy with regard to granting of clearances, installed capacity and reservation of the products for small industry, etc. are also factors to be considered for industrial analysis.

### **7. Labour and other Industrial Problems**

The industry, whether it is capital intensive or labor-intensive, has to use labour of different categories and expertise. The productivity of labour as much as the capital efficiency would determine the progress of the industry. If there are problems of labour, strikes, lockouts and poor productivity, that industry should be unwelcome for the investors. The best example is banking, where presently labour productivity is poor. There are some decaying industries, like jute and cotton textiles, whose shares are to be avoided by the investors unless such companies are diversified into other lines as in the case of Birla

Jute. Certain industries with problems of marketing like high storage costs, high transport costs, dependence on foreign markets etc. as the in the case of fertilizers may have poor growth potential and investors have to be careful when investing in such companies.

### **8. Management**

An industry with any problems may be well-managed, if the promoters and the management are efficient and capable of steering the company through difficult days. Such management like Tatas, Birlas, Ambanis etc. who have a reputation, built up their companies on strong foundations. The management has to be assessed in terms of their capabilities, popularity, honesty and integrity. In the case of new industries and new managements, there will be no track record and the investors have to carefully assess the project reports and the assessment of financial institutions in this regard. The capabilities of management will depend upon tax planning, innovation of technology, modernisation, expansion of R & D, etc. A management with a broad vision will plan for the expansion and diversification, make tax planning, increase the retained earnings with a consistent dividend policy so that the future expansion plans are put on a sound basis. A good management will also ensure that their shares are well distributed and liquidity of shares is assured and trading is fair and just in the market with no malpractices like cornering of shares or insider trading.

### **9. Future Prospects**

Many of the factors of operation in industry are interlinked such as capacity utilisation, demand and markets, government policy, availability of inputs, infrastructure, etc. It is, therefore, necessary to have an overall picture of the industry and to study these problems and prospects. After a study of the past, the future prospects of the industry are to be assessed. For this purpose, the projected demand, input availabilities, unutilised capacities, the alternative growth strategies, methods of reducing of cost, economies of scale and the position of competitors in the market are to be probed into. A company has to be assessed in terms of its strategies to meet the challenges as they emerge and its future prospects should be assessed before an investment is made.

In fundamental analysis, intrinsic worth as reflected by BV or EPS or GPM, etc. is expected to indicate the market price. But in actual practice it is not so.

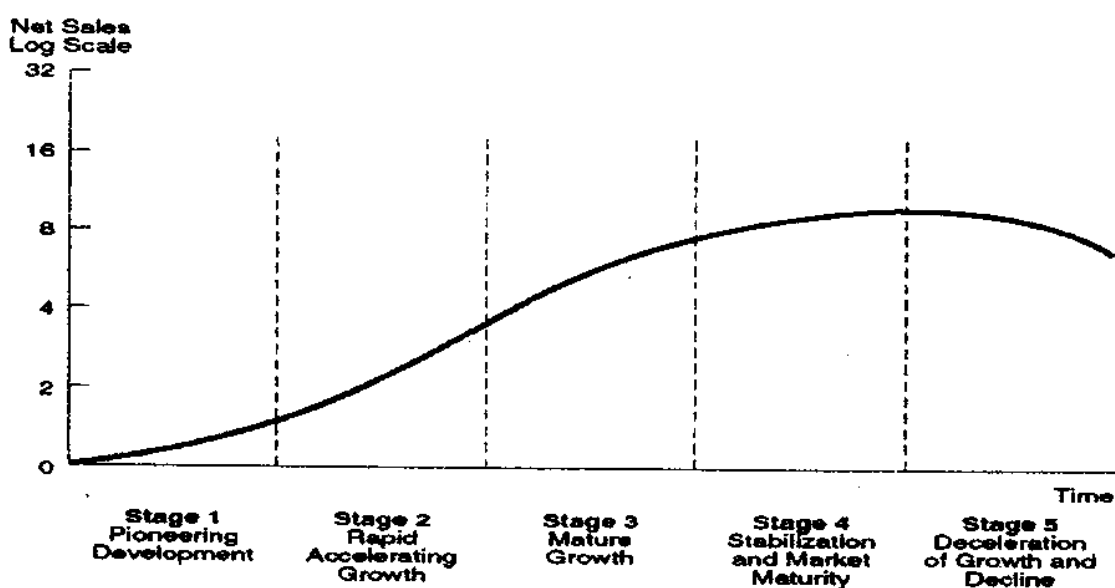
### **10. Industry life cycle analysis**

An insightful analysis when predicting industry sales and trends in profitability is to view the industry over time and divide its development into stages similar to those that humans progress through as they move from birth to adolescence to adulthood to middle age to old age. The number of stages in this industry life cycle analysis can vary based on how much detail you want.

A five-stage model would include

1. Pioneering development
2. Rapid accelerating growth
3. Mature growth
4. Stabilization and market maturity
5. Deceleration of growth and decline

1. Pioneering development. During this start-up stage, the industry experiences modest sales growth and very small or negative profit margins and profits. The market for the industry's product or service during this time period is small, and the firms involved incur major development costs.
2. Rapid accelerating growth. During this rapid growth stage, a market develops for the product or service and demand becomes substantial. The limited numbers of firms in the industry face little competition, and individual firms can experience substantial backlogs. The profit margins are very high. The industry builds its productive capacity as sales grow at an increasing rate as the industry attempts to meet excess demand. High sales growth and high profit margins that increase as firms become more efficient cause industry and firm profits to explode. During this phase, profits can grow at over 100 percent a year as a result of the low earnings base and the rapid growth of sales and net profit margins.
3. Mature growth. The success in Stage 2 has satisfied most of the demand for the industry goods or service. Thus, future sales growth may be above normal but it no longer accelerates. For example, if the overall economy is growing at 8 percent, sales for this industry might grow at an above normal rate of 15 percent to 20 percent a year. Also, the rapid growth of sales and the high profit margins attract competitors to the industry, which causes an increase in supply and lower prices, which means that the profit margins begin to decline to normal levels.
4. Stabilization and market maturity. During this stage, which is probably the longest phase, the industry growth rate declines to the growth rate of the aggregate economy or its industry segment? During this stage, investors can estimate growth easily because sales correlate highly with an economic series. Although sales grow in line with the economy, profit growth varies by industry because the competitive structure varies by industry, and by individual firms within the industry because the ability to control costs differs among companies. Competition produces tight profit margins, and the rates of return on capital (e.g., return on assets, return on equity) eventually become equal to or slightly below the competitive level.
5. Deceleration of growth and decline. At this stage of maturity, the industry's sales growth declines because of shifts in demand or growth of substitutes. Profit margins continue to be squeezed, and some firms experience low profits or even losses. Firms that remain profitable may show very low rates of



return on capital. Finally, investors begin thinking about alternative uses for the capital tied up in this industry.

### 13.5 Self-Check Questions

**Question 1:** What does the P/E ratio (Price-to-Earnings ratio) indicate in fundamental analysis?

- a. Market volatility
- b. Earnings growth potential
- c. Liquidity position
- d. Debt levels

**Question 2:** Which financial statement provides information about a company's revenues and expenses over a specific period?

- a. Balance Sheet
- b. Income Statement
- c. Cash Flow Statement
- d. Statement of Retained Earnings

**Question 3:** What does the term "Dividend Yield" represent in fundamental analysis?

- a. The company's debt-to-equity ratio
- b. The percentage return on investment from dividends
- c. The company's market capitalization
- d. The efficiency of inventory management

**Question 4:** What is the purpose of the DuPont analysis in fundamental analysis?

- a. Assessing a company's cost of capital
- b. Evaluating the efficiency of working capital management
- c. Decomposing return on equity into its components
- d. Measuring a company's beta coefficient

**Question 5:** How does the Quick Ratio differ from the Current Ratio in fundamental analysis?

- a. Quick Ratio includes inventory, while the Current Ratio excludes it
- b. Current Ratio includes long-term liabilities, while Quick Ratio excludes them
- c. Quick Ratio includes prepaid expenses, while the Current Ratio excludes them
- d. Current Ratio includes cash, while Quick Ratio excludes it

### 13.6 Short Questions

1. What is the primary objective of fundamental analysis in evaluating stocks?
2. How does the P/E ratio help investors assess a company's valuation?
3. What key information does the income statement provide, and how is it crucial in fundamental analysis?
4. Explain the significance of the balance sheet in evaluating a company's financial health.

### 13.7 Long Questions

1. What does the term "dividend payout ratio" indicate about a company's financial strategy?
2. How can investors use the DuPont analysis to gain insights into a company's return on equity (ROE)?
3. What is the role of free cash flow in fundamental analysis, and why is it considered important?
4. How does fundamental analysis differ from technical analysis in the context of stock market analysis?

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**13.9 Self-Check Questions Answers Key**

1. b. Earnings growth potential
2. b. Income Statement
3. b. The percentage return on investment from dividends
4. c. Decomposing return on equity into its components
5. a. Quick Ratio includes inventory, while the Current Ratio excludes it

## **COMPANY ANALYSIS**

### **STRUCTURE**

- 13.1 Introduction
- 13.2 Size for the Company
- 13.3 Need for Forecast
- 13.4 Guidelines for Investment
- 13.5 How-to Pick-Up Growth Shares?
- 13.6 Types Of Companies
- 13.7 Self-Check Questions
- 13.8 Short Questions
- 13.9 Long Questions
- 13.10 Reference
- 13.11 Answers to Self-Check Questions

### **13.1 Introduction**

The common stocks of good companies are not necessarily good investments. The point is, after analyzing a company and deriving an understanding of its strengths and risks, you need to compute the fundamental intrinsic value of the firm's stock and compare the intrinsic value of a stock to its market value to determine if the company's stock should be purchased. The stock of a wonderful firm with superior management and strong performance measured by sales and earnings growth can be priced so high that the intrinsic value of the stock is below its current market price and should not be acquired. In contrast, the stock of a company with less success based on its sales and earnings growth may have a stock market price that is below its intrinsic value. In this case, although the company is not as good, its stock could be the better investment. The classic confusion in this regard concerns growth companies versus growth stocks. The stock of a growth company is not necessarily a growth stock

In the case of company analysis, the balance sheet data should be first analyzed for:

1. Efficient use of capital;
2. Leverage enjoyed in the use of capital;
3. Return on net worth; and
4. Return on equity.

The capital structure and the cost of different types of capital and the problems of servicing the borrowed funds are to be taken into account. For this purpose, the interest burden, tax and depreciation provision are to be examined. The cash profits and profit after depreciation should be considered in relation to equity and net worth.

The sales turnover is an important indicator of the activity of the company and an assessment of gross profits in relation to sales is to be made. Sales to equity would be high to indicate a good turnover of sales for equity (or NW) employed in the business. The profit margins, earnings per share and P/E ratios will indicate the earning potential of the company for the equity holders.

A fair return on capital employed can be assumed to be 10-15% as the government and public sector bonds give a return of around 13%. A provision for tax and depreciation has to be made at around 15%. These together would account for about 30% as gross profit for a company to be eligible for

investment. The gross profits as well as net profits are to be related to the market capitalizations for each company. Besides, the performance of the company analyzed has to be compared with that of its competitors in the industry under the following heads:

1. Cost per unit;
2. Profit margins;
3. Earnings per share and P/E ratio;
4. Bonus payments;
5. Dividend distribution policy; etc.

The variables to be studied for each company and the relative ratios are set out below:

### **13.2 Size for the Company**

The expansion and growth of the company has to be judged by the growth of sales, assets, gross block and net block. The growth of the company can also be judged by the rate of growth of any of the above variables while the size of the company has to be judged in terms of its sales, installed capacity utilization with a view to see that the company is of an economic size.

The profitability of the company is to be judged by the net profits (PAT) or cash profits in relation to sales, equity or net worth, dividend distributed, etc.

The following variables are also to be analysed for a company analysis:

1. Company's share in industry-its capacity utilisation vis-a-vis the utilisation in the whole industry.
2. Modernizations and expansion plans - reflected in tax planning, retention policy, bonus policy, etc.
3. Earnings per share, cash earnings per share and P/E ratios.

### **13.3 Need for Forecast**

The disadvantage of the above type of analysis is that it is based on the past performance and that it may not be an indicator of future performance. So, a forecast is necessary for the coming six months or one year for making an investment. Such a forecast can be made on the basis of some assumptions of costs, prices and demand for its products. The earnings, gross and net profits, the EPS, etc. can be worked out and an assessment can be made whether the scrip is worthwhile purchasing 'judged by its prospects a year hence.

For making a forecast, some subjective weights may be given to management (50%), expansion and growth (25%), prospects of bonus (15%) and other subjective factors like Government patronage or changes in market\* conditions (10%). These give a total weight of 100%. Companies in the same industry group can be studied by using the above weights to decide on which scrips to purchase depending on their rating. These weights and consequent judgement will be subjective and the result would depend on the ability and expertise of the analyst.

### **13.4 Guidelines for Investment**

A company which has a high intrinsic worth is not necessarily the best stock to buy. It may have no growth prospect or it may be overpriced. Similarly, a company that performs well during any one year may not be the best to buy. On the contrary, a company which has been doing badly for some time might, have turned the corner and it may be the best buy, as its shares may be underpriced and it has good prospects of growth. So, an analyst should not be guided by one or a few indicators but, has to consider the performance of the whole company, and over a period of time, say, 5 years. A company is to be judged in the background of the industry's performance, product nature, prospects of the industry, etc. A study of the industry factors constitutes the industry analysis. Next to economy's performance, industry's performance is vital for an assessment of a company's prospects and growth.

### **13.5 How-to Pick-Up Growth Shares?**



The growth companies are also called blue chip companies. The blue chips of yesteryears are not necessarily the blue chips of today. The investor has to review and assess the companies from time to time to locate the blue chips, based on fundamental analysis,

In order to enable one to identify these blue chips of tomorrow, one should know the nature and characteristics of these companies. A few guidelines in this regard are set out below.

Firstly, the management should be experienced and efficient; they should have the honesty, integrity and vision for expansion and growth.

Secondly, the market share of the company should be substantial and at least more than one-third. The larger the share, better the prospects of controlling the market and profit margins and expanding the operations. Bajaj Auto has a share of two-thirds in the two-wheeler and three-wheeler market. So is the case with Asian Paints, Laxmi Machine Works etc.

Thirdly, the company must be well-diversified into areas of growth potential. The growth potential changes from time to time. At present, industries with a growth potential are cement, paper, petrochemicals, etc. Thus, a company with a good diversification into such growth areas would do well in sales, profits, and earnings. Some of the consumer product industries producing soaps, cosmetics, toothpaste and powders etc. would generally record a consistent growth. A well-diversified company like L & T, Hindustan Lever, or Century Textiles is a good buy at any reasonable price.

Fourthly, the company's policy of expansion should be consistent and has a long-term perspective. Its assets growth should be reasonably good, reflecting its expansion goals. Growth helps the industry to stabilize its earnings from undue fluctuations and help the diversification process. The companies with a good asset growth are Reliance, L 8g T. GSFC etc.

Fifthly, the company should have a consistent and stable distribution policy with good profit margins. The company should distribute a reasonable proportion of its profits as dividends, bonus etc. Such companies like Ponds, Colgate, Glaxo etc., would be in good demand, as investors prefer regular dividend-paying companies.

Sixthly, such a company services the investors well with bonus or rights issue or convertible debentures, from time to time in addition to increasing dividend payments. The financial structure and utilization of capital are efficient. The profit margins are growing and the company is gaining in financial strength.

Lastly, the industry or industries in which the company is operating should have good growth prospects Pharmaceuticals, Biotech or multimedia. The products should be in continuous demand like food products, paper soaps, etc. or consumer nondurable goods. The future outlook of the company and prospects of the industry are interlinked, the prospects would depend also on the government policy and whether it is subject to price and distribution control or any restrictions or regulations. The prospects of the industry in which the company is operating should be assessed from all points of view.

Thus, in the choice of blue chips, the investor has to examine the fundamentals of the companies through balance sheet analysis for a period of at least five years before finally selecting the shares. The time of purchase should be decided on the basis of technical analysis referred to later. But for a layman, the purchase time should be in the bearish phase of the market, when an all-round decline in prices is recorded. At such times, the companies with strong fundamentals should be picked up at low prices for long-term investment if they can be classified as blue chips as per the above guidelines.

### **13.6 TYPES OF COMPANIES**

Growth companies: Observers have historically defined, growth companies as those that consistently experience above-average increases in sales and earnings. This definition has some limitations because many firms could qualify due to certain accounting procedures, mergers, or other external events. In

contrast, financial theorists define a growth company as a firm with the management ability and the opportunities to make investments that yield rates of return greater than the firm's required rate of return

1. This required rate of return is the firm's weighted average cost of capital (WACC). As an example, a growth company might be able to acquire capital at an average cost of 10 percent and yet have the management ability and the opportunity to invest those funds at rates of return of 15 to 20 percent. As a result of these investment opportunities, the firm's sales and earnings grew faster than those of similar risk firms and the overall economy. In addition, a growth company that has above-average investment opportunities should, and typically does, retain a large portion of its earnings to fund these superior investment projects (i.e., they have low dividend payout ratios). Growth stocks are not necessarily shares in growth companies. A growth stock is a stock with a higher rate of return than other stocks in the market with similar risk characteristics. The stock achieves this superior risk-adjusted rate of return because at some point in time the market Growth Companies and Growth Stocks get undervalued it compared to other stocks. Although the stock market adjusts stock prices relatively quickly and accurately to reflect new information, available information is not always perfect or complete. Therefore, imperfect or incomplete information may cause a given stock to be undervalued or overvalued at a point in time.
2. Cyclical Companies: If the stock is undervalued, its price should eventually increase to reflect its true fundamental value when the correct information becomes available. During this period of price adjustment, the stock's realized return will exceed the required return for Pi stock with its risk, and, during this period of adjustment, it will be considered a growth stock. Growth stocks are not necessarily limited to growth companies. A future growth stock can be the stock of any type of company; the stock need only be undervalued by the market. The fact is, if investors recognize a growth company and discount its future earnings stream properly, the current market price of the growth company's stock will reflect its future earnings stream. Those who acquire the stock of a growth company at this correct market price will receive a rate of return consistent with the risk of the stock, even when the superior earnings growth is attained. In many instances, overeager investors tend to overestimate the expected growth rate of earnings and cash flows for the growth company and, therefore, inflate the price of a growth company's stock. Investors who pay the inflated stock price will earn a rate of return below the risk-adjusted required rate of return, despite the fact that the growth company experiences the above-average growth of sales and earnings. Several studies that have examined the stock price performance since for samples of growth companies have found that their stocks performed poorly—that is, the stocks of growth companies have generally not been growth stocks.

Defensive companies are those whose future earnings are likely to withstand an economic downturn. One would expect them to have relatively low business risk and not excessive financial risk. Typical examples are public utilities or grocery chains—firms that supply basic consumer necessities. There are two closely related concepts of a defensive stock. First, a defensive stock's rate of return is not expected to decline during an overall market decline, or decline less than the overall market. Second, our CAPM discussion indicated that an asset's relevant risk is its covariance with the market portfolio of risky assets—that is, an asset's systematic risk. A stock with low or negative systematic risk (a small positive or negative beta) may be considered a defensive stock according to this theory because its returns are unlikely to be harmed significantly in a bear market. A cyclical company's sales and earnings will be heavily influenced by aggregate business activity. Examples would be firms in the steel, auto, or heavy machinery industries. Such companies will do well during economic expansions and poorly during economic contractions. This volatile earnings pattern is typically a function of the firm's business risk (both sales volatility and operating leverage) and can be compounded by financial risk. A cyclical stock will experience

changes in its rates of return greater than changes in overall market rates of return. In terms of the CAPM, these would be stocks that have high betas. The stock of a cyclical company, however, is not necessarily cyclical. A cyclical stock is the stock of any company that has returns that are more volatile than the overall market—that is, high-beta stocks that have high correlation with the aggregate market and greater volatility. Analysts are more likely to find such stocks outside the top tier of companies that are scrutinized by numerous analysts; in other words, look for “neglected” stocks.

### **Speculative Companies**

A speculative company is one whose assets involve great risk but that also has a possibility of great gain. A good example of a speculative firm is one involved in oil exploration. A speculative stock possesses a high probability of low or negative rates of return and a low probability of normal or high rates of return. Specifically, a speculative stock is one that is overpriced, leading to a high probability that during the future period when the market adjusts the stock price to its true value, it will experience either low or possibly negative rates of return. Such an expectation might be the case for an excellent growth company whose stock is selling at an extremely high price / earnings ratio—i.e., it is substantially overvalued. Some analysts also divide stocks into “growth” stocks and “value” stocks. As we have discussed, growth stocks are companies that will have positive earnings surprises and above-average risk adjusted rates of return because the stocks are undervalued. If the analyst does a good job in identifying such companies, investors in these stocks will reap the benefits of seeing their stock prices rise after other investors identify their earnings growth potential.

Value stocks:

Value stocks are those that appear to be undervalued for reasons other than earnings growth potential. Value stocks are usually identified by analysts as having low price-earning or price-book value ratios. Notably, in these comparisons between growth and value stocks, the specification of a growth stock is not consistent with our preceding discussion. In these discussions, a growth stock is generally specified as a stock of a company that is experiencing rapid growth of sales and earnings (e.g., Intel and Microsoft). As a result of this company performance, the stock typically has a high P/E and price-book-value ratio. Unfortunately, the specification does not consider the critical comparison between intrinsic value and market price. Exhibit 15.1 shows the recent performance of a growth and value stock index for the period 1991-2001. The two series were very close during 1991-1996. Growth outperformed during 1998-1999 but declined substantially in 2000-2001. Thus, for the total period, value stocks were superior.

Favorable Attributes of Firms The following attributes of firms may result in favorable stock market performance:

1. The firm's product is not faddish; it is one that consumers will continue to purchase over time.
2. The company should have some long-run comparative competitive advantage over its rivals that is sustainable.
3. The firm's industry or product has market stability. Therefore, it has little need to innovate or create product improvements or fear that it may lose a technological advantage. Market stability means less potential for entry.
4. The firm can benefit from cost reductions. An example would be a computer manufacturer that uses technology provided by suppliers competing to deliver a faster and less expensive machine or computer chip.
5. Firms that buy back their shares or companies where management is buying shares, which indicates that its insiders are putting their money into the firm

The following tenets are from Hagstrom's *The Essential Buffett*

### **Business Tenets**

- Is the business simple and understandable? (This makes it easier to estimate future cash flows with a high degree of confidence.)
- Does the business have a consistent operating history? (Again, cash flow estimates can be made with more confidence.)
- Does the business\* have favorable long-term prospects? (Does the business have a “franchise”—meaning a product or service that is needed or desired without a close substitute and is not regulated? This implies the firm should have pricing flexibility.)

#### **Management Tenets**

- Is management rational? (Is the allocation of capital to projects that provide returns above the cost of capital? If not, do they pay capital to stockholders through dividends or repurchase stock?)
- Is management candid with its shareholders? (Does management tell owners everything you would want to know?)
- Does management resist the institutional imperative? (Does management not attempt to imitate the behavior of other managers?)

#### **financial Tenets**

- Focus on return on equity, not earnings per share. (Look for strong ROE with little or no debt.)
- look for a company with relatively high profit margins for its industry.
- Make sure the company has created at least one dollar of market value for every dollar retained.

#### **Market Tenets**

- What is the value of the business? (Value is equal to future free cash flows discounted at a government bond rate. Using this low rate is considered appropriate because the business owner is very confident of cash flow estimates due to extensive analysis, and this confidence implies low risk.)
- Can the business be purchased at a significant discount to its fundamental intrinsic value?

### **13.7 Self-Check Questions**

**Question 1:** What financial statement provides insights into a company's profitability over a specific period?

- Balance Sheet
- Income Statement
- Cash Flow Statement
- Statement of Retained Earnings

**Question 2:** The Debt-to-Equity ratio is a metric used in company analysis to assess:

- Liquidity
- Solvency
- Profitability
- Asset turnover

**Question 3:** What does the Return on Equity (ROE) measure in company analysis?

- Profitability
- Liquidity
- Efficiency
- Solvency

**Question 4:** The concept of Economic Moat in company analysis refers to:

- A company's competitive advantages
- financial leverage

- c. Current ratio
- d. Inventory turnover

**Question 5:** What is the purpose of SWOT analysis in company analysis?

- a. Evaluating financial ratios
- b. Identifying a company's strengths, weaknesses, opportunities, and threats
- c. Analyzing cash flow patterns
- d. Assessing market volatility

**13.8 Short Questions**

1. What financial statement provides insights into a company's profitability over a specific period?
2. How does the Debt-to-Equity ratio contribute to assessing a company's financial structure?
3. What does Return on Equity (ROE) measure in the context of company analysis?
4. What is the significance of SWOT analysis in evaluating a company's strategic position?

**13.9 Long Questions**

1. In company analysis, what role does Earnings Per Share (EPS) play in evaluating financial performance?
2. What information does the Cash Flow Statement convey about a company's financial health?
3. Why is the analysis of a company's management team considered crucial in assessing investment potential?
4. How does a Price-to-Earnings (P/E) ratio help investors in evaluating a company's market valuation?

**13.10 Reference**

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**13.11 Self-Check Questions Answers Key**

1. b. Income Statement
2. b. Solvency
3. a. Profitability
4. a. A company's competitive advantages
5. b. Identifying a company's strengths, weaknesses, opportunities, and threats

**TECHNICAL ANALYSIS**

**STRUCTURE**

- 15.1 Introduction
- 15.2 Basic Tenets Technical Analysis
- 15.3 Tools of Technical Analysis
- 15.4 Dow Theory
- 15.5 Principles of Technical Analysis
- 15.6 Speculative Trading and Technical Analysis
- 15.7 Oscillators
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- 15.11 References
- 15.12 Answer to Self-Check Questions

**15.1 Introduction**

While fundamental analysis and security evaluation explain why share prices fluctuate, how they are determined and what to buy or sell, the technical analysis will help the decision when to buy and sell. The traditional theory of capital market efficiency postulates that entry into the market at any time would lead to the same average return as that of the market. But in the real world of imperfections, there are investors who have burnt their fingers by entering the market at the wrong time. Investment timing is, therefore, crucial as the market is continuously jolted by waves of buying and selling and prices are moving in trends and cycles and are never stable. The Stock market is different from other markets, as there is a continuous buying and selling and bid and offer rates as under a system of auctions. The resultant prices, led by the sheer force of the market, may fluctuate either way and may exhibit waves or trends. Entry and exit in the market will, therefore, make all the difference to the spread between buying and selling prices and the profits or losses. Timing of investment is, therefore, of vital importance for trading in the stock market.

**15.2 Basic Tenets of Technical Analysis**

Technical analysis of the market is based on some basic tenets, namely, that all fundamental factors are discounted by the market and are reflected in prices. Secondly, these prices move in trends or waves which can be both upward or downward depending on the sentiment, psychology and emotions of operators or traders- Thirdly, the present trends are influenced by the past trends and the projection of future trends is possible by an analysis of past price trends. Analysis of historical trends confirmed the above principles and the Random Walk theory explaining the randomness of price changes has been found to be not applicable by the technical analysis in practice.

**15.3 Tools of Technical Analysis**

**1. Daily Fluctuation or Volatility**

Open, High, Low and Close are quoted. Changes between Open and Close or High and Low can be taken in absolute points or in percentages to reflect the daily volatility. Such fluctuation can be worked out on weekly, monthly or yearly basis also to reflect the general volatility of the market. The use of this

indicator is to caution the investor against high volatility in any scrip. But a stable uptrend or downtrend can be discerned from these changes for the investor to interpret the market.

A Bar chart as given below can be used to depict the daily variations:

High	high	high
Close	Open	Close
	Close	Open
Low/open	low	low

A yearly High-Low indicates the possible levels within a range that the price may move which helps to locate entry and exit points.

## **2. Floating Stock and Volume of Trade**

Floating stock is the total number of shares available for trading with the public and volume of trade is any part of that floating stock. The higher this proportion, the higher is the liquidity of a share which is to be purchased or sold. Volume trends are also a supporting indicator to the price trends to interpret the market.

## **3. Price Trends and Volume Trends**

The Chartist method and moving average method can be used to depict these trends.

## **4. Rate of Change of prices and Volumes or the ROC Method**

This is useful like the moving average method to indicate more clearly the buy and sell signals. The Chartist method is useful to indicate the directions and the trend reversals. ROC is calculated by dividing the today's price by the price five days back or few days back. It can be expressed as percentage or positive or negative change. Thus, they can be moving around 100, in the case of percentages or zero line, in the case of positive and negative percentage changes.

## **5. Japanese Candlestick Method**

There are three main types of Candlesticks with each day's trade being shown in the form of candlestick s. Each stick has the body of the candle and a shadow. The body shows the open and close prices while the shadow shows the high and low prices, the three main types are as follows:

- a. Closing price is higher than open price (White candlestick).
- b. Closing price is lower than the open price (Black stick).
- c. Open and Close are at the same level (Doji candlestick).

This method will indicate any likely changes in trends in the short-run.

## **6. Dow Theory**

There are three major trends in this theory: Minor, intermediate and major trends, these represent daily or weekly, monthly and yearly trends in prices respectively comparing the price trends to waves, tides and ripples.

## **7. Elliot Wave Theory**

The market is unfolded by a basic rhythm or pattern of 5 waves up to be corrected by three wave s down with a total of 8 waves a philosophy of price trends.

## **8. Theory of Gaps**

Gaps in price between any two days causing a discontinuity is called a gap. The high of one day may be lower than the low of the previous day when prices are falling. Gaps indicate the likely acceleration of the trend or reversal.

Gaps are of different categories, namely:

- a. Common gaps - When prices move in a narrow range, a gap can occur in prices.
- b. Break out gaps - When price trend is likely to change, a gap can occur in either direction. This gives a break to congestion in any direction.
- c. Runaway gaps - These gaps occur continuously in a downward phase or an upward phase, accelerating, or decelerating the trends.
- d. Exhaustion gaps - These occur when the rally is getting exhausted. When the runaway gap is coming to an end, there can be exhaustion gap to indicate the likely completion of the uptrend.

9. **Advance Decline Line or Spread of the Market**

The ratio between Advances to declines will indicate the relative strength of upward or downward phase. When the advances are increasing over declines it is an upward phase and the reverse indicates the downward phase.

10. **Relative Strength Index (RSI) of Wells Wilder**

It is an oscillator used to identify the inherent strength or weakness of particular scrip. R.S.I. is calculated for one scrip while RSC or the relative strength comparative, is the ratio of two prices of two different scrips, used for comparison of two or more scrips. RSI can be calculated for any number of days say 5 or 10 etc. to indicate the strength of price trend.

15.4 **Dow Theory**

The Dow Theory postulates that prices of industrial securities tend to move in tune with business cycles of the boom, depression etc. in the economy. As the corporate performance depends on the industrial growth and the tone of the economy, prices of shares should broadly reflect the overall trends in the economy, which in developed countries are dependent on the business cycles and business expectation. If the business conditions are good, demand increasing, industrial performance will be good and the corporate share prices will be on the upswing. The reverse is true in time of recession and depression in the economy. The trends in the economy are reflected in the market average prices of shares. All fundamental factors are thus discounted by the market, and get reflected in average prices. It will thus be seen that factors affecting these supply and demand conditions in the market are summed up in the average prices in the market. A study of these average market prices is what is attempted in\* technical analysis and its trends are in the form of peaks, troughs and cycles.

**Major Trend**

The trends in stock prices are divided under three heads -primary, secondary and minor. The primary trend is a long-term trend of a year or more reflecting the basic mood of the market showing upward or downward movement. The secondary or intermediate trend represents the correction to the primary trend and is of a short duration of a few weeks to a few months. The minor trends may be in either direction on a few weeks to a few months. The minor trends may be in either direction on a daily or weekly basis, but pointing to the underlying primary trend either upward or downward. These three trends are comparable to the tides, waves and ripples of the sea respectively. If the successive waves move, further inland towards the beach than the preceding ones, then the tide would reflect the upward trend through higher peaks and troughs. On the reverse side, if the tide is moving inwards into the sea then the trend is downwards and prices tend to decline on average. Each successive minor trend and intermediate trend result in a net downward movement and support the primary market trend in the downward direction.

In the Dow Theory, the major trends, namely, bullish or bearish trends, have three phases. In the first phase of bullish trend, called the accumulation phase, only a select elite of investors who perceive the coming things first start buying shares. In the second phase, the followers of trend notice a distinct uptrend and begin to participate in the buying and then the mass buying starts. The third phase is the end



of the uptrend when the first elite group who initiated the first phase should dislodge their shares for profit-taking. Then there will be a reversal of the trend. The fall in the prices in a bull phase is a technical reaction and a rise in prices in a bear phase is a technical rally. The concentration in the hands of bull is called accumulation, which when sold off gets distributed and there will be a decline in prices so far as the volume of trade is concerned, it should expand in the direction of the major trend. During the uptrend period, the volume would expand when prices rise and decrease when prices decline. During the downtrend, there will be a reversal of the trend and the volume will expand when prices drop and contract when they start rising.

The only problem which is a grey area in the Dow Theory is the signal for reversal of the trend. The first symptom of a change would call for "buy or sell" decision and those who perceive the change first would gain in speculation. As the primary trend continues, the gain from speculation decreases. The fact of the matter is that it is not easy, except for the expert eyes, to detect a change in direction in the existing trend and the first leg of the new trend in the opposite direction. For knowing the reversal, point a lot of experience and expertise is necessary in this line.

The reversal pattern is explained below. A, B, C are the successive peaks during the upswing, but M is a point of trough which is lower than the earlier troughs of D and E. The point S1 is the point of sell signal. This is called the failure swing diagram.

In the non-failure swing diagram, E is below M but the peak C is still above peak B. So, it is not certain whether the point S1, or S2 should be the sell signal. Whether the point of reversal has set in or not is not clear from the diagram. Such occasions arise in both upswing and downswing diagrams

#### **Chartist Method**

As referred to earlier, technical analysis is a study of the market data in terms of factors affecting supply and demand schedules, namely, prices, volume of trading etc. A study of the historical trends of market behaviour shows the cycles and trends in prices which may repeat as the present is a reflection of the past and the future of the present. This is the basis for forecasting the future trends which are used for deciding on the basis of the buy or sell signals. For forecasting, analysts use charts and diagrams to depict the past trends and project the future. But these methods are rough and ready methods and there are no foolproof methods of forecasting the stock prices. The technical analysis only helps to improve the knowledge of the probabilities of price behaviour (upswing or downswing) and help the investment process. The technical analysis does not claim 100% chance of success in predictions that are made for investment.

In view of the limitations inherent in the technical analysis, this analysis is generally juxtaposed with fundamental analysis of the market and the scrips. It was the past experience that the receipt of information and the actual price absorption of the information would not coincide and there is a time lag between them. As a result, the current price changes would give a clue to the subsequent price changes, if properly analyzed and interpreted.

In the market analysis, the variables to be taken into account are the breadth of the market, volume of trading etc. Market breadth is the dispersion of the general price rise or decline, which means daily accumulation of a net number of advancing or declining issues. Breadth analysis focuses on change rather than level in prices. Breadth of price changes in terms of the number of gainers or losers among the scrips is analyzed to know the width of rise or fall in prices.

#### **Breadth of the Market**

The breadth of the market analysis is based on the nature of stock market cycles. Bull markets are viewed as long-drawn-out affairs, during which individual stocks reach peaks gradually with the number of individual peaks accelerating as the market averages rise to the turning point. Thus, the turning point for a bull phase is at that point where a larger number of stocks are falling when the averages are still rising. In

the bear market, there is a large number of stocks falling in a period of time. The end of the bear market is near when there is a selling climax and a large number of sellers rush to sell all at once. The breadth is measured by the number of scrips rising or falling to the total number. In a bull phase there will be a large number of net rises and in a bear phase, a large number of net falls.

Normally, the breadth and the market average (BSE Index) lines move in tandem. In a bull phase, if the breadth line declines to successive new lows, while the market average is going up, it means that a larger number of scrips are declining although blue chips included in the BSE Index continue to rise, but the suggestion is that there is an approaching peak in the averages and a major downtrend is in the offing later.

### **Volume of Trading**

The above trends of the breath of the market are to be examined along with the supporting data on volume of trading. Price trends follow the volume trends in general. Historical data analysis of price and volume movements indicate that in a normal market, the price rise is accompanied by an expanding volume. If the level of volume is declining more than in the previous rally in times of bullish trend, it warns of a potential trend reversal. Termination of a bearish phase is often accompanied by a selling climax. Following a decline in prices, a heavy volume of trade with little price change is indicative and is to be studied carefully before a final decision is taken on the state of the market, whether bullish or bearish, the phase of the uptrend or downtrend and look for buy and sell signals at the start of the reversal trends.

Both the price spread and volume trends are the result of demand and supply pressures. In the short-run, or on a day-today basis, the demand and supply for each scrip is based on a host of fundamental, technical and other factors. Trading in futures, options and arbitrage activity would distort the pure demand and supply analysis. The money flow analysis of the market generally adopted by the analysts is also distorted by the dynamics of insider trading, short sales, "buying on weakness" and "selling on strength", etc.

### **Tripod of Technical Analysis**

1. Market prices are determined by a host of fundamental, technical and other factors which are both rational and irrational. It is possible that the market prices may be overvalued or undervalued always.
2. Average market price discounts all developments and is a reflection of the sum total of all forces operating on the market.
3. History or past trends have a role in the shaping of the future and as such an analysis of the past helps the projection for the future.

The above tripod leads to a science of recording in a graphic form, the price trends. The actual history of trading on the stock market is recorded in terms of price changes, namely, oscillators, and the volume of transactions in any scrip together. Based on the past behaviour, the future trends are predicted and investment suggestions are made based on such predictions of trend changes. The timing of an investment when to buy or sell is facilitated by a study of these charts and graphs. There are no doubt subjective factors based upon the behaviour and psychological aspects of human beings which influence the market. As opposed to fundamental factors, which are statistical, incorporating the financial and physical variables of corporate units and economy, the market is also influenced by non-statistical information such as behavior aspects, emotions, etc. For the latter factors, technical analysis assumes importance in the investment strategy. In particular the decision to buy or sell is a fundamental decision, but the decision when to buy or sell is a decision arising out of technical analysis of the market.

#### **15.5 Principle of Technical Analysis**

The principles involved in technical analysis and in particular in the Dow Theory analysis, can be summarized as follows:

1. Principle of wave motion and trends leads to different types of price trends.
2. Action and reaction resulting from buying and selling pressures lead to corrections and rallies to the major uptrend and downtrends respectively.
3. Principle of congestion involving support and resistance lines results in a phase of activity, in which the market is undecided, hesitant and the trend undermined. The prices move within a band of resistance and support lines, and the trends involve up and down movements in a more or less horizontal path, until the prices are driven up or down.

In congestion, the continuous pressures of buyers are met equally. But when the buyers exceed the sellers, both in volume and value of deals, then the price emerges from the bottom of the range and there will be an up breakout. When the sellers predominate, there will be a down breakout in the price level, the resistance and support lines are broken in either case. When buyers are increasing purchases and the volume increases, then there is said to be accumulation. When sellers are increasing their sales and the volume rises, then there is said to be distribution. When buying exceeds selling and persists, then there is a breakout of prices from the congestion into a bull phase. On the other hand, when selling exceeds buying and continues to persist, the congestion is broken out into a bear phase.

### **Charts and Trend Lines**

The use of charts for analysis of prices in technical analysis was referred to. Fitting a trend line for price changes on a daily basis is the first step in the analysis of charts. These changes may be pointing upwards or downwards or stable over a horizontal one. The movements are such that there are both peaks and troughs in these price changes - peaks showing an upward trend troughs or reaction to the uptrend, viz., line joining the lowest points or troughs pointing up. If this line is pointing downwards, then it is a bearish phase (Fig. 28.4). If the movements are downwards generally, then there will be rallies moving up the prices. These upper peaks, if they are joined, give the trend line as much as the lowest troughs. The bull phase depicts the rising peaks successively (Fig.), while the bear phase shows the falling peaks successively (Fig.)

These support lines and resistance lines are clearly noticed when the prices are moving in a narrow band for some time. When the price pierces the resistance line, this is the first indication of the reversal of the trend in the upward direction. So also, in a bull phase when the price line falls below the support line, a reversal of the trend is indicated.

Various configurations of price movements like stable pattern, M and W patterns, head and shoulders etc. are formed. It is possible that various triangles, flags, pendants, etc. can be described by the price trends. The basic analysis involves the deciphering of the trend identifying of the reversal and fixing up of buy and sell signals in these price movements. The stable price pattern is ideal for genuine investors to enter the market.

### **Moving Averages**

The analysis of the moving averages of the prices of scrips is another method in technical analysis. Generally, 7-day, 10-day and 15-day moving averages are worked out in respect of scrips studied and depicted on a graph along with similar moving averages of the market index like BSE Sensitive Index. There will then be two graphs to be compared and when the trends are similar, the scrip and BSE market index will show comparable average risks.

The theory of moving averages also lays down the following guidelines for identifying the buy and sells signals. Whenever the moving average price line cuts the actual price line of the scrip of the market index from the bottom, it is a signal to sell shares. Conversely, when the moving average line cuts the actual price line from above, it is the right time to buy shares. Here the comparison can be made separately for the BSE market index moving average with its actual price index and the moving average price of any scrip with its actual price.

### **Advantages of Moving Averages**

Since the price fluctuations are wide and frequent, reflecting the volatility of the market and the scrips, some amount of smoothing can be achieved by taking the moving averages of the prices. Generally, the closing prices of these scrips are taken for the moving averages. The usefulness of this will also depend on the number of days (7 days, 10 days, 20 days, etc.) for which these averages are worked out. These averages can be represented in a graphical form to help identification of buy and sell signals. The first indication is that when the actual scrip price crosses for short-term moving average line (or, say, 7 or 10 days). This is to be supported by other evidence of a reversed of the trend to justify the buy signal. The short-term moving average of 7 or 10 days should cross the longer-term moving average of 15 or 20 days, which in turn should cross the further long-term moving averages (or, say, 60 or 120 days) to finally confirm the buy signal is to be given when the moving average line cuts the actual price line from above. It is cuts from below, then the signal is to sell. The signal of moving averages can also be confirmed by further analysis of other technical factors like the trend reversal shows in the chart graphs referred to above.

### **Criticism of Dow Theory**

The Dow Theory is subject to various limitations in actual practice. Dow has developed this theory to depict the general trend of the market but not with the intention of projecting the future trends or to diagnose the buy and sell signals in the market. These applications of the Dow Theory have come in the light of analytical studies of financial analysts. This theory is criticized on the ground that it is too subjective and based on historical interpretation; it is not infallible as it depends on the interpretative ability of the analyst. The results of this theory do not also give meaningful and conclusive evidence of any action to be taken in terms of buy and sell operations.

Fig. Daily actual prices are dashed lines. When the daily price line cuts the moving average of 5 days and the line of 5 days cuts the line of 20 days, from above, there are sell signals. The buy signals are when the actual prices cut the moving average lines from below.

#### Charts

To drawing of charts, diagrams, graphs, etc. is a method by which the technical analysis is made. These charts depict the trends in prices, rate of changes in prices, volume of trading, etc.

There are various types of charts, namely, point charts, line charts, vertical bar charts, etc. All these would depict the trends in prices and breadth of trading which are both indicators of buying and selling pressures and the market behaviour.

### **Head Shoulders**

The configurations emerging from the charts show different patterns. Of these, the most important is the "Head and Shoulders." It depicts a top and a reversal pattern in either the bull phase or the bear phase.

The left shoulder is formed when the prices reach the top under a strong buying impulse and trading volume becomes less than it did during the upswing to reach the top. Then there is another high-volume advance which takes the price to a higher top than in the case of the left shoulder. This is called the

"Head" top and followed by another reaction on less volume which takes prices down to a bottom near to the earlier recession. The third rally which takes the prices up reaches a height of less than that of the head and results on the right shoulder, which has a comparable height as the left shoulder. This type of configuration occurs under a bull phase and the exactly reverse configuration occurs in a bear phase. This is indicative of a likely reversal of the trend.

### **Breaking the Neckline**

IF the prices are having an uptrend movement in a bull phase and the configuration of the head and shoulders is noticed, then the analyst has to look for a possible trend reversal indicator. This can be

noticed when the third recession cuts the support line down across the bottoms of the two reactions between the left shoulder, and the right shoulder (called the neckline) and the actual price line should go below the neckline by about 3 to 5 points of the market price.

There are a number of other patterns which are to be looked into by analysts, if they are doing an in-depth analysis. These patterns are useful to identify the primary or secondary trends. Some signs of reversal can be seen in the "rounding turns" and triangles and gaps. However, some gaps are attributed to ex-dividend, ex-bonus, etc. or due to symptoms of consolidation and acceleration or exhaustion and reassessment or it may be a break away gap of the market. Some insight into the future movement of prices can be had by a close study of the pattern that prices are making. Thus, forecasting is a practical use to which the charts in general and these configurations in particular can be put to.

The bull market indicators are as follows. The bear market has been in progress for a long time. The peaks of advancing points are still sloping upwards. The number of advancing points is substantially higher than the number of declining points. Then if the stock establishes certain levels of accumulation and consolidation over a number of days or weeks and if the volume of trading slows down, then it is certain that distribution is taking place and it will meet with the resistance level soon. So, as a rule, it is safe to buy at the top or three points below or around the old bottom.

The bear market indications may be set out as follows. A bull market has been in progress for a long time. The recovery is occurring on low volume and the number of advancing points is only slightly higher than the number of declining points. The line connecting the peaks of declining point is sloping upwards but the price line may cross the support level soon due to exhaustion of the market pressure. It is better to sell at the previous high to peak or 3 points around that high.

### **Resistance and Support Lines**

The points and figure charts should clearly indicate the bull or bear phases. But some configurations do not clearly indicate the definite signals such as in the case of a symmetrical triangle. While the ascending triangle and descending triangle indicate the upward and downward phases respectively (Figs.)

Consolidation refers to the interval in which the price of a share does not break through in either direction. Then the price movements are in a narrow band with both the resistance and support lines moving horizontally.

### **15.6 Speculative Trading and Technical Analysis**

Timing of purchase and sale is very important particularly for speculative trading. The basic rule is to follow the daily chart of highs/lows or tops/bottoms. When the long-term trend is bullish and price trend is pointing up, the advance line must make higher tops and higher bottoms. One can enter the market any time so long as the uptrend is continuing as indicated by the higher tops and bottoms. The best buy point is when the prices decline by 50% of the higher ever peak achieved or at a level of 50% between the extreme low and extreme high. The best points to sell are when prices rise to the old top levels or near to those levels or when the prices start advancing after being below the 50% point between the extreme high and extreme low. There is no sanctity of these levels, as they are set by experience and observation. Experience and analysis are the best guides in these matters.

Before taking the buy and sell decisions, one has to observe the rules of the game:

- (i) Put stop loss order at, say, 10% of one's capital at any time. This will protect the extent of losses possible in speculation.
- (ii) Draw the daily, weekly, monthly charts separately and observe the highs and lows and the mid-points and turning points carefully.

The buy and sell signals can be located at 3 points below the highs or 3 points above the lows, etc.

### **Elliot Wave Theory**

There are a number of theories which seek to explain the behaviour of the market. In the area of technical analysis, one such theory is that of Ralph Elliot. According to this theory, the market is unfolded through the basic rhythm or pattern of 5 waves up and 3 down to form a complete cycle of 8 waves. This wave principle is derived from empirically tested rules from the studies on stock market price trends. The basic pattern of waves is reflected in various cycles and waves. One complete cycle consists of waves made up two distinct phases - bullish and bearish. Thus, the wave 1 is upwards and wave 2 corrects the wave 1. Similarly, waves 3 and 5 are those with an upward impulse but are corrected by waves 4 and 6 respectively. An entire sequence of 1 to 5 waves is corrected by the sequence of bearish waves, namely, A, B, C. Thus, in a complete cycle, there are 5 bullish phases and 3 bearish phases, as shown in Fig. 27.11. The impulse waves are the waves in the direction of the main trend and the corrective waves are less in number but reverse the earlier trend. This is based on the principle that action is followed by reaction. Once the full cycle of waves is completed after the termination of the 8-wave movement, there will be a fresh cycle starting with similar impulses arising out of market trading, change of sentiment in the market etc. Again, there will be 5 cycles upwards constituting the bullish trend and 3 waves downward constituting the bearish trend. According to the followers of Elliot wave theory, accuracy and timeliness of the waves is the basis for their usefulness in identifying the buy and sell signals in the market. A lot of empirical work has gone into the study of the waves and cycles of prices. It has been found that the behaviour of prices on the stock markets conforms to the cycles and waves and it is possible to use these data for predicting the price change and deciding on the buy and sell signals.

#### Operation of Wave Theory

The wave is a movement of the market price from one change in the direction to the next change in the direction. The waves are result of buying and selling impulses emerging from the demand and supply pressures on the market. If the demand exceeds supply, there is pressure of overbought position leading to a rise in prices. If the supply exceeds demand, there is an oversold position in the market leading to a downward trend in the prices. Depending on the pressure of the oversold and overbought position, the waves are generated in the prices.

The stock market has been found to behave in a consistent manner giving rise to a basic rhythm and a wave movement in prices. The basic rhythm is reflected in 3 impulses in one direction followed by 2 waves of corrective nature with a total of 5 in the wave phase and 3 cycles in a reverse phase. These 3 correct the entire movements of 5 major upward movements.

The personality of each wave is an integral part of the reflection of mass psychology that it embodies. Although sometimes these wave counts are not clear, the shape and length may vary depending on the buying and selling pressures. But the analysts who have the experience and expertise can discern the waves in both upward and downward directions and also the impulse waves and corrective waves. These will help the analyst to learn what the chart tells regarding the phase and turning points. The wave principle offers the tools of identifying the market turns and their approach. As a limitation, however, it should be noted that the wave theory is not perfect and there are many limitations in its practical use. The rhythm as well as the count number of the waves may not be consistent and it may not be possible to clearly discern the turnings points and take proper decision on buy and sell. But on the whole, it should be accepted as one of the tools of technical analysis for the investor and trader to decide on the timing of investment.

#### 15.7 Oscillators (Rate of Change or ROC)

Oscillators refer to the velocity of price changes reflecting the market momentum which is measured by the rate of change of prices. This rate of change may be over the short period of 5 to 10 days or a longer period of 3 to 6 months. These oscillators may also be based upon the daily market prices when the volatility of the market spread is measured on a daily basis. Most oscillators would move in the same

direction, either positive or negative, depending on the trends of the market. A positive reading reflects on overbought market and negative reading reflects oversold market. These oscillators in the form of velocity of price changes are plotted around a zero line to reflect both positive and negative values of the graph. The shape of the oscillator will depend on the period for which it is calculated say 5, 30, or 20 days. If the oscillator is for a longer period, it will become a smoother curve and if it is compiled on a daily basis, it will be widely fluctuating.

Usefulness of the oscillator graph depends on a proper reading of the graph. As a general rule, if the oscillator reaches the extreme lower end, it is suggested to buy and if it is at the upper end, then the suggestion is to sell. The crossing of the zero line may also be understood as the first indication of buy and sell signals.

The crossing of the zero line is an important indicator of the price trends and its direction. The market is said to be overbought when the oscillator is at the upper extreme and is oversold when the oscillator is in the lower extreme. These points provide the signals of buy and sell to the investor. Generally, the peaks and troughs in the actual price chart also reflect the peaks and troughs of the oscillator graph. A study of oscillators is thus useful to confirm the conclusions arrived by the basic trend analysis and the use of charts.

### **15.8 Self-Check Questions**

Question 1: What does the term "Support Level" refer to in technical analysis?

- a. The highest point a stock is expected to reach
- b. The lowest point a stock is expected to fall to
- c. The average trading volume of a stock
- d. The dividend yield of a stock

Question 2: Which technical analysis tool helps identify trend reversals and potential buy or sell signals?

- a. Moving Average
- b. RSI (Relative Strength Index)
- c. MACD (Moving Average Convergence Divergence)
- d. Bollinger Bands

Question 3: What does a "Golden Cross" signify in technical analysis?

- a. A bullish signal where a short-term moving average crosses above a long-term moving average
- b. A bearish signal indicating a potential market downturn
- c. An overbought condition in the market
- d. A reversal pattern in candlestick analysis

Question 4: In Dow Theory, what are the three main phases of a market trend?

- a. Accumulation, Distribution, and Trend
- b. Bullish, Bearish, and Sideways
- c. Primary, Secondary, and Tertiary
- d. Accumulation, Markup, and Distribution

Question 5: What is the primary purpose of using Fibonacci retracement levels in technical analysis?

- a. Identifying potential trend reversals or continuation points
- b. Estimating the fair value of a stock
- c. Calculating dividend yield
- d. Assessing a company's financial leverage

### **15.9 Short Questions**

1. What does a "Double Top" pattern typically indicate in technical analysis?

2. How is the Relative Strength Index (RSI) used to assess a stock's overbought or oversold conditions?
3. What is the primary purpose of using Bollinger Bands in technical analysis?
4. How does a "Head and Shoulders" pattern help identify potential trend reversals?

**15.10 Long Questions**

1. How does the concept of a "Double Top" or "Double Bottom" pattern contribute to identifying potential trend reversals in technical analysis?
2. In technical analysis, explain the significance of the "Relative Strength Index (RSI)" and how it aids in determining overbought or oversold market conditions.
3. What role do "Bollinger Bands" play in technical analysis, and how can investors utilize them to identify volatility and potential price reversals?
4. How does the "Head and Shoulders" pattern provide insights into potential trend reversals, and what factors make it a significant chart pattern in technical analysis?

**15.11 Reference**

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**15.12 Self-Check Questions Answers Key**

1. b. The lowest point a stock is expected to fall to
2. c. MACD (Moving Average Convergence Divergence)
3. a. A bullish signal where a short-term moving average crosses above a long-term moving average
4. d. Accumulation, Markup, and Distribution
5. a. Identifying potential trend reversals or continuation points



### **EFFICIENT MARKET HYPOTHESIS**

#### **STRUCTURE**

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- 16.2 Assumptions of EMH
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#### **16.1 Introduction**

Financial Markets are influenced by money flows and information flows. In free and highly competitive markets, demand and supply pressures determine the prices or interest rates. In a theoretical sense, markets are said to be efficient, if there is a free flow of information and market absorbs this information fully and quickly. James Lorie has defined the efficient security market as follows:

"Efficiency...means the ability of the capital market to function, so that prices of securities react rapidly to new information. Such efficiency will produce prices that are appropriate in terms of current knowledge, and investors will be less likely to make unwise investments."

In the above context, what will happen is that market making mechanism is free and unfettered. There are no pockets withholding information or interested parties making undue gains by insider information by manipulation of supply and demand forces. There will be no monopoly elements and malpractices or corruption etc. is not prevalent. Information flow is free and costless. In the normal course, capital or money flows into areas which are most profitable which in turn depends on their efficiency and competitiveness? Money flows also from less

profitable to more profitable avenues if information flow is free, fast and costless. In such market scenario, all investors will have the same information, which is immediately reflected in the stock prices and nobody can gain extra profits. All instruments in the market will be correctly priced, as all the available information is perfectly absorbed and any investor entering the market any time will have the same advantage or returns. No excess profits are possible in this scenario. As the demand and supply forces are playing their role freely, the emerging prices are fair and move in a random manner. Prices of today are no more a function of the prices in the past as the day-to-day forces move in an independent and random manner. This concept of randomness has led to the theory of random Walk in the determination of prices. This Random Walk hypothesis is thus a special case of the Efficient Market Theory.

### **16.2 Assumptions**

For the capital market efficiency theory to operate, the following assumptions are made

1. Information is free and quick to flow.
2. All investors have the same access to information.
3. Transaction costs, taxes and any bottlenecks are not there and not hampering the free forces of market.
4. Investors are rational and behave in a cost-effective competitive manner for optimization of returns.
5. Every investor has access to lending and borrowing at the same rate.
6. Market prices are not sticky and absorb the market information quickly and the market responds to new technology, new trends, changes in tastes, habits of consumers etc., efficiently and quickly

### **16.3 Random Walk Theory**

As per this theory, changes in stock prices are independent of each other. The prices of today are independent of the past trends. The present price is randomly determined and only information flow can influence prices. As information is free and independent, the resulting prices are free and independent. A word of caution is necessary here. This Random walk hypothesis was postulated by researchers on the basis of empirical work on the market price behaviour. It does not therefore tantamount to the same theory as the capital market efficiency theory. On market efficiency promotes randomness and is therefore not a necessary condition. The fact that prices move independently has been found empirically and the analysts found an explanation for this in the efficient functioning of the markets and the market absorption of the information quickly and efficiently. The equilibrium price of a stock is determined by demand and supply forces, based on the available information. Quickly as the fresh information becomes available, a new equilibrium point is reached and the resultant price is thus independent of the part.

This Random walk hypothesis contradicts the Chartist and Technical School which believes that the present prices are the result of the past trends and that averages discount all fluctuations and that the average trends move in a predictable manner as the history of trends repeats itself. On the other hand, fundamental school postulates that the prices are a function of the intrinsic value of the stock and prices result from changes in the intrinsic value and information relating to fundamental factors influence the equilibrium prices, Random walk hypothesis is an offshoot or a phase of the capital market efficiency theorem. The market efficiency theory postulates that prices are the result of free flow of information which the market absorbs quickly and efficiently.

#### **Assumption of Random Walk Theory**

1. Market is supreme and no individual investor or group can influence it.

2. Stock prices discount, all information quickly.
3. Markets are efficient and that the flow of information is free and unbiased.
4. All investors have free access to the same information and nobody has superior knowledge or expertise.
5. Market quickly adjusts itself to any deviation from equilibrium level due to the operation of free forces of demand and supply.
6. Market prices change on I)<sup>7</sup> on information relating to the fundamentals, when the equilibrium level itself may shift.
7. These prices move in an independent fashion, within undue pressures or manipulation.
8. Nobody has better knowledge or insider information.
9. Investors behave in a rational manner and demand and supply forces are the result of rational investment decisions.
10. Institutional investors or any major fund managers have to follow the market and market cannot be influenced by them.
11. A large number of buyers & sellers and perfect market conditions of competition will prevail;

### **Random Walk and Efficient Market Theory**

Random Walk hypothesis is considered as restatement or a form of Efficient Market Theory by some Analysts. The EM (Efficient Market Hypothesis) is based on the flow of free and correct information and the market absorption of it. This information flow and its absorption by the market are the critical elements of this theory. There are three types of information affecting the market, namely, past Prices and trends, other public information and inside information. If all these types are not absorbed perfectly by the market, there is a possibility of some gaining above average returns, from the investment? Based on the above three types of information, the analysis has placed the market absorption and the related theory under three heads; namely:

- a Weak Form of EMH, which absorbs only market price information,
- b. Semi strong Form which absorbs price information and also all other public information and
- c. Strong Form which absorbs all types of information including insider information.

Weak form of EMH is closely related to the Random Walk Hypothesis, as the past prices are already absorbed by the market and the present prices move therefore independently of the past, which) is the same as the Random walk hypothesis. The present trends are thus random variables, and past data cannot be used to predict the future. All the information on the past data on price trends and volumes was already absorbed earlier.

As prices have no memory of the past, yesterday prices have nothing to do with today's prices. It is futile exercise that the present-day price can be derived by any past data, at least in short run.

If that is proved empirically, then prices move in a random fashion like the walk of a Drunkard, each move independent of the other. It is anybody's guess or the result of a toss of coin of what will be the price of TISCO today or Dr, Reddy Labs tomorrow. Thus, the Random Walk hypothesis states that prices move in random manner, independent of the past prices.

In the real world, the weak form of market efficiency may exist, as prices do move in an independent manner which the empirical evidence has shown as the past prices are already absorbed by the market. However, it is to be conceded that market imperfections, costs of information and blocks to the free flow of information may stand in the way of free play of market forces. Speculators and groups of interested parties or even brokers may manipulate the prices through cornering of shares and reducing the floating stock of the market.

Both the Random walk hypothesis and weak form of EMH, state almost the same thing, namely,

that knowledge of the past stock price does not aid the investors to gain any improved performance. The prices move independent of the other; although they may move in a random manner, they move around a trend line decided by the anticipated real earnings of the company and its fundamentals. Both EMH in weak form and the Random Walk Theory thus postulate that analysing the past does not improve the forecasting ability of stock prices and new information and prices that result from them cannot be predicted.

#### 16.4 Empirical Tests

There were several empirical tests on the Random Walk Theory. The question tested was whether the security prices follow a "Random Walk, whether today's prices are in any way a function of the past prices. Similarly weak form of Market efficiency also states that no investor can use the price: information of the past to earn superior return on investment. Investors who analyzed the past fundamentals involving price behaviour of the past did pick up good blue chips in their portfolio, but that did not give them superior portfolio

Empirical tests were conducted both in the past and the present and in India and abroad on the validity of Random Walk hypothesis. These tests to some extent support the hypothesis that price changes of today are independent of the past price changes. But the evidence is not conclusive and results varied with the time period's chosen and the data used. Cowles (1934) and Jones (1937) and Ken-dall (1953) etc. have shown in their research that security prices moved in a random fashion.

- **Filter Tests**

Filter tests are based on the principle of fixing a filter level varying from 0.5% to 5%, and then examine how well pick tip both trends and reversals. Thus, if a stock moves up a filter point say 5%; then buy it and hold it long; when it reverses by the same filter point, 5%, sell it and take a short position in it. A short position is one where one sells even without holding shares to deliver. When the stock price reverses again at the filter point, cover the short position by buying the shares in the market. By this process, the contention of chartists that prices and volume data of the past *are* supposed to tell the entire story and our approach is to forecast the trends and reversal only. Filtering is the screening of the important information affecting the prices from unimportant and see how well the price changes pick up the trends and reversals.

The results of tests conducted by Fama, Blume and Alexander on the basis of filter points also did not give conclusive proofs. If the filter level is low, the market swings capture these levels, but if the filter level is taken to be large, then results did not prove the hypothesis. Even in case of smaller filters, if transaction costs and other charges are taken into account the investors did not profit by using the filter tests. In sum, the results of filter tests did not prove the chartist school's Validity. Stock prices do not move in a predictable fashion of movement and reversals and one cannot make return in excess of the results warranted by the risks assumed by the investors. These results prove that the weak form of market efficiency holds good as it is not possible to gain more from the 'price information of the market.

- **Serial Correlation Tests**

Mr. Moore tested the movement of stock prices through serial correlation tests. Serial correlation is used to measure the extent of association of one series of security prices with a series in the past. Moore measures the correlation coefficient of price changes of one week with the price changes a week later and so on down the line. Its results showed that the correlation coefficient is very low indicating that a price rise did not show the tendency to the price fall and vice versa in any predictable manner. The price changes of this week do not therefore depend on the past price changes to any significant extent.

Fama did the same correlation tests on daily price changes in 1965. He studied the companies included in the Dow Jones Industrial average for five years. His research showed low correlation and this proved that there is no significant relation between price changes in successive periods. Serial correlation

or auto correlation of price data of different time periods did not show significant positive results. This proves that prices move in an independent fashion to a large extent.

- **Run Tests**

A run is a set of consecutive price changes in the same direction. The time series data on price changes of stocks are used to test whether there are dependencies among these series in terms of signs and reversal of signs. Fama made Run Tests to examine whether the price changes were likely to be followed by further price changes in the same direction. Run tests are conducted by the following method:

**Example**

Suppose the price changes are as follows:

Rs. 40, 40.5, 41.50, 41.5, 45.0, 44.0, 44.0, 44.5, 46.0, 45.0 - 10 observations for ten days, then count the number of consecutive signs in the same direction which will have (+) sign. Then count the number of signs with no change with a zero sign and those with consecutive price declines (with Minus sign). In the above example we have two positive, two zero sign and then one positive, one negative sign, two with zero sign and two again the positive sign and the last with a negative sign. These data show that there are no price dependencies. Yesterday's prices neither tell us of today's price nor today's price of tomorrow's price. There is no consistency in the price changes. This confusion also gives support to Random Walk hypothesis. Hagerman and Richmand made a similar study for price changes observed on securities traded on O.T.C. (Over the Counter), The efficiency of options Market was tested by Black and Scholles. Their research showed that the market was not perfect and that the transactions costs are so high that those trading in the market could not make abnormal returns. Granger and Morgenstem used a method known as Spectral Analysis in 1963 to test the Random nature of the stock prices. They did not notice any worthwhile relationship between the returns of security in one period and the returns in the previous periods. Most of these research results proved that security prices moved in a random manner and are not amenable to any precise forecast.

- Other Tests

Brownian motion in physics is a kind of Random Walk. The research conducted by Osborne showed that stock prices moved in a Brownian fashion. This means that simulation tests conducted by some authors showed that the mechanism of Random Walk generated variables which are similar to movement of stock prices. Robert's research in simulation tests in particular confirmed that price changes in the present period are independent of the past trends.

Research conducted by Levy in 1967 and by Jensen and Bennington in 1970 and many others did not find any significant abnormal returns due to a study of past price and volume data used in portfolio selection.

### 16.5 **Mutual Fund Performance**

Similarly mutual fund performance based on insider information is also not found to bear any superior returns. Friend in 1972, Sharpe in 1966 and Jensen in 1969 studied relative performance of mutual funds. It was found that their results are no better, the hypothesis tested and found void is that mutual funds could earn extraordinary returns and constantly achieve a higher average performance, because they have better access to insider information. Research studies made by Blume, Williamson and others in this line proved that the mutual-fund performance was not extraordinary or superior to average market performance. They have probably no insider information or their expertise is not superior or their administrative costs are higher than for individuals.

### 16.6 **Types of Efficient Market Hypothesis**

As referred to earlier, there are three forms of the Hypothesis, namely, weak form of EMH discussed under Random Walk Theory, semi strong form and strong form. In the words of Fama efficient market is defined as the market where there are a large number of rational profit maximiser

s actively competing with each trying to predict the future market and where the current information is almost freely and equally available to all participants.

Analysis of the Research studies done so far confirms partly the weak form of EMH. But the other two forms of the Theory are found not really realistic in the Practical Market Scene,

#### 1) **Semi Strong Form of EMH**

This form of EMH postulates that the market absorbs quickly and efficiently not only the price information but all publicly available information. Examples of this public information are found in the financial reports, Balance Sheets and Profit and Loss Accounts, Earnings and Dividend Reports, financial results etc. In addition to financial data, any material information affecting the financial position, such as financial structure, liquidity, solvency etc. is also found relevant and absorbed by the market in the price formation. Some data and information may be contradictory and biased information, rumors etc. would also flow in as news affecting the market. Revisions of data or changes in conditions of the company also affect the price. Studies on the time lag involved in the impact of any change of fundamentals on the company share price showed varied time lags, some being discounted even before the event is announced and some before the event took place. Such matters like earnings reports, bonus, rights affect the market even in anticipation before the formal announcement. The studies on the semi strong form of market efficiency related to the effect of any public information released, on the share price. The tests are invariably based on pricing models, as under the CAPM or some econometric models. These studies showed that the absorption of this information on share prices was inefficient and varied from scrip to scrip, and the time period studied. The inefficiency in the market mechanism absorbing this data is found to be corrected over a time period as investors take time to analyze and conclude the effect of any public information.

Thus, the semi strong form is empirically not well supported, but in many foreign markets, the semi strong form is found to be applicable and markets quickly absorb all published information. This is possible in those, markets due to strict law enforcement, but the market authorities, instantaneous display of all market information through electronic media and investor awareness of their impact and their quick absorption of the data. The revolution in informatics and communication technologies has made it possible for the application of the semi strong form of the EMH to these markets in developed countries.

#### 2) **Strong Form of EMH**

Under this hypothesis markets are so perfect that all information including private information, insider information and unpublished data, affecting the market are absorbed in the stock prices. Any investor can then gain the same average returns, whenever he enters the market. The information of all types is flashed to all investors simultaneously and all players have the same information at the same time. This means that only superior analysis and interpretation can give better market returns. This is possible for inside traders, floor brokers and institutional investors who have highly efficient market research component. The acumen with which price movements can be forecast can only result in superior return and not otherwise. Studies made in developed markets have showed that strong form of efficient market does not exist there also. Investors have not shown consistently higher returns seen with all the information available to them. It was also found that average investor could do better by picking up securities in a random fashion.

### 16.7 **Markets in India**

It will thus be seen that the EMU in its strong form is not realistic in the actual markets. In India, in particular, despite all best efforts of SEBI, market prices are rigged up, and it is common to notice various price behavioural patterns and manipulation of prices. Information is costly and time consuming. No unqualified empirical support is found for efficient market hypothesis, even in its weakest form in India.

In the case of institutional investors, equity market research is a tool used for forecasting prices and identification of undervalued scrips through fundamental analysis and determining the timings for purchase and sale by technical analysis. Although the followers of Technical or Chartist methods are very few in India, the major component of market research revolves around both fundamental and technical factors. In practice, therefore many of these Theories, including the random walk theory are inapplicable to Indian conditions. Speculation is as high as 70-80% in Indian markets and markets are not perfect and the absorption of all types of information is also not timely and efficient. The investors in India go by research into fundamentals and select the scrips on the basis of their assessment of the extent of overvaluation and under valuation.

Investment analysis therefore only involves the market research, fundamental analysis to a great extent and technical analysis to lesser extent with a view to select the undervalued scrips in the context of market conditions, reflect in the sentiment and psychology of the market.

#### 16.8 Critique of EMH

Opinion is divided as to the validity of the EMH particularly in the strong form. In weak form Random Walk hypothesis holds good, as per some studies. The semi strong form has found less support from the empirical studies. The perfect markets do not exist, as the stocks as a rule do not sell at the best price based on intrinsic values. Many times, speculative fervor sentiment and expectations play a greater role on the stock prices than the fundamental factors.

Similarly, news does not spread evenly among all segments of the market and among all investors. Institutional investors gain through market equity research and through economic of scale and better expertise. But individual investors do not gain by speedy spread of information and the absorption of the same by market. To gain, superior advantage, there was no adequate evidence from any of the empirical studies, based on prices or information. There is thus a controversy on the validity of Efficient Market Theory. In real market operations, this theory did not find support, as portfolio managers did not perform better based on the results of this theory.

This theory posed a challenge to both the chartist school and the fundamentalist school. If Random Walk or Weak Market Efficiency holds good, chartist school finds its tools are not of real value to gain superior returns. Similarly, if random walk holds good, chartist school finds its tools are not of real value to gain superior returns. Similarly, if random walk holds good, following the study of fundamentals will not secure better returns, unless additional information and insights into the company or better insider knowledge are available to investors.

#### 16.9 Self-Check Questions

**Question 1:** According to the Efficient Market Hypothesis (EMH), which of the following statements is true?

- a. Markets are perfectly efficient, and all information is reflected in stock prices.
- b. Markets are inefficient, and prices do not reflect available information.
- c. Markets are partially efficient, and only insider information impacts stock prices.
- d. Markets are efficient only for certain types of securities.

**Question 2:** In the context of EMH, what is the implication of the "random walk" theory?

- a. Stock prices follow predictable patterns.
- b. Stock prices move randomly, making predictions challenging.
- c. Technical analysis is highly effective in forecasting stock prices.
- d. Fundamental analysis is the only reliable method for predicting stock prices.

**Question 3:** According to the EMH, what is the role of active trading and stock picking in achieving consistent returns?

- a. Active trading can consistently outperform the market.

- b. Stock picking can generate consistent abnormal returns.
- c. Both active trading and stock picking are ineffective in the long run.
- d. Active trading is effective, but stock picking is not.

**Question 4:** Which form of the Efficient Market Hypothesis suggests that all past market prices and information are fully reflected in current stock prices?

- a. Weak Form EMH
- b. Semi-Strong Form EMH
- c. Strong Form EMH
- d. Adaptive Form EMH

**Question 5:** What does the Efficient Market Hypothesis imply about the feasibility of consistently achieving above-average returns through stock market trading?

- a. It is possible with sufficient technical analysis.
- b. It is possible through insider information.
- c. It is unlikely due to market efficiency.
- d. It is likely with accurate forecasting models.

#### 16.10 Short Questions

1. What does the Efficient Market Hypothesis (EMH) propose regarding the information reflected in stock prices?
2. According to the EMH, is it possible to consistently achieve above-average returns through active trading?
3. What is the concept of a "random walk" in the context of the Efficient Market Hypothesis?
4. Which form of the EMH suggests that all publicly available information is already reflected in stock prices?

#### 16.11 Long Questions

1. How does the Efficient Market Hypothesis impact the feasibility of making profits through insider trading?
2. In EMH, what role do technical analysis and fundamental analysis play in predicting future stock prices?
3. What are the three forms of the Efficient Market Hypothesis, and how do they differ in terms of information efficiency?
4. Does the Efficient Market Hypothesis assume that all investors have the same access to information?

#### 16.12 References

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#### 16.13 Self-Check Questions Answers Key

1. a. Markets are perfectly efficient, and all information is reflected in stock prices.
2. b. Stock prices move randomly, making predictions challenging.
3. c. Both active trading and stock picking are ineffective in the long run.
4. a. Weak Form EMH
5. c. It is unlikely due to market efficiency.





## **PROTFOLIO MANAGEMENT**

### **STRUCTURE**

- 17.1 Introduction
- 17.2 Investment Strategy
- 17.3 Modern Portfolio Theory (MPT)
- 17.4 CAPM & SML (Capital Assets Pricing Model and Security Market Line)
- 17.5 Sebi Guidelines for Portfolio Managers
- 17.6 Sebi Norms
- 17.7 Self-Check Questions
- 17.8 Short Questions
- 17.9 Long Questions
- 17.10 Reference
- 17.11 Answers to Self-Check Questions

### **17.1 Introduction**

Security analysis related to the analysis of individual securities within the framework of return and risk. Portfolio analysis makes an analysis of securities in the combined form.

The portfolio analysis considers the determination of future risk and return in holding various blends of individual securities. Portfolio expected return is a weighted average of the expected return of individual securities but portfolio variance can be something less than a weighted, average of security variances. As a result, an investor can sometimes reduce portfolio risk by adding another security with greater individual risk than any other security in the portfolio.

India, Portfolio Management is still in its infancy. Barring a few Indian banks, and foreign banks and UTI, no other agency had professional Portfolio management until 1987. After the success of Mutual Funds in Portfolio Management, a number of brokers and Investment consultants some of whom are also professionally qualified have become Portfolio Managers. They have managed the funds of clients on both discretionary and non-discretionary basis. It was found that many of them, including Mutual Funds have guaranteed a minimum return or capital appreciation and adopted all kinds of incentives which are now prohibited by SEBI. They resorted to speculative over trading and insider trading, discounts, etc., to achieve their targeted returns to the clients, which are also prohibited by SEBI. The SEBI has then imposed stricter rules, which included their registration, a code of conduct and minimum infrastructure, experience and expertise etc. It is no longer possible for any unemployed youth, or retired person or self-styled consultant to engage in Portfolio Management without the SEBI's license. The guidelines of SEBI are in the direction of making Portfolio Management a responsible professional service to be rendered by experts in the field.

Basically, Portfolio Management involves

- a. A proper investment decision-making of what to buy and sell;
- b. Proper money management in terms of investment in a basket of assets so as to satisfy the asset preferences of investors;
- c. Reduce the risk and increase returns.

One basic assumption of portfolio theory is that as an investor you want to maximize the returns from your investments for a given level of risk. To adequately deal with such an assumption, certain ground rules must be laid. First, your portfolio should include all of your assets and liabilities, not only your stocks or even your marketable securities but also such items as your car, house, and less-marketable investments, such as coins, stamps, art, antiques, and furniture. The full spectrum of investments must be considered because the returns from all these investments interact, and this relationship between the returns for assets in the portfolio is important. Hence, a good portfolio is not simply a collection of individually good investments.

## 17.2 Investment Strategy

Objectives of Investors: The return on equity investments in the capital market particularly if proper investment strategy is adopted would satisfy the above objectives and the real returns

### Returns

The expected return of a portfolio depends on the expected return of each of the security contained in the portfolio, portfolio's expected holding-period value-relative is simply a weighted average of the expected value-relative of its component securities, using current market values as weights. Since portfolios expected return is a weighted average of the expected returns of its securities, the contribution of each security to the portfolio's expected returns depends on its expected returns and its, proportionate share of the initial portfolio's market value would be higher than any other saving instruments. It is in this context, the art and science of investment and of Portfolio Management became the sine-qua-none of success.

All investments involve risk taking. However, some risk-free investments are available like bank deposits or P.CO. Deposits whose returns are called risk free returns of about 5-12%. So, the returns on more risky investments are higher than that, having risk premium. Risk is variability of return and uncertainty of payment of interest and repayment of principal. Risk is measured by standard deviation of the returns over the mean for a given period. Risk varies directly with return. The higher the risk taken, the higher is the return, under normal market conditions.

An investor can sometimes reduce portfolio risk by adding another security with greater individual risk than any other security in the portfolio. This result occurs because risk depends greatly on the covariance among returns of individual securities. Although Indian markets are imperfect and are developing, all the basic principle and theory of portfolio management would apply.

### Risk

The probability of loss is the essence of risk. A useful measure of risk takes into account both the probability of various possible "bad" outcomes and their associated magnitudes. Instead of measuring the probability of a number of different possible outcomes, the measure of risk should somehow estimate the extent to which the actual outcome is likely to diverge from the expected.

Two measures used for this purpose are the mean absolute deviation and the standard deviation. Before the average absolute deviation can be calculated, first the expected return is determined; Next, each possible outcome is analyzed to determine the amount by which the value deviated from the expected amount. These figures of the table include both positive and negative values. To assess the risk the signs of deviations can simply be ignored.

### Risk and Beta

Risk is of two components - systematic market related risk and unsystematic risk or company specific risk. The former cannot be eliminated but managed with the help of Beta (b), which is explained as follows:

$$b = \frac{\% \text{ age change of Scrip return}}{\% \text{ age change of Market return}}$$

If  $b = 1$ , the risk, of the company is the same as that of the market and if  $b > 1$ , the company's risk is more than the market risk. If  $b < 1$ , the reverse is the position. "

Specific Risk: If risk is company specific risk it can be reduced by diversification into different industries and companies of different types and nature and whose covariance's are different and whose performance are disparate.

### **17.3 Modern Portfolio Theory (MPT):**

This postulates that public generally are risk averse. In a perfect market, information is free and quickly absorbed by the market. Given the return, risk can be reduced by diversification of investment into a number of Scrips. Each Scrip has its own risk profile. The risks of any two Scrips are different from the risk of a group of two companies together. Thus, if the risk of Reliance (b) is said 1.90 and that of Dr. Beck is 0.70, the total of these two units is 1.30 as the average; But the actual T? may be less at say 1.00, reason being that the covariance of these two may be zero or negative (less than 1).

### **17.4 CAPM & SML (Capital Asset Pricing Model and Security Market Line)**

CAPM postulates that in a perfect market, where shares are correctly priced, every security will give ex return commensurate with its risk, "b" is a measure of the risk. The market risk is different from the risks of individual Scrips comprising the market. CML relates to the total risk of the market. But SML refers to the risk, which is un diversifiable market related risk. Total risk is measured by the standard deviation, while the un diversifiable risk is measured by Beta. CML, is Capital Market Line and SML is Security Market Line.

Risk premium of portfolio is the excess of the expected portfolio return over the risk-free return. Similar is the definition in respect of risk premium of the market, namely, expected Market Return minus Risk Free Return. CML passes through the risk-free rate, which represents the true time value of money or the reward for waiting by savers.

In portfolio management and investment decision-making, time element and time value of money are very relevant. Savings are automatic or induced. If induced, it requires a return enough to induce them to part with liquidity. Thus, savings and liquidity will be parted by the investors if only their time preference is satisfied by proper return.

#### **Why time preference? Why savers prefer today's return to tomorrows return?**

"A bird in hand is worth two in the bush", as the adage goes.

More money is to be received after a year, if he has to lend to the user of funds today. He forgoes consumption which has to be compensated.

Money lent today can produce something more than before and hence present money is more valuable than money tomorrow. This premium is needed for waiting.

Money is losing in value due to rise in prices. Hence, moneylenders lose and borrowers gain in times of inflation. Premium given is to compensate the lenders against loss due to fall in value of money.

#### **Compounding**

Future Value Factor (FVF) is  $(1 + r)^n$  is the rate of interest required and (n) is the period of years of waiting.

$F_n = P (1 + r)^n$ , or Future Value = Present Value x (Future Value Factor)

So, the return required by savers is related to the waiting period, loss of consumption at present, or liquidity and risk of loss of money or variance of returns.

#### **Discounting**

If the future flow of money is known as  $C_1, C_2, C_3$ , etc. What is the present value of them and how much is he prepared to pay for them. If he deposits today Rs. 100 he gets Rs. 110 at the end of 1 year and Rs, 121 at the end of 2 years, the interest rate is 10%. This process of finding the present value for future money flows is called discounting. Present value of future amounts is:

The multiplier is called PVF or Present Value Factor.

We should know the amounts of cash flows, ( $F_n$ ) number of years ( $n$ ) are the required rate of return ( $r$ ).

### **Perpetuity**

When we receive a fixed sum of money every year upto infinity, it is called perpetuity. Suppose we want to receive Rs. 100 every year for infinity and interest rate is 10%, we have to deposit Rs. 1,000 and the equation is  $PV = \frac{F}{r}$  where PV is present value of perpetuity, fixed periodic cash flow and  $r$  is rate of interests.

### **Annuity**

Annuity is a constant cash flow for a finite time period of say 5 years ( $n$ ). Examples of annuity are found in the case of lease rentals, loan repayments, Recurring deposits, etc. More detailed\* discussion is given on time element in a separate chapter.

### **Application to Portfolio Management**

Portfolio Management involves time element and time horizon. The present value of future returns / cash flows by discounting is useful for share valuation and bond valuation. The investment strategy in portfolio construction should have a time horizon, say 3 to 5 years, to produce the desired results of say 20-30% return per annum.

Portfolio Management also take into account tax benefits and investment incentives. As the returns are taken by investors net of tax payments, and there is always an element of inflation, returns net of taxation and inflation are more relevant to tax paying investors. These are called net real rates of returns, which should be more than other returns. They should encompass risk free return plus a reasonable risk premium, depending upon the risk taken, on the instruments/ assets invested.

### **Portfolio Construction, Revision and Evaluation**

Portfolio Manager has to use all the tools of research like fundamental analysis and technical analysis in addition to Risk'

Return analysis to decide on the investment, buying and selling etc. After the design of the Portfolio Strategy, the construction and allocation of funds will lead to the building up of the portfolio. Thereafter the portfolio thus built requires a constant review and revision with the result that operations on it are a continuous process. This is also called Monitoring. Finally, once in a quarter or half year, the portfolio performance is evaluated, for its success by comparing the actual achievements with the targets fixed. This throws light on the efficiency of the investment strategy of Portfolio Manager and helps the revision of portfolio.

### **MPT and Dominance Concept**

The Modern Portfolio Theory (MPT) is based on assumptions of free and perfect information flow and the notion of dominance. This means that if the market is able to absorb the information, fully and efficiently, price reflects the risks involved given the same return, the investor can choose the scrips with the lowest possible risk. This is possible by diversification into a number of  $c$  companies of say 10 to 15, which have diverse characteristics of risk. Thus, when any two Scrips behave differently to given changes in the economy and industry and when the co-efficient of correlation between them is less than 1, such scrips can be joined in a portfolio so as to reduce the combined risk of the portfolio.

The notion of dominance tells us that no investor should invest in one company alone and if there are two or more companies with the same risk, then he has to choose the one with higher return and if both have the same return, he has to choose the One with lower risk. The investor can reduce the risk by distributing his funds in a diverse variety of companies with varying risks and returns which do not have much auto correlation. Thus, the investor has not only to make proper investment decision of what to buy and when to buy, but has a proper investment strategy through diversification and choice of a proper 'B' for the scrips selected so that the total risk of portfolio is lowest possible.

### **Diversification Process**

The process of diversification has various phases involving investment into various classes of assets like equity, preference shares, CDs, NCDs, P.S.U. Bonds and Shares, Money market instruments like commercial paper, inter-corporate investments, deposits etc. Within each class of assets, there is further possibility of diversification into various industries, different companies etc. The proportion of funds invested into various classes of assets, instruments, industries and companies, would depend upon the objectives of investor, under portfolio management and his asset preferences, income and asset requirements. The subject is further elaborated in another chapter.

A portfolio with the objective of regular income would invest a proportion of funds in bonds, debentures and Fixed Deposits. For such investments, duration of the life of the bond/ debenture, quality of the asset as judged by the credit rating and the expected yield are the relevant variables.

Bond market is not well developed in India but debentures, partly or fully convertible into equity are in good demand both from individuals and Mutual Funds. The Portfolio Manager has to use his analytical power and discretion to choose the right debentures with the required duration, yield and quality. The duration and immunization of expected inflows of funds to the required quantum of funds have to be well planned by the Portfolio Manager. Research and high degree of analytical power in investment management and bond portfolio management are necessary.

The bond investments are thus equally challenging as equity investments and more so in respect of money market instruments. All these facts bring out clearly the needed analytical powers and expertise of Portfolio Manager. Bond market is discussed in a separate chapter elaborately.

#### **17.5 SEBI Guidelines for Portfolio Managers**

It will thus be seen that Portfolio Management is an art and requires high degree of expertise. The merchant banker has been authorized to do Portfolio Management Services, if they belong to Categories I and II as licensed by the SEBI. This classification of merchant bankers was dropped in 1996 and only the category I merchant bankers is allowed to operate in India. Others who want to provide such services should have a minimum net worth of Rs. 50 lakhs and expertise, as laid down or changed from time-to-time by the SEBI and would have to register with the SCBI. The SEBI have set out the guidelines in this regard, in which the relations of the client vis-a-vis the Portfolio Manager and the respective rights and duties of both have been set out. The code of conduct for Portfolio Managers has been laid down by the SEBI. The job of Portfolio Manager in managing the client's funds, either on discretionary or non-discretionary basis has thus become challenging and difficult due to the multitude of obligations laid on his shoulders by the SEBI, in respect of their operations, accounts, audit etc.

It is thus clear that Portfolio Management has become, a complex and responsible job which requires an in-depth training and expertise. It is in this context that the regulations of SEBI on Portfolio Management become necessary so that the minimum qualifications and experience are also ensured for those who are registered with SEBI. Nobody can do Portfolio Management without SEBI registration and license.

The SEBI has given permission to Merchant Bankers to do Portfolio Management. As per the guidelines of September, 1991 a separate category of Portfolio Managers is also licensed by SEBI for which guidelines were given in January 1993. A code of conduct was also laid down for this category, as is the case with all categories of capital market players and intermediates.

#### **Portfolio Management Service**

As per the SEBI norms, it refers to professional services rendered for management of Portfolio of others, namely, clients or customers with the help of experts in Investment Advisory Services. The latter involves the advice regarding the worth wholeness of any particular investment or advice of what to buy

and sell. Investment management on the other hand involves continuing relationship with client to manage investments with or without discretion for the client as per his requirements.

### **Who can be a Portfolio Manager?**

Only those who are registered and pay the required license fee are eligible to operate as Portfolio Managers. An application for this purpose should have necessary infrastructure with professionally qualified persons and with a minimum of two persons with experience in this business and a minimum net worth of Rs. 50 lakhs. The Certificate once granted is valid for three years. Fees payable for registration are Rs. 2.5 lakhs every year for two years and Rs. 1 lakh for the third year. From the fourth year onwards, renewal fees per annum are Rs. 75,000. These are subject to change by the SEBI.

The SEBI has imposed a number of obligations and a code of conduct on them, The Portfolio Manager should have a high standard of integrity, honesty and should not have been convicted of any economic offence or moral turpitude. He should not resort to rigging up of prices, insider trading or creating false markets, etc. Their books of accounts, are subject to inspection and audit by SEBI. The observance of the code of conduct and guidelines given by the SEBI are subject to inspection and penalties for violation are imposed. The Manager has to submit periodical returns and documents as may be required by the SEBI from time-to-time.

### **Method of Operation**

The Professional Portfolio Manager can be approached by any individual or organization with a minimum amount of investible funds of Rs. 1 lakh or Rs. 2 lakhs. If the Manager is willing to accept, him as his client, a contract is entered into for management of his funds either on discretionary basis or non-discretionary basis, specifying the objectives, risk to be tolerated, composition of assets / securities in the Portfolio and their relative proportion, fees payable and time period of management, as per the preference of the client etc. The client's data base is collected, namely, his available income and assets, his needs, his risk preferences, his choice for income or growth or both and host of personal details of the client so as to enable the Manager to design a Proper Investment Strategy for him.

#### **17.6 SEBI Norms**

SEBI has prohibited the Portfolio Manager to assume any risk on behalf of the client. Portfolio Manager cannot also assure any fixed return to the client. The investments made or advised by him are subject to risk which the client has to bear. The investment consultancy and management have to be charged at rates which are fixed at the beginning and transparent as per the contract. No sharing of profits or discounts or cash incentives to client are permitted.

The Portfolio Manager is prohibited to do lending and bills discounting as per SEBI norms. He cannot put the clients' funds in any investment, not permitted by the contract, entered into with the client. Normally investments can be made in both capital market and money market instruments.

Client's money has to be kept in a separate account with the public sector bank and cannot be mixed up with his own funds or investments. All the deals done for a client's account are to be entered in his name and Contract Notes; Bills etc. are all passed in his name. A separate ledger account is maintained for all purchase and sales on client's behalf, which should be done at the market price. Final settlement and termination of contract is as per the contract and for the time period agreed upon. Notice of termination of contract is also as per the contract. During the period of contract. Portfolio Manager is only acting on a contractual basis and on a fiduciary basis. No contract for less than a year is permitted by the SEBI.

#### **17.7 Self-Check Questions**

**Question 1:** What does the term "Diversification" refer to in the context of portfolio management?

- a. Concentrating investments in a single asset
- b. Spreading investments across different assets

- c. Selling all assets in a portfolio
- d. Maximizing risk in a portfolio

**Question 2:** Which of the following measures the systematic risk of a security in relation to the market?

- a. Standard Deviation
- b. Beta
- c. Alpha
- d. Sharpe Ratio

**Question 3:** What is the primary purpose of the Capital Market Line (CML) in portfolio management?

- a. Assessing the risk-return profile of a portfolio
- b. Evaluating market trends
- c. Analyzing individual stock performance
- d. Determining the liquidity of securities

**Question 4:** In Modern Portfolio Theory (MPT), what does the Efficient Frontier represent?

- a. The optimal portfolio with the highest return
- b. The set of portfolios that offer the highest return for a given level of risk
- c. Portfolios that are inefficient in terms of risk and return
- d. The minimum variance portfolio

**Question 5:** How does the Sharpe Ratio assist investors in evaluating the performance of a portfolio?

- a. Measures the risk-adjusted return of a portfolio
- b. Determines the total return of a portfolio
- c. Calculates the market risk of a portfolio
- d. Evaluates the liquidity of portfolio assets

### 17.8 Short Questions

1. What is the purpose of the Modern Portfolio Theory (MPT) Efficient Frontier?
2. In portfolio management, what does the term "asset allocation" refer to?
3. How does the risk-free rate contribute to portfolio optimization?
4. What role does the correlation coefficient play in constructing a diversified portfolio?

### 17.9 Long Questions

1. What is the primary objective of diversification in portfolio management?
2. How does the Sharpe Ratio assess the risk-adjusted performance of a portfolio?
3. What does the Capital Market Line (CML) depict in portfolio theory?
4. How does the concept of "beta" relate to assessing risk in a portfolio?

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### 17.11 Self-Check Questions Answers Key

1. b. Spreading investments across different assets
2. b. Beta
3. a. Assessing the risk-return profile of a portfolio
4. b. The set of portfolios that offer the highest return for a given level of risk
5. a. Measures the risk-adjusted return of a portfolio



### **MARKOWITZ PORTFOLIO THEORY**

#### **STRUCTURE**

- 18.1 Introduction
- 18.2 Assumption of Markowitz Theory
- 18.3 Markowitz Diversification
- 18.4 Types Of Risk
- 18.5 Summary
- 18.6 Self-Check Questions
- 18.7 Short Questions
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- 18.10 Answers to Self-Check Questions

#### **18.1 Introduction**

Marry M. Markowitz is credited with introducing new concepts of risk measurement and their application to the selection of portfolios. He started with the idea of risk aversion' of average investors and their desire to maximize the expected return with the least risk. Markowitz model is thus a theoretical framework for analysis of risk and return and their inter-relationships. He used the statistical analysis for measurement of risk and mathematical programming for selection of assets in a portfolio in an efficient manner. His framework led to the concept of efficient portfolios. A efficient portfolio is expected to yield the highest return for a given level of risk or lowest risk for a given level of return.

Markowitz generated a number of portfolios within a given amount of money or wealth and given preferences. of investors for risk and return. Individuals vary widely in their risk tolerance and asset preferences. Their means, expenditures and investment requirements vary from individual to individual. Given the preferences, the portfolio selection is not a simple choice of anyone security or securities, but a right combination of securities. Markowitz emphasized that quality of a portfolio will be different from the quality of individual assets within it. Thus, the combined risk of two assets taken separately is not the same risk of two assets together. Thus, two securities of Infosys do not have the same risk as one security of Infosys and one of Reliance.

Risk and Reward are two aspects of investment considered by investors. The expected return may vary depending on the assumptions. Risk index is measured by the variance or the distribution around the mean, its range etc., which are in statistical terms called variance and covariance. The qualification of risk and the need for optimization of return with lowest risk are the contributions of Markowitz. This led to what is called the Modern Portfolio Theory, which emphasizes the tradeoff between risk and return. If the investor wants a higher return, he has to take higher risk. But he prefers a high return but a low risk and hence the need for a trade off.

A portfolio of assets involves the selection of securities. A combination of assets or securities is called a portfolio. Each individual investor puts his wealth in a combination of assets depending on his wealth, income and his preferences. The traditional theory of portfolio postulates that selection of assets should be based on lowest risk, as measured by its standard deviation from the mean of expected returns.

The greater the variability of returns, the greater is the risk. Thus, the investor chooses assets, with the lowest variability of returns. Taking the return as the appreciation in the share price, if TELCO shares price varies from Rs. 338 to Rs. 580 (with variability of 72%) and Colgate from Rs. 218 to Rs. 315 (with a variability of 44%) during a time period, the investor chooses the Colgate as a less risky share.

As against this Traditional Theory that standard deviation measures the variability of return and risk is indicated by the variability, and that the choice depends on the securities with lower variability, the modern Portfolio Theory emphasizes the need for maximization of returns through a combination of securities, whose total variability is lower. The risk of each security is different from that of others and by a proper combination of securities, called diversification, one can arrive at a combination w/herein the risk of one is offset partly or fully by that of the other.

In other words, the variability of each security and covariance for their returns reflected through their inter-relationships should be taken into account. Thus, as per the Modern Portfolio Theory, expected returns, the variance of these returns and covariance of the returns of the securities within the portfolio are to be considered for the choice of a portfolio. A portfolio is said to be efficient, if it is expected to yield the highest return possible for the lowest risk or a given level of risk. A set of efficient portfolios can be generated by using the above process of combining various securities whose combined risk is lowest for a given level of return for the same amount of investment, that the investor is capable of. The theory of Markowitz, as stated above is based on a number of assumptions.

### 18.2 Assumption s of Markowitz Theory

The Modern Portfolio Theory of Markowitz is based on the following assumptions:

- Investors are rational and behave in a manner as to maximize their, utility with a given level of income or money.
- Investors have free access to fair and correct information on the returns and risk.
- The markets are efficient and absorb the information quickly and perfectly.
- Investors are risk averse and try to minimized the risk and maximize return.
- Investors base decisions on expected returns and variance or standard deviation of these returns from the mean.
- Investors prefer higher returns to lower returns for a given level of risk.
- A portfolio of assets under the above assumptions for a given level of risk.

Other assets or portfolio of assets offers a higher expected return with the same or lower risk or lower risk with the same or higher expected return. Diversification of securities is one method by which the above objectives can be secured. The unsystematic and company related risk can be secured. The unsystematic and company related risk can be reduced by diversification into various securities and assets whose variability is different and offsetting or put in different words which are negatively correlated or not correlated at all.

### 18.3 Markowitz Diversification

Markowitz postulated that diversification should not only aim at reducing the risk of a security by reducing its variability or standard deviation, but by reducing the covariance or interactive risk of two or more securities in a portfolio. As by combination of different securities, it is theoretically possible to have a range of risk varying from zero to infinity,

Markowitz theory of portfolio diversification attaches importance to standard deviation, to reduce it to *zero*, if possible, covariance to have as much as possible negative interactive effect among the

securities within the portfolio and coefficient of correlation to have - 1 (negative) so that the overall risk, of the portfolio as a whole is nil or negligible. Then the securities have to be combined in a manner that standard deviation is zero.

**Parameters of Markowitz Diversification**

Based on his research, Markowitz has set out guidelines for diversification on the basis of the attitude of investors towards risk and return and on a proper quantification of risk. The investments have different types of risk characteristics, some caused systematic and market related risks and the other called unsystematic or company related risks. Markowitz diversification involves, I proper number of securities, not too few or not too many which have no correlation. Or negative correlation. The proper choice of companies, securities, or assets whose return are not correlated. and whose risks are mutually offsetting to reduce the overall risk.

For building up the efficient set of portfolios, as laid down by Markowitz, we need to look into these important parameters.

- Expected return.
- Variability of returns as measured by standard deviation from the mean.
- Covariance or variance of one asset return to other asset returns.

In general, the higher the expected return, the lower is the standard deviation or variance and lower is the correlation the better will be the security for investor choice. Whatever is the risk of the individual securities in isolation, the total risk of the portfolio of all securities may be lower, if the covariance; of their returns is negative or negligible.

**Criteria of Dominance**

Dominance refers to the superiority of One portfolio Over the other. A Set can dominate over the other, if with the same return, the risk is lower or with the same risk, the return is higher. Dominance principle involves the tradeoff between risk and return.

For two security portfolios, minimize the portfolio risk by the equation

$$\sigma_p = W_a \sigma_a^2 + W_b \sigma_b^2 + 2(W_a W_b \sigma_a \sigma_b \rho_{ab})$$

$$E(R_p) = W_a E(R_a) + W_b E(R_b)$$

R refers to returns and E (Rp) is the expected returns. Op is the standard deviation; W refers to the proportion invested in each security Oa Ob are the standard deviation of a and b securities and Oab is the covariance or interrelations of the security returns.

The above concepts arc used in the calculation of expected returns, mean standard deviation as a measure of risk and covariance as a measure of inter-relations of one security return with another.

Markowitz Model Risk is discussed here in terms of a portfolio of assets.

As referred to earlier, any investment risk is the variability of return on a stock, assets or a portfolio. It is measured by standard deviation of the return over the Mean for a number of observations.

**18.4 Types of Risk**

**Summary**

<b>I</b>	<b>II</b>
Systematic	Unsystematic

(Market)

Examples

Interest Rate Risk

Market Risk

Inflation Risk

Demand and Government Policy

International Factors

(Company Risk)

Examples

Labour Troubles

Liquidity Problems

Raw Material Risks

Financial Risks

Management Problems

$$\text{Standard Deviation} = \sqrt{\frac{\sum d^2}{5}} = \sqrt{\frac{1350}{5}} = 16.43$$

$$\text{Scrip Deviation} = 16.43$$

$$\text{Market Deviation} = 10.40$$

$$\text{Total Risk} = \frac{16.43}{10.40} = 1.58$$

Mean.

### Measurement of Risk

#### (Example)

Standard deviation to be calculated: Average in Mean

Observations: 10% 5% 20% 35% 10% 10% will be their

$$\text{Cov } x \text{ } Y = \frac{1}{N} \sum_{t=1}^N (R_x - R_x)(R_y - R_y) \quad \text{Portfolio Risk}$$

When two or more securities or assets are combined in a portfolio their covariance or interactive risk is to be considered. Thus, if the returns on two assets move together, their covariance is positive and the risk is more on such portfolio. If on the other hand, the returns move independently or in opposite directions, the covariance is negative and the risk in total will be lower.

$$Y \times Y = \frac{\text{Cov } xy}{O_x \times O_y} \quad \text{Mathematically the covariance is defined as}$$

Where  $R_x$  is return on security x,  $R_y$  return security Y, and  $R_x$  and  $R_y$  are expected returnson them respectively and N is the number of observations.

The coefficient of correlation is another measure designed to indicate the similarity ordissimilarity in the behaviour of two variables. We define the coefficient of correlation of x and y as

Where Cov x y is the covariance between x and y and Ox is the standard deviation of x and Oy is the standard deviation of y.

Example:

The coefficient of correlation between two securities is - 1.0, it is perfect negative correlation. If it is + 1.0 it is perfect positive correlation. If the coefficient is '0' then the returns are said to be independent. To sum up, correlation between two securities depend (a) on covariance between them, and (b) the standard deviation of each.

In Markowitz Model, we need to have inputs of expected return, risks measured by standard deviation of return is and the covariance between the returns on assets considered. Covariance is a measure of the degree to which two variables "move together" relative to their individual mean values over time. In portfolio analysis, we usually are concerned with the covariance of rates of return rather than prices or some other variable A positive covariance means that the rates of return for two investments tend to move in the same direction relative to their individual means during the same time period. In contrast, a negative covariance indicates that the rates of return for two investments tend to move in different directions relative to their means during specified time intervals over time. The magnitude of the covariance depends on the variances of the individual return series, as well as on the relationship between the series.

Standard deviation for a portfolio of assets is a function of the weighted average of the individual variances (where the weights are squared), plus the weighted co Variances between all the assets in the portfolio. The standard deviation for a portfolio of assets encompasses not only the variances of the individual assets but also includes the covariances between pairs of individual assets in the portfolio. Further, it can be shown that, in a portfolio with a large number of securities, this formula reduces to the sum of the weighted co variances.

	Return	Expected Return	Variance
I Stock x	7	9	-2
	13	9	+4
		Product	- 2 x 4 = - 8
II Stock x	11	9	+2
Stock y	5	9	- 4
		Product	- 8

Where, N = 2 The covariance equation is as follows :

$$\text{Cov} = \frac{1}{2} [(7-9) + (11-9) (5-9)]$$

$$= \frac{1}{2} (-8) + (08) ] = \frac{-16}{2} = - 8$$

**Combining Stocks with Different Returns and Risk:** The previous discussion indicated what happens when only the correlation coefficient (covariance) differs between the assets. We now consider two assets (or portfolios) with different expected rates of return and individual standard deviations.<sup>7</sup> We will show what happens when we vary the correlations between them. We will assume two assets with the following characteristics:

$$= -7(0.001225) + (0.0025) + (0.5)(0.0070)$$

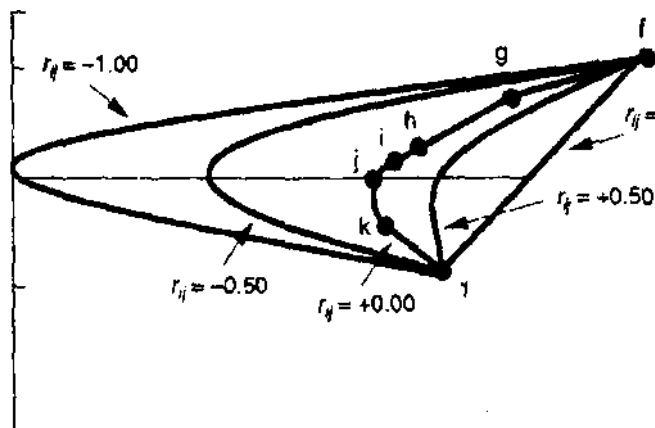
$$= \sqrt{0.007225} = 0.085$$

Again, with perfect positive correlation, the standard deviation of the portfolio is the weighted average of the standard deviations of the individual assets:

$$(0.5)(0.07) + (0.5)(0.10)$$

$$= 0.085$$

PORT FOLIO RISK-RETURN PLOTS FOR DIFFERENT WEIGHTS WHEN  $r_{1,2} = +1.00; +0.50; 0.00; -0.50; -1.00$



Asset	$E(R_i)$	$W_i$	$\sigma^2_i$	$\sigma_i$
1	.10	.50	.0049	.07
2	.20	.50	.0100	.10

The previous set of correlation coefficients gives a different set of covariances because the standard deviations are different. For example, the covariance in Case b where  $r_{1,2} = 0.50$  would be  $(0.50)(0.07)(0.10) = 0.0035$ .

Case	Correlation Coefficient	Covariance ( $R_1\sigma_1\sigma_2$ )
a	+1.00	.0070
b	+0.50	.0035
c	0.00	.0000
d	-0.50	-.0035
e	-1.00	-.0070

Because we are assuming the same weights in all cases (0.50 - 0.50), the expected return in every instance will be

$$E(R_{port}) = 0.50(0.10) + 0.50(0.20)$$

$$= 0.15$$

The standard deviation for Case a will be

$$\sigma_{port(a)} = \sqrt{(0.5)^2(0.07)^2 + (0.5)^2(0.10)^2 + 2(0.5)(0.5)(0.0070)}$$

### Efficient Frontier

If we examined different two-asset combinations and derived the curves assuming all the possible weights, we would have a graph like that in Exhibit. The envelope curve that contains the best of all these possible combinations is referred to as the efficient frontier. Specifically, the efficient frontier represents that set of portfolios that has the maximum rate of return for every given level of risk, or the minimum risk for every level of return. Every portfolio that lies on the efficient frontier has either a higher rate of return for equal risk or lower risk for an equal rate of return than some portfolio beneath the frontier. Because of the benefits of diversification among imperfectly corrected assets, we would expect the efficient frontier to be made up of portfolios of investments rather than individual securities

### 18.5 Summary

The basic Markowitz portfolio model derived the expected rate of return for a portfolio of assets and a measure of expected risk, which is the standard deviation of expected rate of return. Markowitz shows that the expected rate of return of a portfolio is the weighted average of the expected return for the individual investments in the portfolio. The standard deviation of a portfolio is a function not only of the standard deviations for the individual investments but also of the covariance between the rates of return for all the pairs of assets in the portfolio. In a large portfolio, these covariances are the important factors.

Different weights or amounts of a portfolio held in various assets yield a curve of potential combinations. Correlation coefficients among assets are the critical factor you must consider when selecting investments because you can maintain your rate of return while reducing the risk level of your portfolio by combining assets or portfolios that have low positive or negative correlation.

Assuming numerous assets and a multitude of combination curves, the efficient frontier is the envelope curve that encompasses all of the best combinations. It defines the set of portfolios that has the highest expected return for each given level of risk or the minimum risk for each given level of return. From this set of dominant portfolios you select the one that lies at the point of tangency between the efficient frontier and your highest utility curve. Because risk-return utility functions differ among investors, your point of tangency and, therefore, your portfolio choice will probably differ from those of other investors.

At this point we understand that an optimum portfolio is a combination of investments, each having desirable individual risk-return characteristics that also fit together based on their correlations.

### 18.6 Self-Check Questions

- Question 1:** According to Markowitz Portfolio Theory, what is the primary goal of portfolio diversification?
  - Maximize total return
  - Minimize risk
  - Maximize individual asset returns
  - Minimize total return
- Question 2:** In Markowitz Portfolio Theory, what does the Efficient Frontier represent?
  - The set of portfolios with the highest returns
  - The set of portfolios with the lowest risk
  - The optimal combination of risk and return
  - Portfolios with the maximum number of assets
- Question 3:** How does Markowitz define risk in the context of portfolio management?
  - Volatility of individual assets
  - Standard deviation of portfolio returns
  - Variability of asset returns in relation to each other
  - Total variance of asset returns
- Question 4:** According to Markowitz Portfolio Theory, what is the impact of adding an asset to a diversified portfolio?

- a. Always increases the overall risk
  - b. Always decreases the overall risk
  - c. Depends on the correlation with existing assets
  - d. Has no impact on the overall risk
5. **Question 5:** How does the concept of correlation among assets contribute to portfolio diversification according to Markowitz?
- a. Higher correlation increases diversification benefits
  - b. Lower correlation increases diversification benefits
  - c. Correlation has no impact on diversification benefits
  - d. Correlation increases total portfolio risk

#### 18.7 Short Questions

1. What is the central objective of Markowitz Portfolio Theory?
2. How does Markowitz define risk in the context of portfolio management?
3. What is the Efficient Frontier in Markowitz Portfolio Theory?
4. How does diversification contribute to risk reduction according to Markowitz?

#### 18.8 Long Questions

1. What role does the covariance between assets play in portfolio optimization?
2. In Markowitz Portfolio Theory, what does the term "risk-free asset" refer to?
3. How does the concept of correlation impact portfolio diversification?
4. According to Markowitz, what is the significance of the Capital Market Line in portfolio construction?

#### 18.9 References

- Fischer, D. E., & Jordan, R. J. (2010). "Investment Management: Security Analysis and Portfolio Management." Prentice-Hall India.
- Pandian, Punithavathy (2017). "Security Analysis and Portfolio Management." Vikas Publishing House.

#### 18.10 Self-Check Questions Answers Key

1. b. Minimize risk
2. c. The optimal combination of risk and return
3. c. Variability of asset returns in relation to each other
4. c. Depends on the correlation with existing assets
5. b. Lower correlation increases diversification benefits



**CAPITAL ASSET PRICING MODEL(CAPM)**

**STRUCTURE**

- 19.1 Introduction
- 19.2 CML (Capital Market Line)
- 19.3 SML (Security Market Line)
- 19.4 CAPM Analysis
- 19.5 Market Model
- 19.6 Capital Assets Pricing Model (CAPM)
- 19.7 Why Diversification
- 19.8 Self-Check Questions
- 19.9 Short Questions
- 19.10 Long Questions
- 19.11 References
- 19.12 Answer to Self-Check Questions

**19.1 Introduction**

The CAPM was developed to explain how risky securities are priced in market and this was attributed to experts like Sharpe and Lintner. Markowitz theory being more theoretical, CAPM aims at a more practical approach to stock valuation.

It is no doubt based on the mean-variance approach to risk for assessment of investment as developed by Markowitz. It explains the behavioural pattern of investors in building up portfolios.

**CAPM-Assumptions**

The CAPM is based on certain assumptions some of which are common to CAPM and MPT. CAPM is developed as part of MPT (Modern portfolio Theory). The assumptions are first set out below:

- 1.** The investor aims at maximizing the utility of his wealth, rather than the wealth or rerun. The difference between them is that individual preferences are taken into account in the utility concept. While some have preference for larger risk who will have increasing marginal Utility for wealth, for others, with less preference for risk the incremental wealth will be less attractive if it is attached with more risk.  
Thus, the preference of investors for risk return will be taken into account in this model.
- 2.** Investors have similar expectations of Risk and Return. Without these consensuses, standards, the estimates of mean and variance may lead to different forecasts with the result that the portfolio of each will be different from that of the others. There will be innumerable efficient frontiers, each dependent on the set of preferences of individuals for risk and return. If investors do not have similar expectations there will be no homogeneity in their conception and no single efficient frontier line will apply to all.  
This in turn will imply that the price of an asset, which is the best estimate of the present value of future returns will be different for different investors. This

assumption is therefore unrealistic for application in the real world.

3. Investors make investment decision on a rational basis, depending on their 'assessment of risk and return. Risk is measured by two factors, mean and variance. In the CAPM we assume that rational investors diversify away their diversifiable risk, namely, unsystematic risk and only systematic risk remains which varies with the Beta of the security. While some use the beta only, as a measure of risk. others use both Beta and variance of returns (total Risk) as the sources of reward or expected return. As these perceptions of risk and reward vary from individual to individual, under CAPM we get a series of efficient frontier lines while in the case of MPT, there will be a single efficient frontier line as the conception of risk and return expectation is assumed to be homogeneous in the latter.
4. Investors will have free access to all available information at no cost and no loss of time. If the information is not the same for all, no common efficient frontier line can be drawn. Besides even if the information is not available at the same time different conclusions can be drawn regarding expected return and risk and no single price of the capital asset can be conceived.
5. Investors should have identical time horizons which again is highly unrealistic. Investors have different time horizons and their estimates of stock value will therefore differ, even as the estimated earnings are the same per year. Continuous time models, are sometimes used to get over the above difficulty or again one - approximate a single period model as a proxy to multi period model on the assumption that returns are the same over time and time has no relevance to expected returns and that expected returns are again independent of the past and current information.

While, the above assumptions are common to both CAPM and MPT, some assumptions are specific to CAPM. Thus, there is a risk-free asset, which gives risk free return. Investors can borrow and lend unlimited amounts at the same price. Thus, assumption of risk-free asset transforms the curved 'efficient frontier line to a linear one. Risk can be reduced by adding a risk-free asset, or borrowing at the risk-free rate.

Besides, it is also necessary to assume in CAPM that total asset quantity is fixed and all assets are marketable and divisible. This assumption implies that the liquidity requirement of investors is ignored and there will be no new issues, which are both unrealistic.

After the brief review of the above assumptions, we can summarize the requirements for CAPM as follows:

Risk is measured by variance of expected returns. There are two components of Risk - systematic (non-diversifiable) and unsystematic (diversifiable). For diversifiable risk, the investor makes a proper diversification to reduce the risk and for the non-diversifiable portion, he uses the relevant Beta measure to adjust to his requirement or preferences. Due to the possibility of risk-free asset and lending and borrowing at the free rate, the investor has two components of the portfolio - risk free assets and the risky market assets. His total return is summation from the above two components.

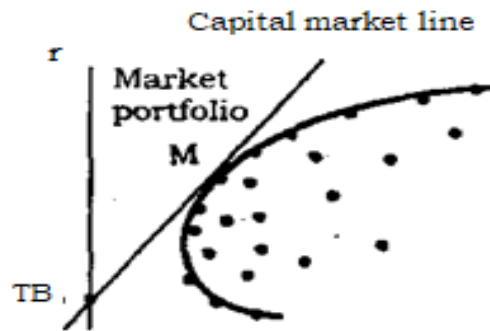
Under CAPM, the equilibrium situation arises when all frictions, like taxes, divisibility transaction costs and different risk-free borrowing and lending rates are assumed away. Equilibrium will be brought about by changes in prices due to changes in demand and supply.

## **19.2 CML (Capital Market Line)**

Figure below depicts the capital market line with risk less rate of return. Point P is the riskless interest rate. Preferred investments are plotted along the line PMZ, by combination of both risky assets and risk-free asset along with the borrowing and lending.

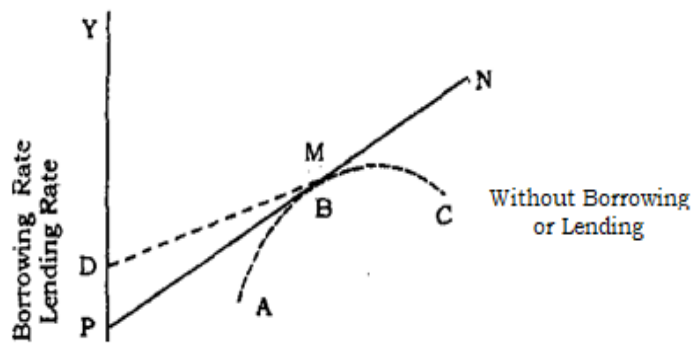
The slope of the PMZ is the measure of the reward for Risk taking. P is the risk-free return,  $E_m - T$  is the measure of the risk premium - a return for the risk taking. The reward for waiting is the risk less interest rate, OP, and second reward is the return per unit of risk borne measured by the slope 'a' of the PMZ line. The internal rate can be considered as price of time and the slope of capital market line as price of the risk.

### Market portfolio and Capital market line



If the borrowing and lending rates are different, then OQ becomes the borrowing rate and QMN is with the borrowing rate of OQ and PMN is with the lending rate of OP and ABC is the efficiency frontier line without borrowing and lending. The curved line will become linear, if once the riskless asset of borrowing and lending at fixed riskless rate is introduced.

**OP will be the lending rate, as shown below. The efficient frontier line with differential borrowing and lending rates will be as shown below:**



The CML as described above reflects the relationship of total risk and expected return. Total risk includes both systematic and unsystematic risks. It may also include the risk-free assets to reduce the total risk. The CAPM has two components of the capital market return, which are reward for waiting or riskless return, and the reward per unit of risk borne as measured by the slope of the CML line.

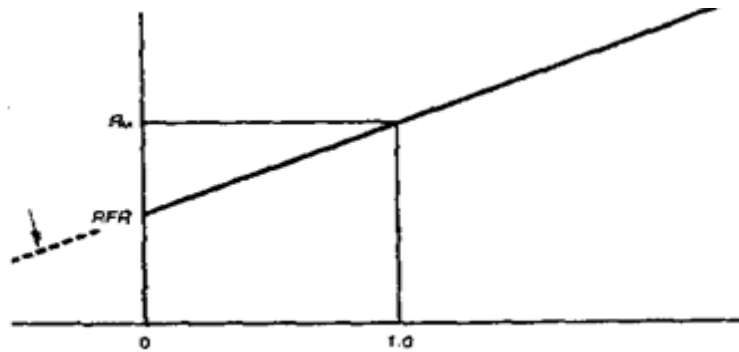
The investors will have their choice of efficient portfolio somewhere along the line of CML, as all efficient portfolios would be on it. Those which are less efficient will be below the line PMN, in the chart above. The risk-free rate can be thought the price of time and the slope of the capital market line as the Price of Risk.

### 19.3 Security Market Line (SML)

Unlike the C.ML, which considers the total risk as a measure of variability of returns, SML takes into account, only the systematic risk, which is market related and is not possible to reduce or eliminate by Diversification. Beta is the measure of risk of a security relative to the whole market, and is used in the SML.

Since the unsystematic risk is already taken care of by diversification in the construction of an efficient portfolio, it is desirable to develop an alternative to CML which will use Beta as the independent variable and can be adopted for use in portfolio management and in purchase of individual securities. Such a line is called Security Market Line, which depicts a linear relationship between expected return and the systematic risk.

The SML curve drawn below shows a positive slope, indicating that the return and risk are positively related. The higher the risk the higher is the return. The Beta of Market portfolio, as represented by the BSE or NSE index is always one. But the company scrip can have Betas higher than 1 or lower than 1. Those with Betas less than 1 are defensive securities and those with Betas above 1



are c.-  
idled  
aggres  
sive  
scrips.  
The  
graph  
below  
shows  
these

types of scrips and the relationship of Beta

to expected return.

**GRAPH OF SML WITH NORMALIZED SYSTEMATIC RISK**

SML is Security Market Line, OS is the risk-free return, OP is the return of the market, whose Beta is 1; those below Beta 1 are defensive and others are aggressive scrips in the market.

SML can be represented symbolically by an equation as  $R_i = R_f + B_i (R_m - R_f)$

$R_i$  is the return on the security,  $i$ ,

$R_f$  is Risk-free return

$R_m$  is Market return.

$B_i$  is Beta of Scrip  $i$  related to Market Risk

If  $R_f = 10$ ,  $R_m = 20$   $B_i = 1.5$ , which is riskier than the market average,

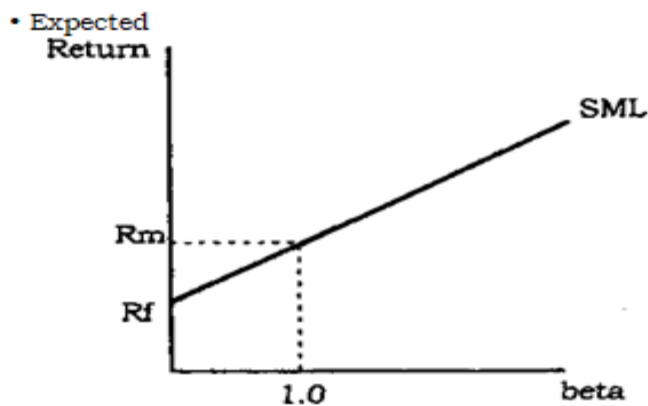
then

$$R_i = 10 + 1.5 (20 - 10)$$

$= 7.0 + 15 = 25.0\%$  which is higher than the market return Suppose the  $B_i$  is less risky than the market

at 0.75 then  $R_i = 10 + 0.75(20 - 10)$   
 $= 10 + 7.5 = 17.5\%$ , which is lower than the market return

From the above equation, we can estimate the expected return on a security. It is represented as something like a premium or discount on the market return and can be compared. It can be a return on a security as distinguished from a portfolio. If the security is correctly priced it will have  $R_i - R_f = 0$  and SML curve goes through the origin (see chart below)  $R_i - R_f$  measures the excess return which varies with the risk taken. Within the chart it is seen that  $R_m - R_f$  excess return if market Beta = 1. The security market line implies that the individual assets and portfolio should be on SML, if they are correctly priced. Beta values should then correctly represent the contribution to the risk of the security to the portfolio. All assets lying above the SML are undervalued and those below the SML are overvalued.



If we buy undervalued securities, the returns will be more and vice versa- It will thus be seen that SML curve assumes a critical importance in portfolio selection and individual investment decision.

#### 19.4 CAPM Analysis

The expected return of a portfolio in equilibrium is equal to risk free rate  $R_f$ , plus risk premium which is related to its Beta. Thus,  $R_p - R_f$  risk premium and this is equal to BPM  $(R_m - R_f) \times \beta$  where  $R_p$  is expected rate of return and  $R_f$  the risk-free return.

These symbols are the same as explained above. This leads us to the market model, which relates the expected excess return of the portfolio to the excess return of the market. This is an explanation of the risk premium which gives excess returns. The chart below presents the relation of  $E((R_m) - (R_f))$ , to the  $E((R_p) - (R_f))$  viz., in words, excess returns on a portfolio's excess risk over the market risk. This chart presents CAPM in a general form with expected excess market risk related to expected excess return.

Difference between estimated return and expected (required) return is sometimes referred to as a stock's alpha or its excess return. This alpha can be positive (the stock is undervalued) or negative (the stock is overvalued). If the alpha is zero, the stock is on the SML and is properly valued in line with its systematic risk.

#### 19.5 Market Model

Beta relates the portfolio premium to market risk premium. If Beta is one, they are the same. We have seen that the slope of SML curve is Beta. If we have a perfectly diversified portfolio in the CAPM, the error term disappears. If at the same time expected risk adjusted excess return of the portfolio is zero which is assured under Market Efficiency Theory, then the slope of the characteristic line is Beta of the portfolio. Thus, under condition of perfect markets, the slope of the Regression line is Beta and excess returns disappear

#### Uses and Limitations

In real world, investors get higher return for higher risk and they are more concerned with company related risks than with the market related risks, except in the case of trained investment analysts. Companies are found to use CAPM to determine the cost of equity for the firm, to estimate the required return for divisions or lines of business and to determine the hurdle rates for corporate investments and to evaluate the performance of investment Division in terms of costs and returns.

These hurdle rates of return are in general the required rates of return and the corporate assess the past performance of the costs and related returns for each of the Division. In the case of public utilities, the CA.PM can be used to estimate the costs and rates to be charged to cover the costs. The CAPM is used to regulate the public utilities from the point of view of costs.

Historical return and Betas are used to select the proper risk in investments in the portfolio's is used to select securities, construct portfolios and evaluate the performance of the portfolio. It is thus a useful tool for investment analysis and portfolio management.

The limitations of the theory are also pointed out by many critics. This theory is unrealistic for any average investor, who goes by the fundamental factors influencing the company, its earning, dividend and bonus record. Empirical tests of the Model have not proved very useful. The model is built ex-an\*Le factors while in reality the expectations of the future vary from person to person. Data and analysis is to be based on ex-post factors while anticipations of future risk and returns are ex-ante and both may not be related. The CAPM is in fact not testable exactly as the exact composition of the market is known and is used in testing. The empirical tests conducted by Richaj-d Roll and others were only tests on samples whether me proxy market portfolio was efficient or not. The use of surrogate and proxies has not proved the theory as really useful and practical.

CAPM theory is thus a nice theoretical exposition but in actual world, it does not conform to the real-world risk-return trends and empirical tests have not given unequivocal support to the theory, it is also found ms.t there - are many non-Beta factors influencing me returns. The calculation of Beta is itself of doubtful validity as me historical Betas may not reflect the future risks or returns. In the short-run in particular, projections on the basis of Betas on returns and risk have been found to be unreliable and results contrary to C'APM Theory were noticed. Thus, CAPM is a good theoretical tool but with its own limitations in practical applications.

### **19.6 Capital Asset Pricing Model**

The assumptions of CAPM are that the market is in equilibrium and the expected rate of return is equal to the required rate of return for a given level of risk, or Beta. CAPM presents a linear relationship between the required rate of return of a security and relates it to market related risk or Beta, which, cannot be avoided. The equation for the CAPM Theory is

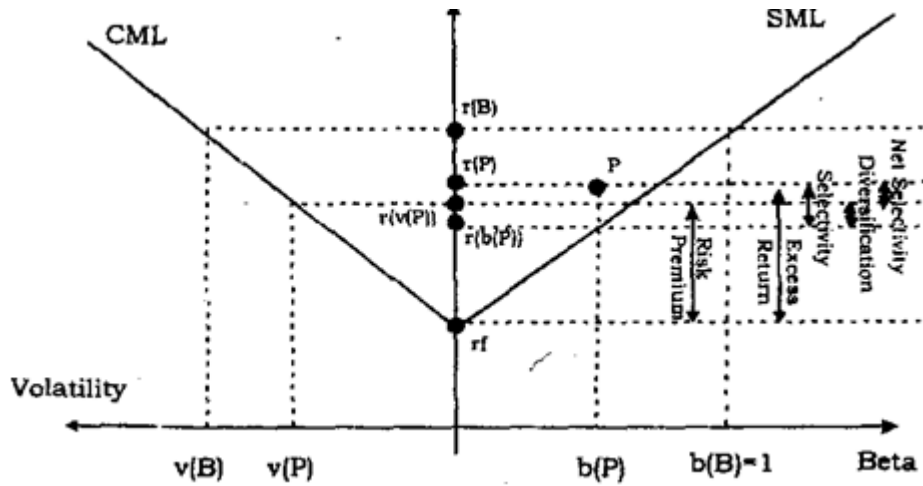
$$R_j = R_f + B_j (R_M - R_f)$$

$R_j$  is expected rate of return on security 'j' and  $R_f$  is risk free return.

$B_j$  is Beta coefficient - a risk measure for the non -diversifiable part of total Risk.  $R_m$  is return on Market Portfolio and  $R_M - R_f$  is the excess return for the extra risk,

#### **Limitation of CAPM**

It is not realistic in the real world. This assumes that all investors are risk averse and higher the risk, me higher is the return. Investors ignore the transactions cost information costs, brokerage" taxes etc., and make decisions on the basis of single period horizon. The investors are given a choice on the basis of risk-return characteristics of an investment and they can buy at the going rate in me market. There are many buyers and sellers and the market is competitive and free forces of supply and demand determine the prices.



CAPM establishes a measure of risk premium and is measured by  $B(RM - R_f)$ . Beta coefficient is the non-diversifiable risk of the asset, relative to the risk of the asset.

Suppose Cipla Company has a Beta equal to 1.5 and the risk free rate is say 6%. The required rate of return on the market (RM) is 15%. Then, adopting the above equation, we have

$$= 6 + 1.5(15 - 6)$$

$$= 6 + 13.5 = 19.5\%$$

If the market rate is 15% then the return on Cipla should be 19.5%, because the larger risk on Cipla than on the market.

SML Security Market Line

SML plots the relationship between the Required rate of return  $R$  and non-diversified risk, Beta, as expressed above in CAPM.

Example;

Market Expected Return = 12% Market Risk Premium  $(RM - R_f) = 7$  Risk free Return = 5  $(R_f)$   $RM - R_f = (12 - 5) = 7$  If security  $x$  has Beta of 1.20 Then  $R = R_f + B(RM - R_f)$

$$= 5 + 1.2(7)$$

$$= 5 + 8.4 = 13.4 \text{ (Aggressive Scrip)}$$

If the security has Beta as 0.80, then it is a defensive scrip.

$$\text{Thus } R = 5 + 0.3(7) = 5 + 5.6 = 10.6$$

The actual prices of securities may fall 'above or below, the SML.

When we estimate the expected return after a year, in the absence of historic data on returns and probabilities the following formula which is derived from the basic formula given above is useful.

$D_0(1+g)$

Expected return  $R_j$

$= P_0 + g$  Where,  $D_0 =$

last paid dividend  $P_0 =$

current market price

$g =$  Growth rate.

If the above return is higher than the equilibrium rate effecting the equilibrium price a position on the SML - both the stocks, above the SML and below the SML have undergone some changes: The expected rate: has to be equated to the required rate: of return, when the point of equilibrium is reached on the SML. Which the expected return is higher than the required rate: the demand for that security will

rise and the price: will also rise, bringing down its return to the equilibrium level. If the expected return is lower than the required return the demand will fall leading to a fall in its price: bringing it to the equilibrium level in the former case, the investors will buy securities and in the latter case, they will sell securities.

Thus, the CAPM is useful to provide insights for the finance Manager- to maximize the value of the firm. Following the principle of the higher the risk, the higher is the return, the finance Manager will keep the risk level at the optimum level in performing the investment function or financing function by keeping in mind the return that shareholder expects to take at a given level of risk at the company.

The Finance Manager has to keep in mind the expected returns of the shareholders and the risk/return he provides should be commensurate: with the risk. This risk is reflected in his investment and financing decisions. The SML provides a benchmark reflecting the equilibrium position in the relationship between the risk and return. The risk that is reflected in the non-diversification or systematic risk is that the company is exposed to in its operations, financing and investment decisions.

### **19.7 Why Diversification**

It is never prudent to put all one's eggs in one basket as it may lead to total ruin if the basket itself is broken or lost. The human behaviour is normally risk averse which means that for psychological reason, he distributes his assets in a variety of risk classes some in cash some in bank deposit, Insurance, Provident fund, pension fund etc. These are all examples of the normal human behaviour of diversifying the asset holdings to reduce risk, provided for contingency and take all precautions against total loss.

Thus, the average investor never puts all his savings in one form or in one security for self-production and for and for psychological reason.

Money kept idle or in some investments, which do not give adequate return, will be a loss to investor, as he loses the value of "money over time. By logic of common-sense investors try to satisfy most of their objectives of saving by putting money in various avenues and that means diversifications. The various objectives are income, capital appreciation safety, marketability, contingency, and liquidity and hedge against inflation and for future provision or larger incomes. His choice of investments will cater to this requirement, which lead to diversification of investments.

Even without the theoretical basis of covering or reducing the unsystematic diversifiable risk, the investor in the traditional Theory used to adopt some methods of Diversification.

### **Markowitz Diversification**

Before discussing the Markowitz diversification what the researches of investors and investment analysts have found is to be set out briefly. Firstly they found that putting all eggs in one basket is bad and most risky. Secondly, there should be adequate diversification of investment into various securities as that will spread the risk and reduce it; if the number of them say 10 to 15 it is adequate to enjoy the economies of time, scale of operations and expertise utilized by the investors in his analysis.

Reference already made to Naive diversification, which is a spread of investments into many securities but will not reduce the risk, like buying ten securities all in the shipping industry which is risky industry in itself. Besides some researchers have found that there is an optimization process for diversification to reduce the unsystematic or company related risk by choosing such companies which are not closely related or not related by the same family group in the same industry group. This optimization process also leads to an investment in 10-15 companies well chosen for differences in their characteristics, nature of the product market, pattern of production etc.

### **19.8 Self-Check Questions**

1. **Question 1:** What does the CAPM (Capital Asset Pricing Model) primarily help investors determine?
  - a. Market volatility
  - b. Expected return on an investment



- c. Historical stock prices
- d. Inflation rates

2. **Question 2:** In the CAPM formula, what does the beta coefficient represent?

- a. Risk-free rate
- b. Expected market return
- c. Systematic risk of an asset
- d. Total variance of a security

3. **Question 3:** According to the CAPM, how is the expected return on an investment related to its beta?

- a. Positively correlated
- b. Inversely correlated
- c. No correlation
- d. Correlation depends on market conditions

4. **Question 4:** In the CAPM equation, what does the risk-free rate represent?

- a. The rate of return on the market portfolio
- b. The minimum required rate of return
- c. The historical average return on the asset
- d. The rate of inflation

5. **Question 5:** How does the Security Market Line (SML) relate to the CAPM?

- a. It represents the relationship between expected return and beta.
- b. It plots the historical prices of securities.
- c. It shows the correlation between market indices.
- d. It represents the total risk of a security.

### **19.9 Short Questions**

1. What does CAPM stand for in finance and investment analysis?
2. How does the Capital Asset Pricing Model (CAPM) calculate the expected return on an asset?
3. What is the role of beta in the CAPM formula?
4. According to CAPM, what does the risk-free rate represent?

### **19.10 Long Questions**

1. How does the Security Market Line (SML) relate to the CAPM?
2. In CAPM, what does a beta of 1 indicate about the asset's risk?
3. How does CAPM account for the systematic risk of an asset?
4. What is the primary assumption regarding investor behavior in CAPM?

### **19.11 References**

1. Pandian, Punithavathy (2017). "Security Analysis and Portfolio Management." Vikas Publishing House.
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### **19.12 Answer to Self-Check Questions Answers**

1. b. Expected return on an investment
2. c. Systematic risk of an asset
3. a. Positively correlated
4. b. The minimum required rate of return
5. a. It represents the relationship between expected return and beta

**ARBITRAGE PRICING THEORY**

**STRUCTURE**

- 20.1 Introduction
- 20.2 Empirical Test
- 20.3 Summary
- 20.4 Self-Check Questions
- 20.5 Short Questions
- 20.6 Long Questions
- 20.7 References
- 20.8 Answer to Self-Check Questions

**20.1 Introduction**

Markowitz portfolio theory and the capital asset pricing model (CAPM), collectively represent the foundation for understanding the connection between risk and expected return in financial markets. This chapter considers several important extensions of this framework. Specifically, whereas the CAPM designated a single risk factor to account for the volatility inherent in an individual security or portfolio of securities, i.e., application of multifactor explanations of risk and return- explanation of the leading alternative to the CAPM- the arbitrage pricing theory (APT), which was developed by Stephen Ross. The chief difference between the CAPM and the APT is that the latter specifies several risk factors, thereby allowing for a more expansive definition of systematic investment risk than that implied by the CAPM's single market portfolio.

Many of the empirical studies cited also point out some of the deficiencies in the CAPM model as an explanation of the link between risk and return. For example, tests of the CAPM indicated that the beta coefficients for individual securities were not stable but that portfolio betas generally were stable assuming long enough sample periods and adequate trading volume. There was mixed support for a positive linear relationship between rates of return and systematic risk for portfolios of stock, with some recent evidence indicating the need to consider additional risk variables or a need for different risk proxies. In addition, several papers criticized the tests of the model and the usefulness of the model in portfolio evaluation because of its dependence on a market, portfolio of risky assets that is not currently available.

One especially compelling challenge to the efficacy of the CAPM was the set of results suggesting that it is possible to use knowledge of certain firm or security characteristics to develop profit table trading strategies, even after adjusting for investment risk as measured by beta. Typical of this work were the findings of Banz, who showed that portfolios of stocks with low market capitalizations (i.e., "small\* stocks) outperformed "large\* stock portfolios on a risk-adjusted basis, and Basu, who documented that stocks with low price-earnings (P-E) ratios similarly outperformed high P-E stocks More recent work by Fama and French also demonstrates that "value" stocks (i.e., those with high book value-to-market price ratios) tend to produce larger risk-adjusted returns than "growth\* stocks (i.e., those with low book-to-market ratios).<sup>2</sup> Of course, in an efficient market, these return differentials should not occur, which in turn leads to one of two conclusions: (1) markets are not particularly efficient for extended periods of time (i.e., investors have been ignoring profitable investment opportunities for decades), or (2) market prices are efficient but there is something wrong with the way the single-factor models such as the CAPM measure risk.

Given the implausibility of the first possibility, in the early 1970s, financial economists began to

consider in earnest the implications. The result was the arbitrage pricing theory (APT), which was developed by Ross in the mid-1970s and has three major assumptions:

- + Capital markets are perfectly competitive.
- + Investors always prefer more wealth to less wealth with certainty.
- + The stochastic process generating asset returns can be expressed as a linear function of a set of  $K$  risk factors (or indexes).

Equally Important, the following major assumptions—which were used in the development—are not required: (1) Investors possess quadratic utility functions, (2) normally d security returns, and (3) a market portfolio that contains all risky assets and is mean- coefficient. Obviously, if such a model is both simpler and can explain differential securities', it will be considered a superior theory to the CAPM.

Prior to discussing the empirical tests of the APT, we provide a brief review of the basics of the model. As noted, the theory assumes that the stochastic process generating asset returns can be represented! as a  $K$  factor model of the form:

Two terms require elaboration:  $a_j$  and  $b_{ij}$ . As indicated, terms are the multiple risk factors expected to have an impact on the returns of all assets. Examples of these factors might include inflation, growth in gross

$$R_i = E(R_i) + b_{i1}\delta_1 + b_{i2}\delta_2 + \dots + b_{ik}\delta_k + \epsilon_i, \text{ for } i = 1 \text{ to } n$$

where:

$R_i$  = the actual return on asset  $i$  during a specified time period,  $i = 1, 2, 3, \dots, n$   $E(R_i)$  = the expected return for asset  $i$  if all the risk factors have zero changes

$b_{ij}$  = the reaction in asset  $i$ 's returns to movements in a common risk factor  $j$   $k$  = a set of common factors or indexes with a zero mean that influences the returns on all assets

$\epsilon_i$  = a unique effect on asset  $i$ 's return (i.e., a random error term that, by assumption, is completely diversifiable in large portfolios and has a mean of zero)

$n$  = number of assets

domestic product (GDP), major political upheavals, or changes in interest rates. The APT contends that there are many such factors that affect returns, in contrast to the CAPM, where the only relevant risk to measure is the covariance of the asset with the market portfolio (i.e., the asset's beta).

Given these common factors, the  $b_{ij}$  terms determine how each asset reacts to the  $j$ th particular common factor. To extend the earlier intuition, although all assets may be affected by growth in GDP, the impact (i.e., reaction) to a factor will differ. For example, stocks of cyclical firms will have larger  $b_{ij}$  terms for the "growth in GDP" factor than will noncyclical firms, such as grocery store chains. Likewise, you will hear discussions about interest-sensitive stocks. All stocks are affected by changes in interest rates; however, some experience larger impacts. For example, an interest-sensitive stock would have a  $b_j$  interest of 2.0 or more, whereas a stock that is relatively insensitive to interest rates would have a  $b_j$  of 0.5. Other examples of common factors include changes in unemployment rates, exchange rates, and yield curve shifts. It is important to note, however, that when we apply the theory, the factors are not identified. That is, when we discuss the empirical studies of the APT, the investigators will note that they found three, four, or five factors that affect security returns, but they will give no indication of what these factors represent.

Similar to the CAPM model, the APT assumes that the unique effects ( $\epsilon_i$ ) are independent and will be diversified away in a large portfolio. Specifically, the APT requires that in equilibrium the return on a zero-investment, zero-systematic-risk portfolio is zero when the unique effects are diversified away. This assumption (and some theoretical manipulation using linear algebra) implies that the expected return on any asset  $i$  (i.e.,  $E(R_i)$ ), can be expressed as:

$$E(R_i) = \lambda_0 + \lambda_1 b_{i1} + \lambda_2 b_{i2} + \dots + \lambda_k b_{ik} \quad (\text{APT})$$

$\lambda_0$  = the expected return on an asset with zero systematic risk

$\lambda_j$  = the risk premium related to the  $j$ th common risk factor

$b_{ij}$  - the pricing relationship between the risk premium and the asset; that is, how responsive assets  $i$  is to the  $j$ th common factor. (These are called factor betas or factor loadings.)

where: This equation represents the fundamental result of the APT. It is useful to compare the form of the APT's specification of the expected return-risk relationship with that of the CAPM. The comparable result for the CAPM is:

$$E(R_i) = RFR + \beta_i [E(R_m) - RFR]$$

As noted earlier, the primary challenge in using the APT in security valuation involves the identification of the risk factors.

These factor sensitivities can be interpreted in much the same way as beta in the CAPM; that is, the higher the level of  $b_{ij}$ , the greater the sensitivity of asset  $i$  to changes in the  $j$ th risk factor. Thus, the response coefficients listed indicate that if these are the major factors influencing asset returns, asset  $y$  is a higher risk asset than asset  $x$ , and, therefore, its expected return should be greater. The overall expected return equation will be:

## 20.2 Empirical Tests:

Although the APT is considerably newer than the CAPM, it has undergone numerous empirical studies. Before we begin discussing the empirical tests, remember the crucial caveat that when applying the theory, we do not know what the factors generated by the formal model actually represent. This becomes a major point in some discussions of test results.

Roll-Ross Study Roll and Ross produced one of the first large-scale empirical tests of the APT

$$E(R) = \lambda_0 + \lambda_1 b_{1i} + \lambda_2 b_{2i}$$

$$= 0.04 + (0.02)b_{1i} + (0.03)b_{2i}$$

Therefore, for assets  $x$  and  $y$ :

$$E(R_x) = 0.04 + (0.02)(0.50) + (0.03)(1.50) = 0.0950 = 9.50\%$$

and

$$E(R_y) = 0.04 + (0.02)(2.00) + (0.03)(1.75) = 0.1325 = 13.25\%$$

Their methodology followed a two-step procedure:

Estimate the expected returns and the factor coefficients from time-series data on individual asset returns.

Use these estimates to test the basic cross-sectional pricing conclusion implied by the APT. Specifically, are the expected returns for these assets, consistent with the common factors derived in Step 1?

In particular, the authors tested the following pricing relationship:

$$E(R_i) = \lambda_0 + \lambda_1 b_{i1} + \lambda_2 b_{i2} + \dots + \lambda_k b_{ik}$$

The specific  $b_i$  coefficients were estimated using the statistical technique of factor analysis. The authors pointed out that the estimation procedure was generally appropriate for the model involved, but there is very little known about the small sample properties of the results. Therefore, they emphasized the tentative nature of the conclusions.

A subsequent test related returns to a security's own standard deviation, which should not affect expected return if the APT is valid because a security's unsystematic component would be eliminated by diversification, and the non-diversifiable components should be explained by the factor sensitivities (or "loadings"). The test analyzed returns against the five factors plus the security's own standard deviation.

The primary results showed that the security's own standard deviation was statistically significant, which provided evidence against the APT. Subsequently, they adjusted the results for skewness and found that the security's own standard deviation was insignificant, which supports the APT.

Finally, Roll and Ross tested whether the three or four factors that affect Group A were the same as the factors that affect Group B. The analysis involved testing for cross-sectional consistency by examining whether the coefficients for the 42 groups are similar. The results yielded no evidence that the intercept terms were different, although the test was admittedly weak. The authors concluded that the evidence generally supported the APT but acknowledged that their tests were not conclusive.

### **20.3 SUMMARY**

Ross subsequently devised an alternative asset pricing model—the APT—that makes fewer assumptions than the CAPM and does not specifically require the designation of a market portfolio. Instead, the APT posits that expected security returns are related in a linear fashion to multiple common risk factors. Unfortunately, however, the theory does not offer guidance as to how many factors exist or what their identities might be. The results from the empirical tests of the APT have thus far been mixed. On one hand, it appears that there are at least three risk factors that appear to be consistently “priced” by the capital markets. On the other hand, these factors may not be the same ones from one period to the next; and Shanken contends that the nature of many of the tests makes it impossible to credibly test the theory at all.

Given that the common risk factors are not identified, the APT is difficult to put into practice in a theoretically rigorous fashion. Multifactor models of risk and return attempt to bridge this gap between theory and practice by specifying a set of variables that are thought to capture the essence of the systematic risk exposures that exist in the capital market. Over the past two decades, there have been a number of alternative risk factors suggested and tested by financial researchers. One general approach that has been adopted successfully has been to use macroeconomic variables—such as unexpected inflation, changes in consumer confidence, unanticipated shifts in the yield curve, or unexpected changes in real GDP—as surrogates for the types of exposures that will have an impact on all securities. Once selected, historical data are often employed to determine the risk premium (i.e., market “price”) for each common factor.

An equally successful second approach to identifying the risk exposures in a multifactor model has focused on the characteristics of the securities themselves. Typical of this sort of microeconomic approach is the work of Fama and French, who posit that three risk factors should be employed: the excess returns to a broad market index, the return difference between portfolios of small- and large-cap stocks, and the return difference between portfolios of value- and growth- oriented stocks.

One immediate advantage of this specification is that it accounts directly for some of the anomalies that plagued the CAPM (i.e., the small-firm effect). Another advantage of the characteristic-based approach to forming factor models is the flexibility to modify the equation to changing market conditions. For instance, the Fama-French model has been expanded to include a factor accounting for stock return momentum, while the BARRA model incorporates almost 70 different risk and industry factors.

In conclusion, it is probably safe to assume that both the CAPM and APT will continue to be used to price capital assets. Coincident with their use will be further empirical tests of both theories, the ultimate goal being to determine which theory does the best job of explaining current returns and predicting future ones. Notably, although the APT model requires fewer assumptions and considers multiple factors to explain the risk of an asset, the CAPM has an advantage in that its single risk factor is well defined. Future work in this area will continue to seek to identify the set of factors that best captures the relevant dimension of investment risk as well as explore the inter temporal dynamics of the models

(e.g., factor betas and risk premium that change over time.

#### 20.4 Self-Check Questions

1. **Question 1:** What is the fundamental concept underlying Arbitrage Pricing Theory (APT)?
  - a. Efficient markets
  - b. Systematic risk factors
  - c. Dividend discount model
  - d. Technical analysis
2. **Question 2:** According to APT, what is the relationship between the expected return of an asset and its exposure to various factors?
  - a. Linear
  - b. Nonlinear
  - c. Inverse
  - d. Constant
3. **Question 3:** In APT, what is the role of the risk premium associated with each factor?
  - a. It represents the total return of an asset.
  - b. It indicates the unsystematic risk of an asset.
  - c. It quantifies the compensation for bearing risk related to a specific factor.
  - d. It is irrelevant in APT.
4. **Question 4:** How does Arbitrage Pricing Theory differ from the Capital Asset Pricing Model (CAPM)?
  - a. APT uses a single-factor model, while CAPM uses multiple factors.
  - b. APT allows for multiple factors influencing returns, while CAPM relies on a single market factor.
  - c. APT assumes perfect markets, while CAPM considers imperfect markets.
  - d. APT and CAPM are essentially the same in their approach.
5. **Question 5:** According to APT, if an asset's expected return is greater than the required return, what does this suggest?
  - a. The asset is overvalued.
  - b. The asset is undervalued.
  - c. The market is inefficient.
  - d. There is an arbitrage opportunity.

#### 20.5 Short Questions

1. What is the primary assumption of Arbitrage Pricing Theory (APT) regarding the relationship between risk and expected return?
2. How does APT differ from the Capital Asset Pricing Model (CAPM) in terms of factors influencing asset returns?
3. According to APT, what is the role of systematic risk factors in determining asset prices?
4. How does APT address the limitations of the single-factor model used in CAPM?

#### 20.6 Long Questions

1. In APT, what does an undervalued or overvalued asset suggest about its expected return?
2. What is the key concept behind arbitrage opportunities in the context of Arbitrage Pricing Theory?
3. How does APT handle the variability of asset returns in response to changes in different economic factors?
4. According to APT, is it possible for investors to earn excess returns without bearing additional risk?

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**20.8 Self-Check Questions Answers Key**

1. b. Systematic risk factors
2. a. Linear
3. c. It quantifies the compensation for bearing risk related to a specific factor.
4. b. APT allows for multiple factors influencing returns, while CAPM relies on a single market factor.
5. d. There is an arbitrage opportunity.

## **PORTFOLIO REVISION**

### **STRUCTURE**

- 21.1 Introduction
- 21.2 Objectives of Portfolio Management
- 21.3 Functions Of Portfolio Management
- 21.4 Meaning of Portfolio Revision
- 21.5 Need of Portfolio Revision
- 21.6 Constraints In Portfolio Revision
- 21.7 Self-Check Questions
- 21.8 Short Questions
- 21.9 Long Questions
- 21.10 Reference
- 21.11 Answers to Self-Check Questions

### **21.1 Introduction**

Portfolio theory is an investment approach developed by University of Chicago economist Harry M. Markowitz (1927), who won a Nobel Prize in economics in 1990. Portfolio theory allows investors to, estimate both the expected risks and returns, as measured statistically, for their investment portfolios. Markowitz described how to combine assets into efficiently diversified portfolios, it was his position that a portfolio's risk could be reduced and the expected rate of return could be improved if investments having dissimilar price movements were combined. In other words, Markowitz explained how to best assemble a diversified portfolio and proved that such a portfolio would likely do well.

**There are two types of Portfolio Strategies:**

#### **(A) Passive Portfolio Strategy**

A strategy that involves minimal expectation input, and instead relies on diversification to match the performance of some market index.

#### **(B) Active Portfolio Strategy**

A strategy that uses available information and forecasting techniques to seek a better performance than a portfolio that is simply diversified broadly.

### 21.2 **OBJECTIVES OF PORTFOLIO MANAGEMENT**

The basic objective of Portfolio Management is to maximize yield and minimize risk. Some other objectives are as follows:

- a) **Stability of Income:** An investor considers stability of income from his investment. He also considers the stability of purchasing power of income.
- b) **Capital Growth:** Capital appreciation has become an important investment principle. Investors seek growth stocks which provide a very large capital appreciation by way of rights, bonus and appreciation in the market price of a share.



- c) Liquidity: An investment is a liquid asset. It can be converted into cash with the help of a stock exchange. Investment should be liquid as well as marketable. The portfolio should contain a planned proportion of high-grade and readily saleable investment.
- d) Safety: safety means protection for investment against loss under reasonably variations. In order to provide safety, a careful review of economic and industry trends is necessary. In other words, errors in portfolio are unavoidable and it requires extensive diversification.
- e) Tax Incentives: Investors try to minimize their tax liabilities from the investments. The portfolio manager has to keep a list of such investment avenues along with the return risk, profile, tax implications, yields and other returns.

There are three goals of portfolio management:

1. Maximize the value of the portfolio
2. Seek balance in the portfolio
3. Keep portfolio projects strategically aligned

### **21.3 FUNCTIONS OF PORTFOLIO MANAGEMENT**

The basic purpose of portfolio management is to maximize yield and minimize risk. Everyone is risk averse. In order to diversify the risk by investing into various securities following notions are required to be performed.

The functions undertaken by the portfolio management are as follows:

1. To frame the investment strategy and select an investment mix to achieve the desired investment objective;
2. To provide a balanced portfolio, which can hedge against the inflation and can also optimize returns with the associated degree of risk.
3. To make timely buying and selling of securities;
4. To maximize the after-tax return by investing in various taxes saving investment instruments.

#### **1) IDENTIFICATION OF THE OBJECTIVES**

The starting point in this process is to determine the characteristics of the various investments and then matching them with the individuals need and preferences. All the personal investing is designed in order to achieve certain objectives. These objectives may be tangible such as buying a car, house etc. and intangible objectives such as social status, security etc. Similarly, these objectives may be classified as financial or personal objectives. Financial objectives are safety, profitability and liquidity. Personal or individual objectives may be related to personal characteristics of individuals such as family commitments, status, depends, educational requirements, income, consumption and provision for retirement etc.

#### **2) FORMULATION OF PORTFOLIO STRATEGY**

The aspect of Portfolio Management is the most important element of proper portfolio investment and speculation. While planning, a careful review should be conducted about the financial situation and current capital market conditions. This will suggest a set of investment and speculation policies to be followed. The statement of investment policies includes the portfolio objectives, strategies, and constraints. Portfolio strategy means plan or policy to be followed while investing in different types of assets. There are different investment strategies. They require changes as time passes, investor's wealth changes, security price change, investor's knowledge expands. Therefore, the optional strategic asset allocation also changes. The strategic asset allocation policy would call for broad diversification through an indexed holding of virtually all securities in the asset class.

#### **3) SELECTION OF ASSET MIX**

The most important decision in portfolio management is selection of asset mix. It means spreading out portfolio investment into different asset classes like bonds, stocks, mutual funds etc. In other words, selection of asset mix means investing in different kinds of assets and reduces risk and volatility and maximizes returns in investment portfolio. Selection of asset mix refers to the percentage to be invested in various security classes. Once the objective of the portfolio is determined the securities to be included in the portfolio must be selected. Normally the portfolio is selected from a list of high-quality bonds that the portfolio manager has at hand. The portfolio manager has to decide the goals before selecting the common stock. The goal may be to achieve pure growth, growth with some income or income only. Once the goal has been selected, the portfolio manager can select the common stocks.

#### **4) PORTFOLIO EXECUTION**

The process of portfolio management involves a logical set of steps common to any decision, plan, implementation and monitor. Applying this process to actual portfolios can be complex. Therefore, in the execution stage, three decisions need to be made, if the percentage holdings of various asset classes are currently different from desired holdings. The portfolio then, should be rebalanced! If the statement of investment policy requires pure investment strategy, this is only thing, which is done in the execution stage. However, many portfolio managers engage in the speculative transactions in the belief that such transactions will generate excess risk-adjusted returns. Such speculative transactions are usually classified as timing or selection decisions. Timing decisions over or under weight various asset classes, industries or economic sectors from the strategic asset allocation. Such timing decisions are known as tactical asset allocation and selection decision deals with securities within a given asset class, industry group or economic sector. The investor has to begin with periodically adjusting the asset mix to the desired mix, which is known as strategic asset allocation. Then the investor or portfolio manager can make any tactical asset allocation for security selection decision.

#### **21.5 Meaning of Portfolio Revision**

Portfolio revision involves changing the existing mix of securities. The objective of portfolio revision is similar to the objective of portfolio selection i.e., maximizing the return for a given level of risk or minimizing the risk for a given level of return. The process of portfolio revision may also be similar to the process of portfolio selection. This is particularly true where active portfolio revision strategy is followed. Where passive portfolio revision strategy is followed, use of mechanical formula plans may be made.

Portfolio management would be an incomplete exercise without periodic review.

The portfolio, which is once selected, has to be continuously reviewed over a period of time and if necessary revised depending on the objectives of investor. Thus, portfolio revision means changing the assets allocation of a portfolio. Investment portfolio management involves maintaining proper combination of securities, which comprise the investor's portfolio in a manner that they give maximum, return with minimum risk. For this purpose, investor should have continuous review and scrutiny of his investment portfolio. Whenever adverse conditions develop, he can dispose of the securities, which are not worth. However, the frequency of review depends upon the size of the portfolio, the sum involved, the kind of securities held and the time available to the investor.

The review should include a careful examination of investment objectives, targets for portfolio performance, actual results obtained and analysis of reason for variations. The review should be followed by suitable and timely action. There are techniques of portfolio revision. Investors buy stock according to their objectives and return-risk framework. These fluctuations may be related to economic activity or due to other factors. Ideally investors should buy when prices are low and sell when prices rise to levels higher than their normal fluctuations. The investor should decide how often the portfolio should be revised. If revision occurs too often, transaction and analysis costs may be high. If revision is attempted too

infrequently the benefits of timing may be foregone. The important factor to take into consideration is, thus, timing for revision of portfolio.

#### 21.4 **Need for Portfolio Revision**

The need for portfolio revision might simply arise because the market witnessed some significant changes since the creation of the portfolio. Further, the need for portfolio revision may arise because of some investor-related factors such as (i) availability of additional wealth, (ii) change in the risk attitude and the utility function of the investor, (iii) change in the investment goals of the investors and (iv) the need to liquidate a part of the portfolio to provide funds for some alternative uses. The other valid reasons for portfolio revision such as short-term price fluctuations in the market do also exist. There are, thus, numerous factors, which may be broadly called market related and investor-related, which spell need for portfolio revision.

After fixing the target Beta and duration of the portfolio, the investment activity starts with the selection of Scrips and Bonds, etc. But the portfolio once constructed undergoes changes due to changes in market prices and a reassessment of companies and the portfolio Beta and the proportion in each asset class will change to bring back the portfolio to the targeted level of Beta and duration, portfolio revision will take place and composition of portfolio will change. A change in interest rate will also affect the portfolio through change in duration. Constant market changes necessitate readjustment of portfolio leading to purchases and sales of equities, bonds etc., which in turn will result in change in Beta and duration.

Thus, any portfolio requires constant monitoring and revision. Operations on a portfolio will thus take place on a daily basis, keeping in mind, the targeted Beta, duration and return. Changes in investor's financial status, his preferences and market conditions, will also require changes in portfolio composition.

#### 21.6 **CONSTRAINTS IN PORTFOLIO REVISION:**

Some common constraints in portfolio revision are as follows:

- Transaction cost
- Taxes
- Statutory Stipulation
- No Singal Formula

##### **Formula Plans:**

##### **Formula Investing:**

One type of formula investing, called dollar cost averaging, involves putting the same amount of money into a stock or mutual fund at regular intervals, so that more shares will be bought when the price is low and less when the price is high. Another formula investing method calls for shifting funds from stocks to bonds or vice versa as the stock market reaches particular price levels. If stocks rise to a particular point, a certain amount of the stock portfolio is sold and put in bonds. On the other hand, if stocks fall to a particular low price, money is brought out of bonds into stocks.

##### **Basic Assumptions and Ground Rules of Formula Plan:**

The formula plans are based on the following assumption.

- One, the stock prices move up and down in cycle.
- Two, the stock prices and the high-grade bond prices move in the opposite directions.
- Three, the investors cannot or are not inclined to forecast direction of the next fluctuations in stock prices, which may be due to lack of skill and resources or their belief in market efficiency or both.

##### **Constant Dollar-Value Plan**

An investment strategy designed to reduce volatility in which securities, typically mutual funds, are purchased in fixed dollar amounts at regular intervals, regardless of what direction the market is

moving. Thus, as prices of securities rise, fewer units are bought, and as prices fall, more units are bought also called constant dollar plan, also called dollar cost averaging.

**Dollar Cost Averaging:**

**Dollar-Cost Averaging - DCA:**

It is a technique of buying a fixed dollar amount of a particular investment on a regular schedule, regardless of the share price. More shares are purchased when prices are low, and fewer shares are bought when prices are high. Also referred to as "constant dollar plan".

**Constant-Ratio Plan:**

The constant-ratio plan specifies that the value of the aggressive portfolio to the value of the conservative portfolio will be held constant at the predetermined ratio. This plan automatically forces the investor to sell stocks as their prices rise, in order to keep the ratio of the value of their aggressive portfolio to the value of the conservative portfolio constant.

**Variable-Ratio Plan:**

Variable-ratio plan is a more flexible variation of constant ratio plan. Under the variable ratio plan, it is provided that if the value of aggressive portfolio changes by certain percentage or more, the initial ratio between the aggressive portfolio and conservative portfolio will be allowed to change as per the pre-determined schedule. Some variations of this plan provide for the ratios to vary according to economic or market indices, rather than the value of the aggressive portfolio. Still others use moving averages of indicators. In order to illustrate the working of variable ratio plan let us continue with the previous example with the following modifications:

The variable-ratio plan states that if the value of the aggressive portfolio rises by 20% or more from the present price of Rs. 25, the appropriate ratio of the aggressive portfolio will be 3:7 instead of the initial ratio of 1:1. Likewise, if the value of the aggressive portfolio decreases by 20% or more from the present price of Rs. 25, the appropriate percentage of aggressive portfolio to conservative portfolio will be.

**21.5 Self-Check Questions**

1. **Question 1:** What does portfolio revision involve in the context of investment management?
  - a. Adding more risk to the portfolio
  - b. Adjusting the allocation of assets in the portfolio
  - c. Ignoring changes in market conditions
  - d. Holding the portfolio unchanged indefinitely
2. **Question 2:** When is portfolio revision typically recommended?
  - a. Only during market crashes
  - b. Annually, regardless of market conditions
  - c. In response to changes in economic conditions or investment goals
  - d. Only when adding new assets to the portfolio
3. **Question 3:** What factor is crucial in determining the need for portfolio revision?
  - a. Historical performance of the portfolio
  - b. The investor's risk tolerance
  - c. Consistency in asset allocation
  - d. Changes in market conditions and economic outlook
4. **Question 4:** How does systematic portfolio revision differ from unsystematic revision?
  - a. Systematic revision is based on market conditions, while unsystematic revision is random.
  - b. Systematic revision is driven by individual investor preferences, while unsystematic revision is rule-based.
  - c. Systematic revision is predetermined, while unsystematic revision responds to unexpected events.

d. Systematic revision is performed by professional portfolio managers, while unsystematic revision is done by individual investors.

5. **Question 5:** In portfolio revision, what does the concept of "buy-and-hold" suggest?

- a. Frequent buying and selling of assets
- b. Holding the portfolio without making any changes
- c. Focusing only on short-term gains
- d. Exclusively buying assets with high returns

#### **21.6 Short Questions**

1. What is the primary purpose of portfolio revision in investment management?
2. How does market volatility influence the need for portfolio revision?
3. What role do changes in economic conditions play in portfolio revision?
4. Why is systematic portfolio revision considered different from unsystematic revision?

#### **21.7 Long Questions**

1. How does the concept of "buy-and-hold" relate to portfolio revision strategies?
2. In what situations might investors consider adjusting their asset allocation during portfolio revision?
3. How does the risk-return profile of a portfolio impact the decision to undergo portfolio revision?
4. What factors should investors evaluate when determining the frequency of portfolio revision?

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#### **21.9 Answer Key to Self-Check Questions**

1. b. Adjusting the allocation of assets in the portfolio
2. c. In response to changes in economic conditions or investment goals
3. d. Changes in market conditions and economic outlook
4. c. Systematic revision is predetermined, while unsystematic revision responds to unexpected events.
5. b. Holding the portfolio without making any changes

### **PERFORMANCE EVALUATION OF PORTFOLIO**

#### **STRUCTURE**

- 22.1 Methods of calculating portfolio returns
- 22.2 Portfolio performance and risk adjusted methods
- 22.3 Determinants of portfolio performance
- 22.4 Market timing
- 22.5 Criteria for evaluation of portfolio
- 22.6 Jensen portfolio measure
- 22.7 Self-check questions
- 22.8 Short questions
- 22.9 Long questions
- 22.10 Reference
- 22.11 Answers to self-check questions

#### **22.1 Methods of calculating portfolio returns**

Calculation of portfolio returns is almost similar to the calculation of rate of return on individual stock. The rate of return is generally estimated for a specific holding period. The performance of a portfolio fund is evaluated on the returns generated over a timeframe, with number of sub- periods, by considering the holding periods. The calculation of portfolio return is relatively easy when there are no additions or withdrawals from the initial corpus during the given phenomena.

Performance measurement is just an accounting function that attempts to reconcile the end. of period with the beginning period values. Performance evaluation on the other hand, addresses the issues of whether:

- (i) the past performance was superior or inferior
- (ii) such performance was due to skill or luck
- (in) future performance will be similar or not

Portfolio performance is generally evaluated over a time interval of at least four years, with returns for a number of sub-periods within the interval, like monthly or quarterly, so that there is a fairly adequate number of observations for statistical evaluation. The calculation of portfolio return is fairly simple when there are no deposits or withdrawals of money from a portfolio during a time period. In that case, the market value of the portfolio in the beginning and at the end of the given period is determined for computing the portfolio return.

When there exist intermediate cash flows that may be due to dividend declarations by some companies and when such cash flows are reinvested into the units of the given mutual fund:

The following methods are used to calculate the portfolio return.

1. Dollar-Weighted Rate of Return
2. Time-Weighted Rate of Return
3. Unit-Value Rate of Return

#### **22.2 Portfolio performance and risk adjusted methods**

Modern Portfolio Theory provides a variety of measures to measure the return on a portfolio as

well as the risk. Where a portfolio carries a degree of risk, the return from it should be evaluated in terms of risk. More, specifically, it is better to evaluate the performance of fund in terms of return per unit of risk. In case of a well-diversified portfolio the standard deviation could be used as a measure of risk, but in case of individual assets and not-so-well diversified portfolios, the relevant measure of risk could be the systematic risk.

There are three popular measures to estimate the return per unit of risk from a portfolio. They are

- Sharpe's Ratio
- Treynor's Measure
- Jensen's Differential Returns

### 22.3 **Determinants of portfolio performance**

Performance of the portfolio depends on certain critical decisions taken by a portfolio manager. An evaluation of these decisions helps us to determine the activities that need efficiency for I setter portfolio perform since. The popular activities associated in this regard are:

1. Investment policy
2. Stock Selection
3. Market Timing

### 22.4 **Market timing**

A portfolio manager's performance has been seen so far in the context of stock selection for superior performance. Managers can also generate superior performance from a portfolio by planning the investment and disinvestment activities by shifting from stocks to bonds or bonds to stocks based on good market timing sense. Positioning of a portfolio is to be adjusted by correctly adjusting the direction of the market, either in the bull or bear phases. Managers with a forecast of a declining market can position a portfolio either by shifting resources from stocks to bonds, or restructure the component stocks in such a way that the beta of the equity portion of the portfolio comes down.

#### **Benchmark Portfolios for Performance Evaluation;**

Benchmark portfolio is a tool for the meaningful evaluation of the performance of a portfolio manager. The more the benchmark reflects the manager's stated style, the more accurately the performance, due to a manager's skills can be assessed. Specialized benchmarks are called "normal portfolios." When benchmarks are designed in advance, the portfolio manager knows what the specific objectives are and tailors the portfolio accordingly. The benchmark should reflect the appropriate investment universe in which the manager works. The process of constructing a benchmark portfolio involves:

- a) Defining the universe of stock to be used for the benchmark portfolio, and
- b) Defining the weightage of the stocks in the universe.

#### **Evaluation of Portfolio Performance:**

Investment analysts and Portfolio Managers continuously monitor and evaluate the results of their performance. The revision of portfolio investments is conducted on the basis of such monitoring and evaluation. The ability of Managers to us perform the market depends on their expertise and experience. The basic features of good Portfolio Managers are their ability to perceive the market n-ends correctly and make correct expectations and estimates regarding risk, returns, ability to make proper diversification, to reduce the company related risk and use proper Beta estimates for selection of securities to reduce the systematic risk. In such case, it is possible for an expert Portfolio Manager to show superior performance over the market. This performance also depends on the timing of investments and superior investment analysis and security selection. He has to have, the acumen to select the undervalued shares under each risk class, for which a high degree of equity research is needed.

The two major factors which influence his performance are the return achieved and the level of

risk that the portfolio is exposed to. The Manager has to make proper diversification into different industries, asset classes and instruments so as to reduce the unsystematic risk to the minimum for a given level of return. The market related risk has to be managed by a proper selection of Beta for the securities.

#### 22.5 **Criteria for Evaluation of Portfolio:**

Portfolio managers and investors who manage their own portfolios continuously monitor and review the performance of the portfolio. The evaluation of each portfolio, followed by revision and reconstruction are all steps in the portfolio Management.

Managers and Analysts “wish to know how they performed in their investment strategies in terms of return per unit of risk, both in absolute terms and relative terms relative to overall market performance. They have to assess the extent to which the objectives aimed at are being achieved say in terms of income, capital appreciation.

In this context, evaluation has to take into account whether the portfolio secured above average returns, average or below average, as compared to the market return. The ability to diversify with a view/ to reduce and even eliminate all unsystematic risk and expertise in managing the systematic, risk related to the market by use of appropriate risk measures, namely, Betas. Selection of proper securities is thus the first requirement.

Superior timing and superior stock selection may result in above average return. Diversification in terms of Markowitz model or Sharpe's Single Index Model will reduce the market related risk and maximize the returns for a given level of risk. Market returns being related positively to risk, evaluation has to take into account:

1. Rate of returns, or excess return over risk free rate.
2. Level of Risk both Systematic (Beta) and Unsystematic and residual risks through proper diversification.

Under the Traditional theory, the evaluation is only in terms of the rate of return, particularly in comparison with other assets of the same risk class. The theory of Markowitz and Modern Portfolio Theory have opened up the avenue for selecting and evaluating the portfolios on the basis of risk adjusted return. Modern portfolio theory has postulated that the portfolio selection and evaluation should be on the basis of both Risk and Return and the objective should be to optimize the return for a given level of risk or to minimize the risk for a given level of return. Due to uneven fluctuations of return and high degree of variability of returns, risk adjusted returns become the basis for evaluation. This is possible due to later developments involving the quantification of risk by the statistical measures of S.D., variance and covariance of returns of securities in a portfolio.

There was no composite index, which measures both return and risk under the Traditional Theory. In Modern Portfolio Theory it became necessary to develop some composite measures of both return and risk in portfolio performance, as the objective now is maximization of return and minimization of risk. Because of the trade-off between them, simple maximization of returns or single goal of minimization of risk will be defeating the objectives of Modern Portfolio Management.

It was in the context that later researches have tried to evolve a composite index to measure risk-based returns taking into account the different components of risk, viz., systematic, unsystematic and residual risk. The credit for evolving these criteria goes to Sharpe, Treynor and Jensen.

At one time, investors evaluated portfolio performance almost entirely on the basis of the rate of return. They were aware of the concept of risk but did not know how to quantify or measure it, so they could not consider it explicitly. Developments in portfolio theory in the early 1960s showed investors how to quantify and measure risk in terms of the variability of returns, Still, because no single measure combined both return and risk, the two factors had to be considered separately as researchers had done in



several early studies. Specifically, the investigators grouped portfolios into similar risk classes based on a measure of risk (such as the variance of return) and then compared the rates of return for alternative portfolios directly within these risk classes.

We first consider the concept of a peer group comparison. This method, which Kritzman describes as the most common manner of evaluating portfolio managers, collects the returns produced by a representative universe of investors over a specific period of time and displays them in a simple boxplot format. To aid the comparison, the universe is typically divided into percentiles, which indicate the relative ranking of a given investor. For instance, a portfolio manager that produced a one-year return of 12.4 percent would be in the 10th percentile if only nine other portfolios in a universe of 100 produced a higher return. Although these comparisons can get quite detailed, it is common for the boxplot graphic to include the maximum and minimum returns, as well as the returns falling at the 25th, 50th (i.e., the median), and 75th percentiles.

Treynor developed the first composite measure of portfolio performance that included risk. He postulated two components of risk: (1) risk produced by general market fluctuations and (2) risk resulting from unique fluctuations in the portfolio securities. To identify risk due to market fluctuations, he introduced the characteristic line, which defines the relationship between the rates of return for a portfolio over time and the rates of return for an appropriate market portfolio. He noted that the characteristic line's slope measures the relative volatility of the portfolio's returns in relation to returns for the aggregate market, this slope is the portfolio's beta coefficient. A higher slope (beta) characterizes a portfolio that is more sensitive to market returns and that has greater market risk. Deviations from the characteristic line indicate unique returns for the portfolio relative to the market. These differences arise from the returns on individual stocks in the portfolio. In a completely diversified portfolio, these unique returns for individual stocks should cancel out. As the correlation of the portfolio with the market increases, unique risk declines and diversification improves. Because Treynor was not concerned about this aspect of portfolio performance, he gave no further consideration to the diversification measure. Treynor was interested in a measure of performance that would apply to all investors—regardless of their risk preferences. Building on developments in capital market theory, he introduced a risk-free asset that could be combined with different portfolios to form a straight portfolio possibility line. He showed that rational, risk-averse investors would always prefer portfolio possibility lines with larger slopes because such high-slope lines would place investors on higher indifference curves. The slope of this portfolio possibility line (designated  $T$ ) is equal to

As noted, a larger  $T$  value indicates a larger slope and a better portfolio for all investors (regardless of their risk preferences). Because the numerator of this ratio ( $R_i - R_{FR}$ ) is the risk premium and the denominator is a measure of risk, the total expression indicates the portfolio's risk premium return per unit of risk. All risk-averse investors would prefer to maximize this value. Note that the risk variable beta measures systematic risk and tells us nothing about the diversification of the portfolio. It implicitly assumes a completely diversified portfolio, which means that systematic risk is the relevant risk measure.

Comparing a portfolio's  $T$  value to a similar measure for the market portfolio indicates whether the portfolio would plot above the SML. A portfolio with a higher  $T$  value than the market portfolio plots above the SML, indicating superior risk-adjusted performance. Very poor return performance or very good performance with very low risk may yield negative  $T$  values. An example of poor performance is a portfolio with both an average rate of return below the risk-free rate and a positive beta. A portfolio with a negative beta and an average rate of return above the risk-free rate of return would likewise have a negative  $T$  value. In this case, however, it indicates exemplary performance. As an example, assume that Portfolio Manager G invested heavily in gold mining stocks during a period of great political and economic

uncertainty. Because gold often has a negative correlation with most stocks, this portfolio's beta could be negative.

Sharpe Portfolio: Sharpe likewise conceived of a composite measure to evaluate the performance of mutual funds. The measure followed closely his earlier work on the capital asset pricing model (CAPM), dealing specifically with the capital market line (CML).

$$S = \frac{R - R_f}{\sigma} = \frac{E[R - R_f]}{\sqrt{\text{var}[R - R_f]}}$$

Since its revision by the original author in 1994, it is defined as: where  $R$  is the asset return,  $R_f$  is the return on a benchmark asset, such as the risk free rate of return,  $E[R - R_f]$  is the expected value of the excess of the asset return over the benchmark return, and  $\sigma$  is the standard deviation of the asset excess return.

Note, if  $R_f$  is a constant risk-free return throughout the period,

$$\sqrt{\text{var}[R - R_f]} = \sqrt{\text{var}[R]}.$$

The Sharpe ratio is used to characterize how well the return of an asset compensates the investors for the risk taken. When comparing two assets each with the expected return  $E[R]$  against the same benchmark with return  $R_f$ , the asset with the higher Sharpe ratio gives more return for the same risk. Investors are often advised to pick investments with high Sharpe ratios.

This composite measure of portfolio performance clearly is similar to the Treynor measure; however, it seeks to measure the total risk of the portfolio by including the standard deviation of returns rather than considering only the systematic risk summarized by beta. Because the numerator is the portfolio's risk premium, this measure indicates the risk premium return earned per unit of total risk. In terms of capital market theory, this portfolio performance measure uses total risk to compare portfolios to the CML, whereas the Treynor measure examines portfolio performance in relation to the SML. Finally, notice that in practice the standard deviation can be calculated using either total portfolio returns or portfolio returns in excess of the risk-free rate.

Treynor versus Sharpe Measure the Sharpe portfolio performance measure uses the standard deviation of returns as the measure of total risk, whereas the Treynor performance measure uses beta (systematic risk). The Sharpe measure, therefore, evaluates the portfolio manager on the basis of both rate of return performance and diversification. For a completely diversified portfolio, one without any unsystematic risk, the two measures give identical rankings because the total variance of the completely diversified portfolio is its systematic variance. Alternatively, a poorly diversified portfolio could have a high ranking on the basis of the Treynor performance measure but a much lower ranking on the basis of the Sharpe performance measure. Any difference in rank would come directly from a difference in diversification. Therefore, these two performance measures provide complementary yet different information, and both measures should be used. If you are dealing with a group of well-diversified portfolios, as many mutual funds are, the two measures provide similar rankings. A disadvantage of the Treynor and Sharpe measures is that they produce relative, but not absolute, rankings of portfolio performance.

## 22.6 Jensen Portfolio Measure:

Jensen's alpha "Portfolio Return - [Risk Free Rate + Portfolio Beta \* (Market Return - Risk Free Rate)]:

The Jensen measure is similar to the measures already discussed because it is based on the capital asset pricing model (CAPM). All versions of the CAPM calculate the expected one-period return on

any security or portfolio by the following expression:

$$E(R_j) = RFR + a_j[E(RM) - RFR]$$

$E(R_j)$  - the expected return on security or portfolio  $j$

$RFR$  = the one-period risk-free interest rate

$a_j$  = the systematic risk (beta) for security or portfolio  $j$

$E(RM)$  - the expected return on the market portfolio of risky assets

The expected return and the risk-free return vary for different periods. Consequently, we are concerned with the time series of expected rates of return for Security or Portfolio  $j$ . Moreover, assuming the asset pricing model is empirically valid, you can express Equation in terms of realized rates of return as follows:

$$R_{jt} = RFR_t + a_j[R_{mt} - RFR_t] + e_{jt}$$

This equation states that the realized rate of return on a security or portfolio during a given time period should be a linear function of the risk-free rate of return during the period, plus a risk premium that depends on the systematic risk of the security or portfolio during the period plus a random error term ( $e_{jt}$ ).

Subtracting the risk-free return from both sides, we have

$$R_{jt} - RFR_t = a_j[R_{mt} - RFR_t] + e_{jt}$$

This shows, that the risk premium earned on the  $j$ th portfolio is equal to  $a_j$  times a market risk premium plus a random error term. In this form, an intercept for the regression is not expected if all assets and portfolios were in equilibrium.

Alternately, superior portfolio managers who forecast market turns or consistently select undervalued securities earn higher risk premiums than those implied by this model. Specifically, superior portfolio managers have consistently positive random error terms because the actual returns for their portfolios consistently exceed the expected returns implied by this model. To detect said superior performance, you must allow for an intercept (a nonzero constant) that measures any positive or negative difference from the model. Consistent positive differences cause a positive intercept, whereas consistent negative differences (inferior performance) cause a negative intercept. With an intercept or nonzero constant, the earlier equation becomes

$$R_{jt} - RFR_t = a_j + a_j [R_{mt} - RFR_t] + e_{jt}$$

In Equation, the  $a_j$  value indicates whether the portfolio manager is superior or inferior in market timing and/or stock selection. A superior manager has a significant positive  $a_j$  (or "alpha") value because of the consistent positive residuals. In contrast, an inferior manager's returns consistently fall short of expectations based on the CAPM model giving consistently negative residuals. In such a case,  $a_j$  is a significant negative value.

The performance of a portfolio manager with no forecasting ability but not clearly inferior equals that of a naive buy-and-hold policy. In the equation, because the rate of return on such a portfolio typically matches the returns you expect, the residual returns generally are randomly positive and negative. This gives a constant term that differs insignificantly from zero, indicating that the portfolio manager basically matched the market on a risk-adjusted basis. Therefore, the  $a_j$  represents how much of the rate of return on the portfolio is attributable to the manager's ability to derive above-average returns adjusted for risk. Superior risk-adjusted returns indicate that the manager is good at either predicting market turns, or selecting undervalued issues for the portfolio, or both.

## 22.7 Self-Check Questions

1. Question 1: What is the primary purpose of portfolio performance evaluation?
  - a. To predict future market trends
  - b. To assess the risk tolerance of investors

- c. To measure the effectiveness of investment decisions
  - d. To determine the overall economic conditions
2. Question 2: Which metric is commonly used to measure risk-adjusted portfolio performance?
    - a. Standard Deviation
    - b. Sharpe Ratio
    - c. Beta
    - d. Alpha
  3. Question 3: How does the Treynor Ratio differ from the Sharpe Ratio in portfolio evaluation?
    - a. Treynor Ratio considers only systematic risk, while Sharpe Ratio considers total risk.
    - b. Sharpe Ratio focuses on systematic risk, while Treynor Ratio considers total risk.
    - c. Treynor Ratio considers only unsystematic risk, while Sharpe Ratio considers total risk.
    - d. Both ratios are identical in their risk considerations.
  4. Question 4: What does the Information Ratio assess in portfolio performance evaluation?
    - a. Consistency of returns
    - b. Market timing ability
    - c. Manager's skill in utilizing information
    - d. Correlation with benchmark returns
  5. Question 5: In portfolio evaluation, what does a positive Jensen's Alpha indicate?
    - a. The portfolio has outperformed the market.
    - b. The portfolio has underperformed the market.
    - c. The portfolio has low risk.
    - d. The portfolio has high volatility.

#### **22.8 Short Questions**

1. How does the Sharpe Ratio contribute to assessing portfolio performance?
2. What does the Treynor Ratio measure in the context of portfolio evaluation?
3. How is Jensen's Alpha used in determining the success of a portfolio manager?
4. What role does the Information Ratio play in evaluating a portfolio manager's performance?

#### **22.9 Long Questions**

1. How does the Sortino Ratio differ from the Sharpe Ratio in evaluating risk-adjusted returns?
2. What does the Tracking Error measure in portfolio performance assessment?
3. In portfolio evaluation, what does a positive Information Ratio indicate?
4. How is the Time-Weighted Rate of Return calculated for portfolio performance analysis?

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#### **22.11 Answer to Self-Check Questions**

1. c. To measure the effectiveness of investment decisions
2. b. Sharpe Ratio
3. a. Treynor Ratio considers only systematic risk, while Sharpe Ratio considers total risk.
4. c. Manager's skill in utilizing information
5. a. The portfolio has outperformed the market.

