FINANCIAL MANAGEMENT

PART 2

CPA SECTION 3

CCP SECTION 3

CS SECTION 3

STUDY TEXT

PAPER NO. 8 FINANCIAL MANAGEMENT

GENERAL OBJECTIVES

This paper is intended to equip the candidate with knowledge, skills and attitudes that will enable him/her to apply financial management techniques in business

8.0 LEARNING OUTCOMES

A candidate who passes this paper should be able to:

- Analyse the sources of finance for an organisation
- Evaluate various investment decision scenarios available to an organisation
- Appraise the performance of a business using financial tools
- Evaluate the current developments in business financing strategies
- Formulate the capital structure for a firm
- Determine the future value of a firm

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- Nature and scope of finance
- Role of finance manager
- Finance functions
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- Measuring managerial performance, compensation and incentives

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- External and internal sources of funds
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TOPIC 1

OVERVIEW OF FINANCIAL MANAGEMENT

Introduction

Financial Management means planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds of the enterprise. It means applying general management principles to financial resources of the enterprise.

NATURE AND SCOPE OF FINANCE

1. Investment decisions includes investment in fixed assets (called as capital budgeting). Investment in current assets is also a part of investment decisions called as working capital decisions.
2. Financial decisions - They relate to the raising of finance from various resources which will depend upon decision on type of source, period of financing, cost of financing and the returns thereby.
3. Dividend decision - The finance manager has to take decision with regards to the net profit distribution. Net profits are generally divided into two:
    a. Dividend for shareholders- Dividend and the rate of it has to be decided.
    b. Retained profits- Amount of retained profits has to be finalized which will depend upon expansion and diversification plans of the enterprise.

Objectives of Financial Management

The financial management is generally concerned with procurement, allocation and control of financial resources of a concern. The objectives can be-

1. To ensure regular and adequate supply of funds to the concern.
2. To ensure adequate returns to the shareholders which will depend upon the earning capacity, market price of the share, expectations of the shareholders.
3. To ensure optimum funds utilization. Once the funds are procured, they should be utilized in maximum possible way at least cost.
4. To ensure safety on investment, i.e, funds should be invested in safe ventures so that adequate rate of return can be achieved.
5. To plan a sound capital structure-There should be sound and fair composition of capital so that a balance is maintained between debt and equity capital.

Functions of Financial Management

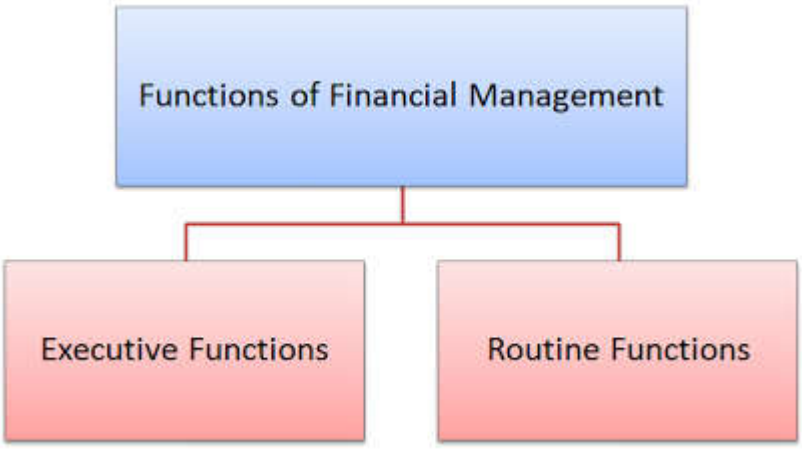
1. **Estimation of capital requirements:** A finance manager has to make estimation with regards to capital requirements of the company. This will depend upon expected costs and profits and future programmes and policies of a concern. Estimations have to be made in an adequate manner which increases earning capacity of enterprise.
2. **Determination of capital composition:** Once the estimation have been made, the capital structure have to be decided. This involves short- term and long- term debt equity analysis. This will depend upon the proportion of equity capital a company is possessing and additional funds which have to be raised from outside parties.
3. **Choice of sources of funds:** For additional funds to be procured, a company has many choices like-
    a. Issue of shares and debentures
    b. Loans to be taken from banks and financial institutions
    c. Public deposits to be drawn like in form of bonds.

    Choice of factor will depend on relative merits and demerits of each source and period of financing.

4. **Investment of funds:** The finance manager has to decide to allocate funds into profitable ventures so that there is safety on investment and regular returns is possible.
5. **Disposal of surplus:** The net profits decision have to be made by the finance manager. This can be done in two ways:
    a. Dividend declaration - It includes identifying the rate of dividends and other benefits like bonus.
    b. Retained profits - The volume has to be decided which will depend upon expansional, innovational, diversification plans of the company.
6. **Management of cash:** Finance manager has to make decisions with regards to cash management. Cash is required for many purposes like payment of wages and salaries, payment of electricity and water bills, payment to creditors, meeting current liabilities, maintainance of enough stock, purchase of raw materials, etc.
7. **Financial controls:** The finance manager has not only to plan, procure and utilize the funds but he also has to exercise control over finances. This can be done through many techniques like ratio analysis, financial forecasting, cost and profit control, etc.

ROLE OF FINANCE MANAGER

The functions of Financial Manager can broadly be divided into two: The Routine functions and the Executive/Managerial Functions.



1. Executive functions of financial management, and
2. Routine functions of financial management.
3. Estimating cash flow,
4. Investment decisions,
5. Allocation of surplus,
6. Deciding additional finance,
7. Negotiating for additional finance and
8. Checking the financial performance.

These executive functions of financial management (FM) are explained below.

1. **Estimating capital requirements** : The company must estimate its capital requirements (needs) very carefully. This must be done at the promotion stage. The company must estimate its fixed capital needs and working capital need. If not, the company will become over-capitalized or under-capitalized.
2. **Determining capital structure** : Capital structure is the ratio between owned capital and borrowed capital. There must be a balance between owned capital and borrowed capital. If the company has too much owned capital, then the shareholders will get fewer dividends. Whereas, if the company has too much of borrowed capital, it has to pay a lot of interest. It also has to repay the borrowed capital after some time. So the finance managers must prepare a balanced capital structure.
3. **Estimating cash flow** : Cash flow refers to the cash which comes in and the cash which goes out of the business. The cash comes in mostly from sales. The cash goes out for business expenses. So, the finance manager must estimate the future sales of the business. This is called Sales forecasting. He also has to estimate the future business expenses.

4. **Investment Decisions** : The business gets cash, mainly from sales. It also gets cash from other sources. It gets long-term cash from equity shares, debentures, term loans from financial institutions, etc. It gets short-term loans from banks, fixed deposits, dealer deposits, etc. The finance manager must invest the cash properly. Long-term cash must be used for purchasing fixed assets. Short-term cash must be used as a working capital.
5. **Allocation of surplus** : Surplus means profits earned by the company. When the company has a surplus, it has three options, viz.,
    1. It can pay dividend to shareholders.
    2. It can save the surplus. That is, it can have retained earnings.
    3. It can give bonus to the employees.
6. **Deciding additional finance** : Sometimes, a company needs additional finance for modernization, expansion, diversification, etc. The finance manager has to decide on following questions.
    1. When the additional finance will be needed?
    2. For how long will this finance be needed?
    3. From which sources to collect this finance?
    4. How to repay this finance?

    Additional finance can be collected from shares, debentures, loans from financial institutions, fixed deposits from public, etc
7. **Negotiating for additional finance** : The finance manager has to negotiate for additional finance. That is, he has to speak to many bank managers. He has to persuade and convince them to give loans to his company. There are two types of loans, viz., short-term loans and long-term loans. It is easy to get short-term loans from banks. However, it is very difficult to get long-term loans.
8. **Checking the financial performance** : The finance manager has to check the financial performance of the company. This is a very important finance function. It must be done regularly. This will improve the financial performance of the company. Investors will invest their money in the company only if the financial performance is good. The finance manager must compare the financial performance of the company with the established standards. He must find ways for improving the financial performance of the company.

The routine functions are also called as **Incidental Functions**.

Routine functions are clerical functions. They help to perform the Executive functions of financial management.

The six routine functions of financial management are listed below.

1. Supervision of cash receipts and payments.
2. Safeguarding of cash balances.
3. Safeguarding of securities, insurance policies and other valuable papers.
4. Taking proper care of mechanical details of financing.
5. Record keeping and reporting.
6. Credit Management.

The finance manager will be involved with the managerial functions while the routine functions will be carried out by junior staff in the firm. He must however, supervise the activities of these junior staff.

FINANCE FUNCTIONS

The following explanation will help in understanding each finance function in detail

1. **Investment Decision**

   One of the most important finance functions is to intelligently allocate capital to long term assets. This activity is also known as capital budgeting. It is important to allocate capital in those long term assets so as to get maximum yield in future. Following are the two aspects of investment decision

   a. Evaluation of new investment in terms of profitability
   b. Comparison of cut off rate against new investment and prevailing investment.

   Since the future is uncertain therefore there are difficulties in calculation of expected return. Along with uncertainty comes the risk factor which has to be taken into consideration. This risk factor plays a very significant role in calculating the expected return of the prospective investment. Therefore while considering investment proposal it is important to take into consideration both expected return and the risk involved.

   Investment decision not only involves allocating capital to long term assets but also involves decisions of using funds which are obtained by selling those assets which become less profitable and less productive. It wise decisions to decompose depreciated assets which are not adding value and utilize those funds in securing other beneficial assets. An opportunity cost of capital needs to be calculating while dissolving such assets. The correct cut off rate is calculated by using this opportunity cost of the required rate of return (RRR)

2. **Financial Decision**

   Financial decision is yet another important function which a financial manger must perform. It is important to make wise decisions about when, where and how should a business acquire funds. Funds can be acquired through many ways and channels. Broadly speaking a correct ratio of an equity and debt has to be maintained. This mix of equity capital and debt is known as a firm's capital structure.

   A firm tends to benefit most when the market value of a company's share maximizes this not only is a sign of growth for the firm but also maximizes shareholders wealth. On the other hand the use of debt affects the risk and return of a shareholder. It is more risky though it may increase the return on equity funds.

A sound financial structure is said to be one which aims at maximizing shareholders return with minimum risk. In such a scenario the market value of the firm will maximize and hence an optimum capital structure would be achieved. Other than equity and debt there are several other tools which are used in deciding a firm capital structure.

3. **Dividend Decision**

Earning profit or a positive return is a common aim of all the businesses. But the key function a financial manger performs in case of profitability is to decide whether to distribute all the profits to the shareholder or retain all the profits or distribute part of the profits to the shareholder and retain the other half in the business.

It's the financial manager's responsibility to decide a optimum dividend policy which maximizes the market value of the firm. Hence an optimum dividend payout ratio is calculated. It is a common practice to pay regular dividends in case of profitability Another way is to issue bonus shares to existing shareholders.

4. **Liquidity Decision**

It is very important to maintain a liquidity position of a firm to avoid insolvency. Firm's profitability, liquidity and risk all are associated with the investment in current assets. In order to maintain a tradeoff between profitability and liquidity it is important to invest sufficient funds in current assets. But since current assets do not earn anything for business therefore a proper calculation must be done before investing in current assets.

Current assets should properly be valued and disposed of from time to time once they become non profitable. Currents assets must be used in times of liquidity problems and times of insolvency.

GOALS OF THE FIRM

Financial goals of the firm

- **Profit-Maximization**

Microeconomic theory of the firm is founded on profit maximization as the principal decision criterion**:** markets managers of firms direct their efforts toward areas of attractive profit potential using market prices as their signals. Choices and actions that increase the firm's profit are undertaken while those that decrease profits are avoided. To maximize profits the firm must maximize output for a given set of scarce resources, or equivalently, minimize the cost of producing a given output.

Applying Profit-Maximization Criterion in Financial Management

Financial management is concerned with the efficient use of one economic resource, namely, capital funds. The goal of profit maximization in many cases serves as the basic decision criterion for the financial manager but needs transformation before it can provide the financial manger with an operationally useful guideline. As a benchmark to be aimed at in practice, profit maximization has at least four shortcomings: it does not take account of risk; it does not take account of time value of money; it is ambiguous and sometimes arbitrary in its measurement; and it does not incorporate the impact of non-quantifiable events.

Uncertainty (Risk) The microeconomic theory of the firm assumes away the problem of uncertainty: When, as is normal, future profits are uncertain, the criteria of maximizing profits loses meaning as for it is no longer clear what is to be maximized. When faced with uncertainty (risk), most investors providing capital are risk averse. A good decision criterion must take into consideration such risk.

Timing Another major shortcoming of simple profit maximization criterion is that it does not take into account of the fact that the timing of benefits expected from investments varies widely. Simply aggregating the cash flows over time and picking the alternative with the highest cash flows would be misleading because money has time value. This is the idea that since money can be put to work to earn a return, cash flows in early years of a project's life are valued more highly than equivalent cash flows in later years. Therefore the profit maximization criterion must be adjusted to account for timing of cash flows and the time value of money.

Subjectivity and ambiguity A third difficulty with profit maximization concerns the subjectivity and ambiguity surrounding the measurement of the profit figure. The accounting profit is a function of many, some subjective, choices of accounting standards and methods with the result that profit figure produced from a given data base could vary widely.

Qualitative information Finally many events relevant to the firms may not be captured by the profit number. Such events include the death of a CEO, political development, and dividend policy changes. The profit figure is simply not responsive to events that affect the value of the investment in the firm. In contrast, the price of the firms share (which measures wealth of the shareholders of the company) will adjust rapidly to incorporate the likely impact of such events long before they are their effects are seen in profits.

- **Value Maximization**

Because of the reasons stated above, Value**-maximization** has replaced profit-maximization as the operational goal of the firm. By measuring benefits in terms of cash flows value maximization avoids much of the ambiguity of profits. By discounting cash flows over time using the concepts of compound interest, Value maximization takes account of both risk and the time value of money. By using the market price as a measure of value the value maximization criterion ensures that (in an efficient market) its metric is all encompassing of all relevant information qualitative and quantitative, micro and macro. Let us note here that value maximization is with respect to the interests of the providers of capital, who ultimately

are the owners of the firm. – The maximization of owners' wealth is the principal goal to be aimed at by the financial manager.

In many cases the wealth of owners will be represented by the market value of the firm's shares - that is the reason why maximization of shareholders wealth has become synonymous with maximizing the price of the company's stock. The market price of a firms stocks represent the judgment of all market participants as to the values of that firm - it takes into account present and expected future profits, the timing, duration and risk of these earnings, the dividend policy of the firm; and other factors that bear on the viability and health of the firm. Management must focus on creating value for shareholders. This requires Management to judge alternative investments, financing and assets management strategies in terms of their effects on shareholders value (share prices).

Non-financial goals

- **Social Responsibility and Ethics**

It has been argued that the unbridled pursuit of shareholders wealth maximization makes companies unscrupulous, anti social, enhances wealth inequalities and harms the environment. The proponents of this position argue that maximizing shareholders wealth should not be pursued without regard to a firm's corporate social responsibility. The argument goes that the interest of stakeholders other than just shareholders should be taken care of. The other stakeholders include creditors, employees, consumers, communities in which the firm operates and others. The firm will protect the consumer; pay fair wages to employees while maintaining safe working conditions, support education and be sensitive to the environment concerns such as clean air and water. A firm must also conduct itself ethically (high moral standards) in its commercial transactions.
Being socially responsible and ethical cost money and may detract from the pursuit of shareholders wealth maximization. So the question frequently posed is: is ethical behavior and corporate social responsibility inconsistent with shareholder wealth maximization?
In the long run, the firm has no choice but to act in socially responsible ways. It is argued that the corporation's very survival depend on it being socially responsible. The implementation of a pro-active ethics ad corporate social responsibility (CSR) program is believed to enhance corporate value. Such a program can reduce potential litigation costs, maintain a positive corporate image, build shareholder confidence, and gain the loyalty, commitment and respect of firm's stakeholders. Such actions conserve firm's cash flows and reduce perceived risk, thus positively effecting firm share price. It becomes evident that behavior that is ethical and socially responsible helps achieve firm's goal of owner wealth maximization.

- **Growth and expansion**

This is a major objective for small companies which seek to expand operations so as to enjoy economies of scale.

Difficulty of Achieving Shareholders Wealth Maximization

Two difficulties complicate the achievement of the goal of shareholder wealth maximization in modern corporations. These are caused by the agency relationships in a firm and the requirements of corporate social responsibility (As discussed above).

AGENCY THEORY CONCEPT, CONFLICTS AND RESOLUTIONS

An agency relationship is created when one party (principal) appoints another party (agent) to act on their (principals) behalf. The principal delegates decision making authority to the agent. In a firm agency relationship exists between;

1. Shareholders and management
2. Shareholders and creditors
3. Shareholders and the government
4. Shareholders and auditors

Shareholders and management
The separation of ownership and control in most modern corporations' causes a conflict of interest between the personal interest of appointed managers (agent) and the interests of the owners of the firms (principals).this conflict is known as the **agency conflict.**
The following are some decisions by managers which would result in a conflict with shareholders:

1. Managers may use corporate resources for personal use.
2. Managers may award themselves hefty pay rises
3. Managers may organize mergers which are intended for their benefit only and not for the benefit of shareholders.
4. Managers may take holidays and spend huge sums of company money.
5. Managers may use confidential information for their benefit(insider trading)

Resolution of conflict

1. Performance based remuneration
This will involve remunerating managers for actions they take that maximize shareholders wealth. The remuneration scheme should be restructured in order to enhance the harmonization of the interest of shareholders with those of management. Managers could be given bonuses, commissions for superior performance in certain periods.

2. Incurring agency costs
Agency costs refer to costs incurred by shareholders in trying to control management behaviour and actions and therefore minimize agency conflicts.
These costs include:

a. ***Monitoring costs.*** They arise as a result of mechanisms put in place to ensure interests of shareholders are met. They include cost of hiring external auditors, bonding assurance which is insurance taken out where the firm is compensated if manager commits an infringement, internal control system implementation.
b. ***Opportunity costs*** which are incurred either because of the benefit foregone from not investing in a riskier but more profitable investment or in the due to the delay in decision making as procedures have to be followed(hence, a timely decision will not be made)
c. ***Restructuring costs*** are those costs incurred in changing or altering an organizations structure so as to prevent undesirable management activities.
d. ***Board of directors***- a properly constituted board plays the oversight role on management for the shareholders.

3. Threat of corporate takeover
When management of a firm under performs this result in the shares of that firm being undervalued there is the threat of a hostile takeover. This threat acts to force managers to perform since should the firm be taken over they will be replaced.

4. Shareholders intervention
The shareholders as owners of the company have a right to vote. Hence, during the company's AGM the shareholders can unite to form a bloc that will vote as one for or against decisions by managers that hurt the company. This voting power can be exercised even when voting for directors. Shareholders could demand for an independent board of directors.

5. Legal protection
The companies act and bodies such as the capital markets authority have played their role in ensuring trying to minimize the agency conflict. Under the companies act, management and board of directors owe a duty of care to shareholders and as such can face legal liability for their acts of omission or commission that are in conflict with shareholders interests. The capital market authority also has corporate governance guidelines.

6. Use of corporate governance principles which specify the manner in which organizations are controlled and managed. The duties and rights of all stakeholders are outlined.

7. Stock option schemes for managers could be introduced. These entitle a manager to purchase from the company a specified number of common shares at a price below market price over duration. The incentive for managers to look at shareholders interests and not their own is that, if they deliver and the company's share price appreciates in the stock market then they will make a profit from the sale.

8. Labour market actions such as hiring tried and tested professional managers and firing poor performers could be used. The concept of 'head hunting' is fast catching on in Kenya as a way of getting the best professional managers and executives in the market but at a fee of course.

Shareholders vs. creditors

In this relationship the shareholders (agent) are expected to manage the credit funds provided by the creditors (principal). The shareholders manage these funds through management. Debt providers/creditors are those who provide loan and credit facilities to the firm. They do this after gauging the riskiness of the firm.
The following actions by shareholders through management could lead to a conflict between them and creditors

1. **Shareholders could invest in very risky projects-**The management under the directive of the shareholders may undertake highly risky investments than those anticipated by the providers of long term debt finance. The creditors would not be interested in highly risky projects because they stand to lose their funds when the investments collapse. Even if the risky projects succeed they would not benefit because they only get a fixed rate of return.
2. **The dividend payments to shareholders could be very high-**An increase in the dividend rate in most cases is financed by a decrease in investments. This in turn reduces the value of bonds. If the firm is liquidating and it pays a liquidating dividend to its shareholders, the providers of capital could be left with worthless claims.
3. Default on interest payments to bondholders
4. Shareholders could organize mergers which are not beneficial to creditors
5. Shareholders could acquire additional debt that increases the financial risk of the firm
6. Manipulation of financial statements so as to mislead creditors
7. Shareholders could dispose of assets which are security for the credit given
8. Under investments-The shareholders may invest in projects with a negative net present value.
9. The shareholders may adopt an aggressive management of working capital. This may bring conflicts in liquidity position of the firm and would not be in the interest of the debt holders

Resolution of this conflict

1. Restrictive covenants- these are agreements entered into between the firm and the creditors to protect the creditor's interests.

   These covenants may provide restrictions/control over:
   i. Asset based covenants- These states that the minimum asset base to be maintained by the firm.
   ii. Liability based covenant- This limits the firm's ability to incur more debt.
   iii. Cashflow based covenant- States minimum working capital to be held by the firm. This may restrict the amount of dividends to be paid in future.
   iv. Control based covenant – Limits management ability to make various decisions e.g. providers of debt fund may require to be represented in the BOD meetings.

2. Creditors could also offer loans but at above normal interest rates so as to encourage prompt payment
3. Having a callability clause to the effect that a loan could be re-called if the conflict of interest is severe
4. Legal action could also be taken against a company
5. Incurring agency costs such as hiring external auditors
6. Use of corporate governance principles so as to minimize the conflict.

Shareholders and the government

The shareholders operate in an environment using the license given by the government. The government expects the shareholders to conduct their business in a manner which is beneficial to the government and the society at large.
The government in this agency relationship is the principal and the company is the agent. The company has to collect and remit the taxes to the government. The government on the other hand creates a conducive investment environment for the company and then shares in the profits of the company in form of taxes. The shareholders may take some actions which may conflict the interest of the government as the principal.

These may include;

(a) The company may involve itself in illegal business activities
(b) The shareholders may not create a clear picture of the earnings or the profits it generates in order to minimize its tax liability.(tax evasion)
(c) The business may not response to social responsibility activities initiated by the government
(d) The company fails to ensure the safety of its employees. It may also produce sub standard products and services that may cause health concerns to their consumers.
(e) The shareholders may avoid certain types of investment that the government covets.

Solutions to this agency problem

(i) The government may incur costs associated with statutory audit, it may also order investigations under the company's act, the government may also issue VAT refund audits and back duty investigation costs to recover taxes evaded in the past.
(ii) The government may insure incentives in the form of capital allowances in some given areas and locations.
(iii) Legislations: the government issues a regulatory framework that governs the operations of the company and provides protection to employees and customers and the society at large.ie laws regarding environmental protection, employee safety and minimum wages and salaries for workers.
(iv) The government encourages the spirit of social responsibility on the activities of the company.
(v) The government may also lobby for the directorship in the companies that it may have interest in. i.e. directorship in companies such as KPLC, Kenya Re. etc

Shareholders and auditors

Auditors are appointed by shareholders to monitor the performance of management.
They are expected to give an opinion as to the true and fair view of the company's financial position as reflected in the financial statements that managers prepare. The agency conflict arises if auditors collude with management to give an unqualified opinion (claim that the financial statements show a true and fair view of the financial position of the firm) when in fact they should have given a qualified opinion (that the financial statements do not show a true and fair view). The resolution of this conflict could be through legal action, removal from office, use of disciplinary actions provided for by regulatory bodies such as ICPAK.

MEASURING MANAGERIAL PERFORMANCE, COMPENSATION AND INCENTIVES

MANAGERIAL INCENTIVES

Compensation, contracts particularly incentives and bonuses plans provide important direction and motivation for top manager.
Executive incentive schemes should be competitive to attract and retain high quality managers.

i) Communicate and reinforce key priorities in firms by linking bonuses to key performance
measures.
ii) Encourage performance evaluation by rewarding good performance of managers.

Forms of bonuses

They vary from one organization to the other and payments can be made in:-

a) Cash /Shares of the company
b) Stock options
c) Performance shares
d) Stock appreciation rights

Bonuses can also be made:-

i) Contingent to corporate result or divisional profits.
ii) Be based on annual performance or performance over a number of years.

A. CASH /SHARES

Company profit and individual performance forms the basis used to determine the amounts of bonuses.
These are current bonuses paid in cash (monetary consideration or shares ie ownership consideration). They reward executive on short term performance therefore there is a risk

of promoting a pre-occupation with short term results which will affect long term interest.

Normally they are based on fixed percentages if corporate or divisional profits exceed a certain amount e.g. a bonus of 5% if profits exceed Sh. 10 million etc.

Advantages

i. Bonus can be reduced or eliminated during periods of poor performance.
ii. Share compensation creates a good relationship between manager and shareholders.
iii. Good performance will be encouraged since rewards are related to performance.

Disadvantages

i. Bonuses will bring tax issues and therefore if given in shares, managers will have to look for money to pay taxes
ii. Significant share ownership by managers may lead to risk averse behaviors.

B. STOCK OPTIONS

A stock option gives managers the right to purchase company shares at a future date and at a price established when the option was granted. With stock options it will be assumed that managers will attempt to influence long term performance rather than short term. Managers will want share price to appreciate so that they make capital gains when they exercise their option.

Advantages

i. Managers are encouraged to make long term decisions that will maximize value of the firm
ii. It encourages managers to reduce risks behaviour and undertake riskier projects with higher payoffs.

Disadvantages

i. Some events not directly under control of managers may affect share prices eg political climate, competition etc.
ii. They have no apparent tax benefits to the company or managers.

C. PERFORMANCE SHARE

These are shares given by the company to managers/ employees if they attain a specific level of performance. The main target is to attain a certain level of performance for a number of years.

Executives receive rewards for maintaining a consistent performance or exceeding the performance level. Performance shares are also referred to as executive share ownership plans (ESOPS)

They have same advantages and disadvantages as stock options. However, they have an

additional problem of basing performance on profit measures which may promote creative accounting or short term decisions which may not improve value of the firm.

D. STOCK APPRECIATION RIGHTS

These are deferred cash payments based on the increase in stock price from the time of their award to the time of payment. Managers will be rewarded for appreciation in share price. Therefore the value/ the amount of business will be a function of future share price. Managers will be encouraged to make decisions that maximize share price and hence their bonuses.

Executive compensation and agent relationship

Managers are agents of shareholders. The shareholders delegate decision making authority to managers. Managers are hired by top management or directors to manage the firm or divisions for decentralized units. In agency relationship there is an assumption that managers look at financial compensation and wealth maximization as well as other items that will come with the job e.g. rewards. Managers will not prefer hard work and will therefore require incentives to reduce agency conflicts. Incentive compensation is designed to harmonize interest of owners and managers; however divergence of interest will always occur due to;

- risk attitude of managers;
- Existence of private information available to managers etc.

Owners need to monitor manager's actions by incurring agency costs. Agency cost is the sum of the costs of incentive compensation i.e. cost of monitoring managers behavior etc.

TOPIC 2

SOURCE OF FUNDS

Introduction

Sources of finance mean the ways for mobilizing various terms of finance to the industrial concern. Sources of finance state that, how the companies are mobilizing finance for their requirements. The companies belong to the existing or the new which need sum amount of finance to meet the long-term and short-term requirements such as purchasing of fixed assets, construction of office building, purchase of raw materials and day-to-day expenses.

Sources of finance may be classified under various categories according to the following important heads:

Based on the Period

Sources of Finance may be classified under various categories based on the period.

Long-term sources: Finance may be mobilized by long-term or short-term. Whenthe finance mobilized with large amount and the repayable over the period will be more than five years, it may be considered as long-term sources. Share capital, issue of debenture, long-term loans from financial institutions and commercial banks come under this kind of source of finance. Long-term source of finance needs to meet the capital expenditure of the firms such as purchase of fixed assets, land and buildings, etc.

Long-term sources of finance include:

- Equity Shares
- Preference Shares
- Debenture
- Long-term Loans
- Fixed Deposits

Short-term sources: Apart from the long-term source of finance, firms can generate finance with the help of short-term sources like loans and advances from commercial banks, moneylenders, etc. Short-term source of finance needs to meet the operational expenditure of the business concern.

Short-term source of finance include:

- Bank Credit
- Customer Advances
- Trade Credit
- Factoring
- Public Deposits
- Money Market Instruments

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Based on Sources of Generation

Sources of Finance may be classified into various categories based on the period.

Internal source of finance includes

- Retained earnings
- Depreciation funds
- Surplus

External sources of finance may be include

- Share capital
- Debenture
- Public deposits
- Loans from Banks and Financial institutions

FACTORS TO CONSIDER WHEN SELECTING SOURCE OF FUNDS

1. **Cost:** Every source of finance carries some cost with it, known as cost of capital. While we talk about debt financing, other than lenders expectation, advantage of tax deductibility indirectly lowers down the cost of debt. The interest rate or coupon rate is the cost paid by the business for using the debt capital. When the costs of two broad sources are compared, debt turns out to be a cheaper source of finance, since the financial charges of debt is a tax deductable expense whereas dividend is not

   For e.g. If the Interest paid for long term debt is 10% (D) and tax rate is 50%(t), the effective cost for such debt to business is:

   D (1-t) = 10(1-50%) = 5%

2. **Risk:** A business is exposed to various kinds of risks. These risks should be considered while deciding on source of finance. **For e.g.** in case, a firm relies majorly on debt financing, then they are said to be highly leveraged as it bears high financial

risk. That is, if debt repayments are not made on time this can lead to legal action and hence there is a risk of bankruptcy. High financial leverage also effects the earning per share. So, for deciding an optimal capital structure a company should analyze the degree of leverage that it can tolerate.

3. **Controlling:** Controlling and management in the hands of the owner dilutes with more and more equity introduced from outside in business. Promoters or owners who do not want to lose the control of business and prefer to keep major decision making in their hand, will consider equity financing only up to certain level.

4. **Flexibility:** It plays an important role in deciding the capital structure. A firm functions in a dynamic business environment today. It should be able to respond to sudden shocks to its cash flows stream. A highly leveraged firm may face shortage of cash during adverse conditions, which may lead to sale of assets etc for generation of cash. Also, in extreme cases, a firm may have to take a step of capital restructuring or even liquidation on the worst side.

5. **Floatation cost,** which is high in case of equity.

6. **Regulatory rules** of various bodies also need to be adhered. In case of market listing (IPO), rules framed by respective legal bodies of different countries have to comply by.

LONG TERM AND SHORT TERM SOURCES OF FUNDS

LONG TERM SOURCES OF FINANCE

Long term sources of finance are those that are needed over a longer period of time - generally over ten years. The reasons for needing long term finance are generally different to those relating to short term finance.

Long term finance may be needed to fund expansion projects - maybe a firm is considering setting up new offices outside Nairobi say in Mombasa city, it might want to buy new premises in another part of the Kenya, develop a new product or it wants to buy another company. The methods of financing these types of projects will generally be quite complex and can involve billions of shillings.

i) Equity/ordinary share capital

Equity Shares also known as ordinary shares, which means, other than preference shares. Equity shareholders are the real owners of the company. They have a control over the management of the company. Equity shareholders are eligible to get dividend if the company earns profit. Equity share capital cannot be redeemed during the lifetime of the company. The liability of the equity shareholders is the value of unpaid value of shares.

Features of ordinary Shares

Ordinary shares consist of the following important features:

1. **Maturity of the shares:** ordinary shares have permanent nature of capital, which has no maturity period. It cannot be redeemed during the lifetime of the company.
2. **Residual claim on income:** ordinary shareholders have the right to get income left after paying fixed rate of dividend to preference shareholder. The earnings or the income available to the shareholders is equal to the profit after tax minus preference dividend.
3. **Residual claims on assets:** If the company wound up, the ordinary or equity shareholders have the right to get the claims on assets. These rights are only available to the ordinary shareholders.
4. **Right to control:** ordinary shareholders are the real owners of the company. Hence, they have power to control the management of the company and they have power to take any decision regarding the business operation.
5. **Voting rights:** ordinary shareholders have voting rights in the meeting of the company with the help of voting right power; they can change or remove any decision of the business concern. Ordinary shareholders only have voting rights in the company meeting and also they can nominate proxy to participate and vote in the meeting instead of the shareholder.
6. **Pre-emptive right:** ordinary shareholder pre-emptive rights. The pre-emptive right is the legal right of the existing shareholders. It is attested by the company in the first opportunity to purchase additional equity shares in proportion to their current holding capacity.
7. **Limited liability:** ordinary shareholders are having only limited liability to the value of shares they have purchased. If the shareholders are having fully paid up shares, they have no liability. For example: If the shareholder purchased 100 shares with the face value of sh. 10 each. He paid only sh. 900. His liability is only sh. 100.

   Total number of shares 100 Face value of shares sh. 10

Total value of shares	100 × 10 = 1,000
Paid up value of shares	900
Unpaid value/liability	100

   Liability of the shareholders is only unpaid value of the share (that is sh. 100).

Advantages of ordinary Shares

Ordinary shares are the most common and universally used shares to mobilize finance for the company. It consists of the following advantages.

1. **Permanent sources of finance:** ordinary share capital is belonging to long-term permanent nature of sources of finance; hence, it can be used for long-term or fixed capital requirement of the business concern.

2. **Voting rights:** ordinary shareholders are the real owners of the company who have voting rights. This type of advantage is available only to the equity shareholders.
3. **No fixed dividend:** ordinary shares do not create any obligation to pay a fixed rate of dividend. If the company earns profit, equity shareholders are eligible for profit, they are eligible to get dividend otherwise, and they cannot claim any dividend from the company.
4. **Less cost of capital:** Cost of capital is the major factor, which affects the value of the company. If the company wants to increase the value of the company, they have to use more share capital because, it consists of less cost of capital (K_e) while compared to other sources of finance.
5. **Retained earnings:** When the company have more share capital, it will be suitable for retained earnings which are the less cost sources of finance while compared to other sources of finance.

Disadvantages of Ordinary Shares

1. **Irredeemable:** ordinary shares cannot be redeemed during the lifetime of the business concern. It is the most dangerous thing of over capitalization.
2. **Obstacles in management:** ordinary shareholder can put obstacles in management by manipulation and organizing themselves. Because, they have power to contrast any decision which are against the wealth of the shareholders.
3. **Leads to speculation:** ordinary shares dealings in share market lead to secularism during prosperous periods.
4. **Limited income to investor:** The Investors who desire to invest in safe securities with a fixed income have no attraction for ordinary shares.
5. **No trading on equity:** When the company raises capital only with the help of equity, the company cannot take the advantage of trading on equity.

PREFERENCE SHARES

The parts of corporate securities are called as preference shares. It is the shares, which have preferential right to get dividend and get back the initial investment at the time of winding up of the company. Preference shareholders are eligible to get fixed rate of dividend and they do not have voting rights.

Preference shares may be classified into the following major types:

1. **Cumulative preference shares:** Cumulative preference shares have right to claim dividends for those years which have no profits. If the company is unable to earn profit in any one or more years, C.P. Shares are unable to get any dividend but they have right to get the comparative dividend for the previous years if the company earned profit.
2. **Non-cumulative preference shares:** Non-cumulative preference shares have no right

to enjoy the above benefits. They are eligible to get only dividend if the company earns profit during the years. Otherwise, they cannot claim any dividend.

3. **Redeemable preference shares:** When, the preference shares have a fixed maturity period it becomes redeemable preference shares. It can be redeemable during the lifetime of the company. The Company Act has provided certain restrictions on the return of the redeemable preference shares.

Irredeemable Preference Shares

Irredeemable preference shares can be redeemed only when the company goes for liquidator. There is no fixed maturity period for such kind of preference shares.

Participating Preference Shares

Participating preference shareholders' have right to participate extra profits after distributing the equity shareholders.

Non-Participating Preference Shares

Non-participating preference shareholders' are not having any right to participate extra profits after distributing to the equity shareholders. Fixed rate of dividend is payable to the type of shareholders.

Convertible Preference Shares

Convertible preference shareholders' have right to convert their holding into equity shares after a specific period. The articles of association must authorize the right of conversion.

Non-convertible Preference Shares

There shares, cannot be converted into equity shares from preference shares.

Features of Preference Shares

The following are the important features of the preference shares:

1. **Maturity period:** Normally preference shares have no fixed maturity period except in the case of redeemable preference shares. Preference shares can be redeemable only at the time of the company liquidation.
2. **Residual claims on income:** Preferential shareholders have a residual claim on income. Fixed rate of dividend is payable to the preference shareholders.
3. **Residual claims on assets:** The first preference is given to the preference shareholders at the time of liquidation. If any extra Assets are available that should be distributed to equity shareholder.
4. **Control of Management:** Preference shareholder does not have any voting rights. Hence, they cannot have control over the management of the company.

Advantages of Preference Shares

Preference shares have the following important advantages.

1. **Fixed dividend:** The dividend rate is fixed in the case of preference shares. It is called as fixed income security because it provides a constant rate of income to the investors.
2. **Cumulative dividends:** Preference shares have another advantage which is called cumulative dividends. If the company does not earn any profit in any previous years, it can be cumulative with future period dividend.
3. **Redemption:** Preference Shares can be redeemable after a specific period except in the case of irredeemable preference shares. There is a fixed maturity period for repayment of the initial investment.
4. **Participation:** Participative preference shareholders can participate in the surplus profit after distribution to the equity shareholders.
5. **Convertibility:** Convertibility preference shares can be converted into equity shares when the articles of association provide such conversion.

Disadvantages of Preference Shares

1. **Expensive sources of finance:** Preference shares have high expensive source of finance while compared to equity shares.
2. **No voting right:** Generally preference shareholders do not have any voting rights. Hence they cannot have the control over the management of the company.
3. **Fixed dividend only:** Preference shares can get only fixed rate of dividend. They may not enjoy more profits of the company.
4. **Permanent burden:** Cumulative preference shares become a permanent burden so far as the payment of dividend is concerned. Because the company must pay the dividend for the unprofitable periods also.
5. **Taxation:** In the taxation point of view, preference shares dividend is not a deductible expense while calculating tax. But, interest is a deductible expense. Hence, it has disadvantage on the tax deduction point of view.

DEFERRED SHARES

Deferred shares also called as founder shares because these shares were normally issued to founders. The shareholders have a preferential right to get dividend before the preference shares and equity shares. According to Companies Act 1956 no public limited company or which is a subsidiary of a public company can issue deferred shares.

These shares were issued to the founder at small denomination to control over the management by the virtue of their voting rights.

NO PAR SHARES

When the shares are having no face value, it is said to be no par shares. The company issues this kind of shares which is divided into a number of specific shares without any specific denomination. The value of shares can be measured by dividing the real net worth of the company with the total number of shares.

$$\text{Value of no. per share} = \frac{\text{The real net worth}}{\text{Total no. of shares}}$$

Debentures

A Debenture is a document issued by the company. It is a certificate issued by the company under its seal acknowledging a debt.

According to the Companies Act 1956, "debenture includes debenture stock, bonds and any other securities of a company whether constituting a charge of the assets of the company or not."

Types of Debentures

Debentures may be divided into the following major types:

1. **Unsecured debentures:** Unsecured debentures are not given any security on assets of the company. It is also called simple or naked debentures. These types of debentures are treated as unsecured creditors at the time of winding up of the company.
2. **Secured debentures:** Secured debentures are given security on assets of the company. It is also called as mortgaged debentures because these debentures are given against any mortgage of the assets of the company.
3. **Redeemable debentures:** These debentures are to be redeemed on the expiry of a certain period. The interest is paid periodically and the initial investment is returned after the fixed maturity period.
4. **Irredeemable debentures:** These kind of debentures cannot be redeemable during the life time of the business concern.
5. **Convertible debentures:** Convertible debentures are the debentures whose holders have the option to get them converted wholly or partly into shares. These debentures are usually converted into equity shares. Conversion of the debentures may be:
   Non-convertible debentures Fully convertible debentures Partly convertible debentures
6. **Other types:** Debentures can also be classified into the following types. Some of the common types of the debentures are as follows:
   1. Collateral Debenture
   2. Guaranteed Debenture
   3. First Debenture
   4. Zero Coupon Bond
   5. Zero Interest Bond/Debenture

Features of Debentures

1. **Maturity period:** Debentures consist of long-term fixed maturity period. Normally, debentures consist of 10–20 years maturity period and are repayable with the principle investment at the end of the maturity period.
2. **Residual claims in income:** Debenture holders are eligible to get fixed rate of interest at every end of the accounting period. Debenture holders have priority of claim in income of the company over equity and preference shareholders.
3. **Residual claims on asset:** Debenture holders have priority of claims on Assets of the company over equity and preference shareholders. The Debenture holders may have either specific change on the Assets or floating change of the assets of the company. Specific change of Debenture holders are treated as secured creditors and floating change of Debenture holders are treated as unsecured creditors.
4. **No voting rights:** Debenture holders are considered as creditors of the company. Hence they have no voting rights. Debenture holders cannot have the control over the performance of the business concern.
5. **Fixed rate of interest:** Debentures yield fixed rate of interest till the maturity period. Hence the business will not affect the yield of the debenture.

Advantages of Debenture

Debenture is one of the major parts of the long-term sources of finance which of consist the following important advantages:

1. **Long-term sources:** Debenture is one of the long-term sources of finance to the company. Normally the maturity period is longer than the other sources of finance.
2. **Fixed rate of interest:** Fixed rate of interest is payable to debenture holders, hence it is most suitable of the companies earn higher profit. Generally, the rate of interest is lower than the other sources of long-term finance.
3. **Trade on equity:** A company can trade on equity by mixing debentures in its capital structure and thereby increase its earnings per share. When the company applies the trade on equity concept, cost of capital will reduce and value of the company will increase.
4. **Income tax deduction:** Interest payable to debentures can be deducted from the total profit of the company. So it helps to reduce the tax burden of the company.
5. **Protection:** Various provisions of the debenture trust deed and the guidelines issued by the SEB1 protect the interest of debenture holders.

Disadvantages of Debenture

Debenture finance consists of the following major disadvantages:

1. **Fixed rate of interest:** Debenture consists of fixed rate of interest payable to securities. Even though the company is unable to earn profit, they have to pay the fixed rate of interest to debenture holders; hence, it is not suitable to those company earnings which fluctuate considerably.
2. **No voting rights:** Debenture holders do not have any voting rights. Hence, they cannot have the control over the management of the company.
3. **Creditors of the company:** Debenture holders are merely creditors and not the owners of the company. They do not have any claim in the surplus profits of the

company.

4. **High risk:** Every additional issue of debentures becomes more risky and costly on account of higher expectation of debenture holders. This enhanced financial risk increases the cost of equity capital and the cost of raising finance through debentures which is also high because of high stamp duty.
5. **Restrictions of further issues:** The company cannot raise further finance through debentures as the debentures are under the part of security of the assets already mortgaged to debenture holders.

DEBT FINANCE

Debt finance is a fixed return finance as the cost (interest) is fixed on the par value (face value of debt). It is ideal to use if there's a strong equity base. It is raised from external sources to qualifying companies and is available in limited quantities.

It is limited to:

i) Value of security.
ii) Liquidity situation in a given country. It is ideal for companies where gearing allows them to raise more debt and thus gearing level.

Loan finance – this is a common type of debt and is available in different terms usually short term. Medium term loans vary from 2 - 5 years. Long-term loans vary from 6 years and above

The terms are relative and depend on the borrower. This finance is used on the basis of Matching approach i.e. matching the economic life of the project to the term of the loan. It is prudent to use short-term loans for short-term ventures i.e. if a venture is to last 4 years generating returns, it is prudent to raise a loan of 4 years maturity period.

Conditions under Which Loans Are Ideal

a) When the company's gearing level is low (the level of outstanding loans is low.
b) The company's future cash flows (inflows and their stability) must be assured. The company must be able to repay the principal and the interest.
c) Economic conditions prevailing. The company must have a long-term forecast of the prevailing economic condition. Boom conditions are ideal for debt.
d) When the company's market share guarantees stable sales.
e) When the company's anticipated future expansion programs, justify such borrowing.

Requirements for Raising Loan

a) History of the company and its subsidiaries.
b) Names, ages, and qualifications of the company's directors.
c) The names of major shareholders – 51% plus i.e. owner who must give consent.
d) Nature of the products and product lines.
e) Publicity of the product.
f) Nature of the loan – either secured, floating or unsecured.
g) Cash flow forecast.

Reasons Why Commercial Banks Prefer To Lend Short Term Loans

a) Long-term forecasts are not only difficult but also vague as uncertainties tend to jeopardize planning e.g. political and economic factors.
b) Commercial banks are limited by the Central Bank of Kenya in their long term lending due to liquidity considerations.
c) Short-term loans are profitable. This is because interest is high as in overdrafts.
d) Long term finance loses value with time due to inflation.
e) Cost of finance – in the long term, the cost of finance may increase and yet they cannot pass such a cost to borrowers since the interest rate is fixed.
f) Commercial banks do credit analysis that is limited to short term situations.
g) Usually security market favours short term loans because there are very few long term securities and as such commercial banks prefer to lend short term due to security problems.

Advantages of Using Debt Finance

- Interest on debt is a tax allowable expense and as such it is reduced by the tax allowance.

Example

Interest = 10% tax rate = 30%

The effective cost of debt (interest) = Interest rate(1 – T)

= 10%(1-0.30)

= 7%

Consider companies A and B

Company	**A**	**B**
	Sh.'000'	**Sh.'000'**
10% debt	1,000	-
Equity	-	1,000
	1,000	1,000

The tax rate is 30% and earnings before interest and tax amount to Ksh.400,000. All earnings are paid out as dividends. Compute payable by each firm.

Company	**A**	**B**
	Sh.'000'	**Sh.'000'**
EBIT	400	400
Less interest 10% x 1,000	(100)	-
EBT	300	400
Less tax @ 30%	(90)	(120)
Dividends payable	210	280

Company A saves tax equal to Sh.30,000(120,000 – 90,000) since interest charges are tax allowable and reduce taxable income.

- The cost of debt is fixed regardless of profits made and as such under conditions of high profits the cost of debt will be lower.

- It does not call for a lot of formalities to raise and as such its ideal for urgent ventures
- It is usually self-sustaining in that the asset acquired is used to pay for its cost i.e. leaving the company with the value of the asset.
- In case of long-term debt, amount of loan declines with time and repayments reduce its burden to the borrower.
- Debt finance does not influence the company's decision since lenders don't participate at the AGM.

Disadvantages

- It is a conditional finance i.e. it is not invested without the approval of lender.
- Debt finance, if used in excess may interrupt the companies decision making process when gearing level is high, creditors will demand a say in the company i.e. and demand representation in the BOD.
- It is dangerous to use in a recession as such a condition may force the company into receivership due to lack of funds to service the loan.
- It calls for securities which are highly negotiable or marketable thus limiting its availability.
- It is only available for specific ventures and for a short term, which reduces its investment in strategic ventures.
- The use of debt finance may lower the value of a share if used excessively. It increases financial risk and required rate of return by shareholders thus reduce the value of shares.

Differences between Debt Finance and Ordinary Share Capital (Equity Finance)

	Ordinary share capital		**Debt**
a)	It is a permanent finance	a)	It is refundable (redeemable)
b)	Return paid when available	b)	It is fixed return capital
c)	Dividends are not tax allowable	c)	Interest on debt is a tax allowable
d)	Unsecured finance	d)	expense
e)	Carry voting rights	e)	Secured finance
f)	Reduces gearing ratio	f)	No voting right
g)	No legal obligation to pay	g)	Increases gearing ratio
h)	Has a residue claim	h)	A legal obligation to pay
i)	Owners' money	i)	Carries a superior claim
			Creditors finance.

Similarities between Preference and Equity Finance

a) Both may be permanent if preference share capital is redeemable (convertible).
b) Both are naked or unsecured finances.
c) Both are traded at the stock exchange
d) Both are raised by public limited companies only
e) Both carry residue claims after debt.
f) Both dividends are not a legal obligations for the company to pay.

Differences between Preference and Equity Finance

Ordinary share capital	Preference share capital
a) Has a residue claim both on assets and	a) Has a superior claim
b) profit	b) No voting rights
c) Carries voting rights	c) Increases the gearing ratio
d) Reduces the gearing ratio	d) Fixed dividends hence no growth
e) Variable dividends hence grow over time	e) Usually redeemable
f) Permanent finance	f) Not easily transferable
Easily transferable.	

Similarities between Debt and Preference Share Capital

a) Both have fixed returns.
b) Both will increase the company's gearing ratio.
c) Both are usually redeemable.
d) Both do not have voting rights.
e) Both may force the company into receivership
f) Both have superior claims over and above owners.
g) Both are external finances.
h) There is no growth with time.

Differences between Preference Share Capital and Debt

DEBT	PREFERENCE SHARE CAPITAL
a) Interest is tax allowable	a) Dividends are not tax allowable
b) Interest is a legal obligation	b) Dividends are not a legal obligation
c) Debt finance is always secured	c) Preference is not secured finance
d) Debt finance is a pre-conditional	d) Is not conditional finance
e) Has a superior claim	e) Has a residue claim (after debt)

Why it may be difficult for small companies to raise debt finance in Kenya (Say Jua Kali Companies)

- Lack of security
- Ignorance of finances available
- Most of them are risky businesses as there are no feasibility studies done (chances of failure have been put to 80%).
- Their size being small tends to make them UNKNOWN i.e. they are not a significant competitor to the big companies.
- Cost of finance may be high – their market share may not allow them to secure debt.
- Small loans are expensive to extend by bank i.e. administration costs are very high.
- Lack of business principles that are sound and difficult in evaluating their performance.

Solutions to the Above Problems

- There should be diversification of securities e.g. to accept guarantees.
- Education of such businessmen on sound business principles.
- The government should set up a special fund to assist the jua kali businessmen.
- Encourage formation of co-operative societies.
- To request bankers to follow up the use of these loans.

1. RETAINED EARNINGS

i) Revenue Reserves

These are undistributed earnings. Such reserves are retained for the following reasons:

- To make up for the fall in profits so as to sustain acceptable risks.
- To sustain growth through plough backs. They are cheap source of finance.
- They are used to boost the company's credit rating so they enable further finance to be obtained.
- It lowers the company's gearing ratio – reduces chances of receivership/liquidation.

ii) Capital Reserves

- It is raised by selling shares at a premium. (The difference between the market price (less floatation costs) and par value is credited to the capital reserve).
- Through revaluation of the company's assets. This leads to a fictitious entry which is of the nature of a capital reserve.
- By creation of a sinking fund.

Advantages of using retained earnings

a) The management of many companies believes that retained earnings are funds which do not cost anything, although this is not true. However, it is true that the use of retained earnings as a source of funds does not lead to a payment of cash.
b) The dividend policy of the company is in practice determined by the directors. From their standpoint, retained earnings are an attractive source of finance because investment projects can be undertaken without involving either the shareholders or any outsiders.
c) The use of retained earnings as opposed to new shares or debentures avoids issue costs.
d) The use of retained earnings avoids the possibility of a change in control resulting from an issue of new shares.

Another factor that may be of importance is the financial and taxation position of the company's shareholders. If, for example, because of taxation considerations, they would rather make a capital profit (which will only be taxed when shares are sold) than receive current income, then finance through retained earnings would be preferred to other methods.

Disadvantages of using retentions

a) Shareholders may be sensitive to the loss of dividends that will result from retention for re-investment, rather than paying dividends

b) Not so much a disadvantage as a misconception, that retained profits is cost-free method of obtaining funds. There is an opportunity cost in that if dividends were paid, the cash received could be invested by shareholders to earn a return.

A company must restrict its self-financing through retained profits because shareholders should be paid a reasonable dividend, in line with realistic expectations, even if the directors would rather keep the funds for re-investing. At the same time, a company that is looking for extra funds will not be expected by investors (such as banks) to pay generous dividends, nor over-generous salaries to owner-directors.

2. MORTGAGES

A mortgage is a loan specifically for the purchase of property. They are a specific type of secured loan. Companies place the title deeds of freehold or long leasehold property as security with an insurance company or mortgage broker and receive cash on loan, usually repayable over a specified period. Most organizations owning property which is unencumbered by any charge should be able to obtain a mortgage up to two thirds of the value of the property.

Some businesses might buy property through a mortgage. In many cases, mortgages are used as a security for a loan. This tends to occur with smaller businesses. The borrower can use their own property as security for the loan - it is often called taking out a second mortgage. If the business does not work out and the borrower could not pay the bank the loan then the bank has the right to take the home of the borrower and sell it to recover their money. Using a mortgage in this way is a very popular way of raising finance for small businesses but as you can see carries with it a big risk.

The companies or partnerships can get loans for long periods by mortgaging their assets with any mortgage brokers or any other financial institution. Freehold properties may be used for this purpose. It is an important source of long-term capital for commercial undertaking. Insurance com-panies, pension funds and finance companies are the main mortgagees. The mortgagor agrees to deposit the title to the asset with the mortgagee. The loans obtained by the mortgagor are to be repaid through installments over a specific period of time.

3.SALE AND LEASE BACK

A company or partnership which own its own premises or fixed assets can obtain finance by selling the property to an insurance company for immediate cash and renting it back.

As firms grow they build up assets. These assets could be in the form of property, machinery, equipment, other companies or even logos. In some cases it may be appropriate for a business to sell off some of these assets to finance other projects.

A company should enter into a sale and lease back agreement if it cannot raise capital in any other way. In this source of finance, a company can obtain full sales price and it can also continue to use the fixed asset. But the firm now has to pay a hire charge regularly for the period for which a lease agreement has been entered into.

4. DEBENTURE FINANCE

A form of long term debt raised after a company sells debenture certificates to the holder and raises finance in return. The term debenture has its origin from 'DEBOE' which means 'I owe' and is thus a certificate or document that evidences debt of long term nature whereby the person named therein will have given the issuing company the amount usually less than the total par value of the debenture. These debentures usually mature between 10 to 15 years but may be endorsed, negotiated, discounted or given as securities for loans in which case they will have been liquidated before their maturity date. The current interest rate is payable twice a year and it is a legal obligation.

CLASSIFICATION

i) Secured Debentures

These are those types of debentures which a company will secure usually in two ways, secured with a fixed charge or with a floating charge.

a) Fixed Charge – a debenture is secured with a fixed charge if it can claim on a specific asset.
b) Floating charge – if it can claim from any or all of the assets which have not been pledged as securities for any other form of debt.

ii) Naked Debentures

These are not secured by any of the company's assets and as such they are general creditors.

iii) Redeemable Debentures

These are the type of debentures, which the company can buy back after the minimum redemption period and before the maximum redemption period (usually 15 years) after which holders can force the company to receivership to redeem their capital and interest outstanding.

iv) Irredeemable Debentures (perpetuities)

These are never bought back in which case they form permanent source of finance for the company. However, these are rare and are usually sold by company's with a history of stable ordinary dividend record.

v) Classification according to convertibility

Convertible debentures – Can be converted into ordinary shares although they can also be converted into preference shares.

Conversion price = par value of a debenture/No. of shares to be received.

$$\text{Conversion ratio} = \frac{\text{Par value of debenture}}{\text{Par value of ordinary shares}}$$

Illustration

ABC Company Ltd books:

	Sh.
10.000, Sh.20 ordinary share capital	200,000
10,000, Shs.10 8% preference share capital	100,000
5,000, Shs.100 12% debentures	500,000

The above debentures are due for conversion:

Required;-

i) Compute the conversion price
ii) Compute the conversion ratio
iii) Compute new capital structure.

Solution

i)Conversion price = par value of debenture/No. of shares to be received.

No. of shares to be received = 100:20 = 5:1

Therefore = $\frac{100}{5} = 20$

ii) Conversion ratio = par value of debenture/par value of share = $\frac{100}{20} = 5.0$

Receive 5 ordinary shares for every 1 debenture held.

iii) New capital structure

No. of new ordinary shares	=	5000 x 5 =	25,000 Shs.
35,000, Shs.20 ordinary shares			700,000
10,000, Shs.10, 8% preference shares			100,000
Total capital			800,000

vi) Non-convertible debentures

These cannot be converted into ordinary preference shares and they are usually redeemable.

vii) Sub-ordinate debentures

Usually last for as long as 10 years and they are sold by financially strong companies. Such are not secured and they rank among general creditors in claiming on assets during liquidation. This means that they are sub-ordinate to senior debt but superior to ordinary and preference share capital.

Reasons behind Unpopularity of Debentures of Kenya's Financial Market:

i) Their par value is an extremely high value and as such they are unaffordable to purchase by would be investors.
ii) They are in most cases secured debt and as such constrain the selling company in so far as getting sufficient securities is difficult.
iii) Most of the would-be sellers have low credit worthiness which is difficult.
iv) Kenya's capital markets are not developed and as such there is no secondary debenture market where they can be discounted or endorsed.
v) Debentures finance is not known among the general business community and as such many would be sellers and buyers are ignorant of its existence.
vi) Being long term finance there are a few buyers who may be willing to stake their savings for a long period of time.

vii) Such finance calls for a fixed return, which in the long run will be eroded by inflation.

SHORT TERM SOURCES

Short term financial sources provide funds that may be used usually for less than three years. Sometimes these funds are available only for period of less than one year. These sources help for funding shortages in working capital. These sources should not be used to finance long term investments. These are discussed below:

1. BILLS OF EXCHANGE

Bills of Exchange are a source of finance in particular in the export trade. A bill of exchange is an unconditional order in writing addressed by one person to another requiring the person to whom it is addressed to pay to him as his order a specific sum of money. The commonest types of bills of exchange used in financing are accommodation bills of exchange. For a bill to be a legal document; it must be;-

a) Drawn by the drawer.
b) Bear a stamp duty
c) Acceptable by the drawee
e) Mature in time.

It is used to raise finance through:

i) Discounting it.
ii) Negotiating
iii) Giving it out as security.

Advantages of Using a Bill as a Source of Finance

- They are a faster means of raising finance (if drawer is credible).
- Is highly negotiable/liquid investment
- Does not require security
- Does not affect the gearing level of the company
- It is unconditional and can be invested flexibly
- It is useful as a source of finance to finance working capital
- It is used without diluting capital.

2. OVERDRAFT FINANCE

This finance is ideal to use as bridging finance in sense that it should be used to solve the company's short term liquidity problems in particular those of financing working capital (w.c.). It is usually a secured finance unless otherwise mentioned. Overdraft finance is an expensive source of finance and the over-reliance on it is a sign of financial imprudence as it indicates the inability to plan or forecast financial needs.

Advantages of Overdraft Finance

- It is useful in financial crisis which an accountant cannot forecast due to abrupt fall in profits thus liquidity problems.
- In some cases it may be secured on goodwill thus making it flexible finance.
- It does not entail preconditions and is therefore investible in high-risk situations when the firm does not have finance in normal circumstances.
- It is raised faster and as usual is ideal to invest in urgent ventures e.g. documentary investments e.g. treasury bonds, shares, treasury bills, housing bonds etc.
- If not used for a long period of time – it does not affect the company's gearing level and therefore does not relate to company's liquidation or receivership.
- Less formalities/procedures involved.

Disadvantages of Overdraft Finance

- It is expensive as the interest rates of overdrafts are much higher than bank rates.
- The use of this finance is an indication of poor financial management principle.
- It may be misused by management because it does not carry pre-conditions
- Being a short-term financial arrangement, it can be recalled at short notice leaving the company in financial crisis.

3. TRADE CREDIT

The use of credit from suppliers is a major source of finance. It is particularly important to small and fast growing firms. Trade credit is a cheap source of short term finance. It is also easy to obtain and it is a flexible source of financing. The only caution a company must exercise over trade credit is to avoid a situation of over-trading.

Trade credit has double edged significance for a firm. It is a source of credit for financing purchases and it is a use of funds to the extent that the firm finances credit sales to customers. The trade credit is convenient and informal source of short-term finance. A firm that does not qualify for credit from a financial institution may receive trade credit because previous experience has familiarized the seller with the credit worthiness of his customer.

4. FACTORING

Factoring means selling debts for immediate cash to a factor who charges commission. When the factor receives each batch of invoices from his client, he pays about 80% of its value in cash immediately. Factoring can result in savings to management in the form of savings in bad debt losses, salary costs, telephone, postage etc. This source of short term finance is not yet very popular in Kenya. This method was adopted in U.K. first time in 1959.

Factoring is normally under-taken with recourse. The factor must bear the loss in the event the person or firm which bought goods does not pay. The factoring firm will make an appraisal of the credit worthiness of each customer of the seller and set a Limit for each of these customers.

Aspects of factoring

The main aspects of factoring include the following.

a) Administration of the client's invoicing , sales accounting and debt collection services
b) Credit protection for client's debts, whereby the factor taKes over the risk of loss from bad debts and so 'insures' the client against losses. This is known as a non-recourse service. However, if the non-recourse service is provided the factor, not the firm, will decide what action to take against non –players.
c) Making payments to the client advance of collecting debts. This is sometimes referred to as 'factor finance' because the factor is providing cash to the client against outstanding debts.

Advantages of factoring

The benefits of factoring for a business customer include the following.

a) The business can pay it suppliers promptly, and so be able to take advantage of any early payment discounts that are available.
b) Optimum inventory levels can be maintained, because the business will have enough cash to pay for the inventories it needs.
c) Growth can be financed through sales rather than by injecting fresh external capital balance.
d) The business gets finance linked to its volume of sales. In contrast, overdraft limits tend to be determined by historical balance sheets.
e) The managers of business do not have to spend their time running its own sales department, and can use the expertise of debtor management that the factor has.

Disadvantages of Factoring

a) The cost of factoring will reduce the profit margin of the company
b) It may reduce the scope of borrowing as book debts will not be available as security
c) It may damage the reputation of the company with its customers
d) Factors may want vet the customers hence influence the way the way the firm does its business

5. PLASTIC MONEY (CREDIT CARD FINANCE)

This is finance of a kind whereby a company will make arrangements for the use of the services of credit card organizations (through the purchase of credit cards) in return for prompt settlement of bills on the card and a commission payable on all credit transactions. This is used to finance goods and services of working capital in nature such as the payment of fuel, spare-parts, medical and other general provisions and it is rare for it to finance raw materials or capital items.

Reasons behind the Fast Development of This Finance (Plastic Money) In Kenya

a) High incidences of fraud by dishonest employees has been responsible for development of this finance as it minimizes chances of this fraud because it eliminates the use of hard cash in the execution of transactions.

b) Risk associated with carrying of huge amounts of cash for purchases which cash is open to theft and misuse has also been responsible for development of this finance.
c) Credit cards have boosted the credibility of holder companies which enables them to obtain trade credits under conditions which would have otherwise been difficult.
d) Of late, Kenya has experienced emergence of elite, middle and high-income groups' in particular professionals who tend to use these cards as a symbol of status in execution of day to day transactions.
e) These cards have been used by financial institutions and banks to boost their deposit and attract long term clienteles e.g. Royal Card Finance, Standard Chartered.
f) A number of companies and establishments have acquired such cards as a means of settling their bills under certain times when their liquidity is low or when in financial crisis.

Limitations of Credit Cards as a Source of Finance

i) These cards leads to overspending on the part of the holder and as such may disorganise the organization's cash budget and cash planning.
ii) Limited as to the activities they can finance as they are ideal for financing working capital items and not fixed assets in which case they are not a profitable source of finance.
iii) They are expensive to obtain and maintain because of associated cost such as ledger fees, registration, insurance, commission expenses, renewal fees etc.
iv) It is a short-term source and is open only to a few establishments in which case a company can obtain goods and services from those establishments that can accept them.
v) Entail a lot of formalities to obtain e.g. guarantees, presentation of bank statements and even charging assets that are partially pledged to secure expenses that may be incurred using these cards.
vi) They may be misused by dishonest employees who may use them to defraud the organization off goods and services which may not benefit such organizations.
vii) Credit card organization may suspend the use of such cards without notice and this will inconvenience the holder who may not meet his/her ordinary needs obtained through these cards.

6. INVOICE DISCOUNTING

Invoice discounting is the purchase (by the provider of discounting services) of trade debts at a discount. Invoice discounting enables the company from which the debts are purchased to raise working capital. Invoice discounting is almost similar to factoring. It is the assignment of debts whereas the factoring is the selling of debts.

Invoice discounting is characterized by the fact that the lender not only has lien on the debts but also has recourse to the borrower (seller) if the firm or person that bought the goods does not pay. In this case, the loss is borne by the selling firm. Invoice discounting firms act as the agents of the seller. A client should only want to have some invoices

discounted when he has temporary cash shortage, and so invoice discounting tends to consist of one-off deals.

If a client needs to generate cash, he can approach a factor or invoice discounter, who will offer to purchase selected invoices and advance up to 75% of their value. At the end of each month, the factor will pay over the balance of the purchase price, less charges, on the invoices that have settled in the month. Features of invoice discounting

- The firm collects the debts and does the credit control
- The customers do not usually know about invoice discounting
- The invoice discounter will check regularly to see that the company's procedures are effective

Confidential invoice discounting is an arrangement whereby a debt is confidentially assigned to the factor, and the client's customer will only become aware of the arrangement if he does not pay his debt to the client.

7. HIRE PURCHASE

Hire purchase or installment credit is a method of paying for plant and machinery out of income rather than capital. The use of the equipment is gained on payment of the first installment. This source is relatively ex-pensive but it leaves other sources of finance for emergencies. Hire purchase is an increasingly important source of finance these days for the purchase of capital goods. In this method, the seller invoices the goods to the hire purchase company which agrees with the customer to receive the total amount and hire purchase interest in equal installments.

The hirer is required to pay these installments regularly. If he fails to pay these installments then tl1e asset can be repossessed. In Kenya, if the hirer fails to pay any installment before he clears two third of the total value of the asset then the hire purchase finance company can repossess this asset. The hirer will not get good title to the asset until he pays the final installment.

Hire purchase is a form of installment credit. Hire purchase is similar to leasing, with the exception that ownership of the goods passes to the hire purchase customer on payment of the final credit installment, whereas a lessee never becomes the owner of the goods.

Hire purchase agreements usually involve a finance house.

i) The supplier sells the goods to the finance house.
ii) The supplier delivers the goods to the customer who will eventually purchase them.
iii) The hire purchase arrangement exists between the finance house and the customer.

The finance house will always insist that the hirer should pay a deposit towards the purchase price. The size of the deposit will depend on the finance company's policy and its assessment

of the hirer. This is in contrast to a finance lease, where the lessee might not be required to make any large initial payment.
An industrial or commercial business can use hire purchase as a source of finance. With industrial hire purchase, a business customer obtains hire purchase finance from a finance house in order to purchase the fixed asset. Goods bought by businesses on hire purchase include company vehicles, plant and machinery, office equipment and farming machinery.

8. LEASE FINANCE

A lease is an agreement between two parties, the "lessor" and the "lessee". The lessor owns a capital asset, but allows the lessee to use it. The lessee makes payments under the terms of the lease to the lessor, for a specified period of time.
Leasing is, therefore, a form of rental. Leased assets have usually been plant and machinery, cars and commercial vehicles, but might also be computers and office equipment. There are two basic forms of lease: "operating leases" and "finance leases".

Operating leases

Operating leases are rental agreements between the lessor and the lessee whereby:

i) The lessor supplies the equipment to the lessee
ii) The lessor is responsible for servicing and maintaining the leased equipment
iii) The period of the lease is fairly short, less than the economic life of the asset, so that at the end of the lease agreement, the lessor can either lease the equipment to someone else, and obtain a good rent for it, or sell the equipment secondhand.

Finance leases

Finance leases are lease agreements between the user of the leased asset (the lessee) and a provider of finance (the lessor) for most, or all, of the asset's expected useful life.
Suppose that a company decides to obtain a company car and finance the acquisition by means of a finance lease. A car dealer will supply the car. A finance house will agree to act as lessor in a finance leasing arrangement, and so will purchase the car from the dealer and lease it to the company. The company will take possession of the car from the car dealer, and make regular payments (monthly, quarterly, six monthly or annually) to the finance house under the terms of the lease.

Other **important characteristics of a finance lease**:

i. The lessee is responsible for the upkeep, servicing and maintenance of the asset. The lessor is not involved in this at all.
ii. The lease has a primary period, which covers all or most of the economic life of the asset. At the end of the lease, the lessor would not be able to lease the asset to someone else, as the asset would be worn out. The lessor must, therefore, ensure that the lease payments during the primary period pay for the full cost of the asset as well as providing the lessor with a suitable return on his investment.
iii. It is usual at the end of the primary lease period to allow the lessee to continue to lease the asset for an indefinite secondary period, in return for a very low nominal rent. Alternatively, the lessee might be allowed to sell the asset on the lessor's behalf (since

the lessor is the owner) and to keep most of the sale proceeds, paying only a small percentage (perhaps 10%) to the lessor.

Leases are popular because;-

i. The supplier of the equipment is paid in full at the beginning. The equipment is sold to the lessor, and apart from obligations under guarantees or warranties, the supplier has no further financial concern about the asset.
ii. The lessor invests finance by purchasing assets from suppliers and make a return out of the lease payments from the lessee. Provided that a lessor can find lessees willing to pay the amounts he wants to make his return, the lessor can make good profits. He will also get capital allowances on his purchase of the equipment.
iii. Leasing might be attractive to the lessee if the lessee does not have enough cash to pay for the asset, and would have difficulty obtaining a bank loan to buy it, and so has to rent it in one way or another if he is to have the use of it at all; or if finance leasing is cheaper than a bank loan. The cost of payments under a loan might exceed the cost of a lease.

Operating leases have following advantages:

i) The leased equipment does not need to be shown in the lessee's published balance sheet, and so the lessee's balance sheet shows no increase in its gearing ratio.
ii) The equipment is leased for a shorter period than its expected useful life. In the case of high-technology equipment, if the equipment becomes out-of-date before the end of its expected life, the lessee does not have to keep on using it, and it is the lessor who must bear the risk of having to sell obsolete equipment secondhand.

The lessee will be able to deduct the lease payments in computing his taxable profits.

Example

The primary period of the lease might be three years, with the agreement by the lessee to make three annual payments of Ksh. 6,000 each. The lessee will be responsible for repairs and servicing, road tax, insurance and garaging. At the end of the primary period of the lease, the lessee may have the option either to continue leasing the car at a nominal rent (perhaps Ksh. 250 a year) or sell the car and pay the lessor 10% of the proceeds.

Advantages of lease

i. In a lease arrangement the firm may avoid the cost of obsceneness if the lessor fails to anticipate accurately the obsolesce of assets and sets the lease payment too low. This is especially true with operating leases which is generally true for operating leases which generally have short live.
ii. A lessee avoids many of the restrictive covenants that are normally included as part of long loans

Disadvantages of lease

i. A lease does not have a stated interest cost. Thus in many leases the return to the lessor is quit high; the firm might be better of borrowing to purchase the asset
ii. Under a lease, the lessee is generally prohibited from making improvements on the lease property or asset without the approval of the lessor. If the property were owned out rightly, this difficulty will not arise.
iii. Under a financial lease, if a lessee leases an asset that subsequently becomes obsolete it still must make lease payments over the remaining term of the lease even if the asset is an usable

EXTERNAL AND INTERNAL SOURCES OF FUNDS

Internal sources

Internal sources of finance are those sources which are generated within the business .It means the internal sources provide funds from the operations of the business, these consist of: retained earnings, provisions e.g. provision for depreciation and provision for taxation, sale and lease back

External sources

External sources of finance are those sources where finance is obtained from owners or creditors. This consists of: Ordinary share capital, Preference share capital, debentures, Trade credit, Hire purchase, loans from banks and other financial institutions.

SOURCES OF FUNDS FOR SMALL BUSINESS ENTERPRISES

Family and friends

Borrowing from friends and family is a good way for new businesses to get money. It is not uncommon for relatives to make low interest or no interest loans to family members. However, the risk alienating your family if the business falls on hard times and you have trouble repaying the loan.

Banks

It has been reported that the most important factor in getting a small loan is the credit history of the borrower. Nowadays, this is usually expressed as the credit score. If you don't know what your credit score is, find it out before you go to the bank.

There are two basic types of loans you might want to consider

-Business Loans;-most small business loans are secured with company or personal assets. Lenders will usually ask for personal guarantees, as well as collateral. The bank's reason for requiring collateral is, in part, to gauge whether you think your company is worth the risk you are asking them to take. Business loans have more strict requirements than consumer loans.

-Consumer Loans; - many small businesses are funded through personal loans or other loans based on personal assets. Consumer loans, home equity loans, second mortgages, mortgage

refinancing, and personal loans - are easier to obtain than business loans if you have a good credit history.

Grants

Grants are available most frequently to non-profit companies, although some grants exist for "for-profit" companies. What is almost impossible to come by is a grant for a business start-up. Most grants are made available for the development of a product or service that will benefit the public or will generate a product or service the government needs.

Personal savings

It is money that an individual has put away for non-immediate use. For example, one may utilize personal savings to save funds for an expensive purchase, such as a house or a car. In general, it is recommended for one to maintain personal savings to cover three to six months of living expenses.

TOPIC 3

FINANCIAL MARKETS

NATURE AND ROLE OF FINANCIAL MARKETS

Financial Market, in very crude terms, is a place where the savings from various sources like households, government, firms and corporates are mobilized towards those who need it. Alternatively put, financial market is an intermediary which directs funds from the savers (lenders) to the borrowers.

In other words, financial market is the place where assets like equities, bonds, currencies, derivatives and stocks are traded.

Some of the **salient features** of financial market are:

- Transparent pricing
- Basic regulations on trading
- Low transaction costs
- Market determined prices of traded securities

Roles of financial system

One of the important sustainability requisite for the accelerated development of an economy is the existence of a dynamic financial market. A financial market helps the economy in the following manner.

- **Saving mobilization**: Obtaining funds from the savers or surplus units such as household individuals, business firms, public sector units, central government, state governments etc. is an important role played by financial markets.
- **Investment**: Financial markets play a crucial role in arranging to invest funds thus collected in those units which are in need of the same.
- **National Growth**: An important role played by financial market is that, they contribute to a nation's growth by ensuring unfettered flow of surplus funds to deficit units. Flow of funds for productive purposes is also made possible.
- **Entrepreneurship growth**: Financial market contribute to the development of the entrepreneurial claw by making available the necessary financial resources.
- **Industrial development**: The different components of financial markets help an accelerated growth of industrial and economic development of a country, thus contributing to raising the standard of living and the society of well-being.

The principle participants in the financial market are as follows:

Banks: largest provider of funds to business houses and corporates through accepting deposits. Banks are the major participant in the financial market.

Insurance companies: issue contracts to individuals or firms with a promise to refund them in future in case of any event and thereby invest these funds in debt, equities, properties, etc.

Finance companies: engages in short to medium term financing for businesses by collecting funds by issuing debentures and borrowing from general public.

Merchant banks: funded by short term borrowings; lend mainly to corporations for foreign currency and commercial bills financing.

Companies: the surplus funds generated from business operations are majorly invested in money market instruments, commercial bills and stocks of other companies.

Mutual funds: acquire funds mainly from the general public and invest them in money market, commercial bills and shares. Mutual fund is also principle participant in financial market.

Government: authorized dealers basically look after the demand-supply operations in financial market. Also works to fill in the gap between the demand and supply of funds.

Characteristics of a good market

Financial markets have been found to be fairly good (perfect) in the advanced economies as well as many number of emerging capital markets. The following are characteristics of a good market

1. ***No entry barriers***

Anyone can participate in the market therefore the suppliers/users of funds can enter the market and deal with each other

2. ***Large no. of buyers and sellers***

The market is ensured by the presence of large number of buyers and sellers of securities. No single market participant should be large enough to influence the security prices.

3. ***Divisibility of financial asset***

Financial assets are divisible and therefore affordable investments are made by all participants.

4. ***Absence of transaction cost***

Participants can buy and sell securities with care and without much cost.

5. ***No tax differences***

Ideally there are no taxes; one set of investors should not be favored over others

6. ***Free trading-Anyone is free to trade in securities.***

FUNCTIONS OF FINANCIAL MARKETS

- **Intermediary Functions**: The intermediary functions of a financial markets include the following:
    - **Transfer of Resources**: Financial markets facilitate the transfer of real economic resources from lenders to ultimate borrowers.
    - **Enhancing income**: Financial markets allow lenders to earn interest or dividend on their surplus invisible funds, thus contributing to the enhancement of the individual and the national income.
    - **Productive usage**: Financial markets allow for the productive use of the funds borrowed. The enhancing the income and the gross national production.
    - **Capital Formation**: Financial markets provide a channel through which new savings flow to aid capital formation of a country.
    - **Price determination**: Financial markets allow for the determination of price of the traded financial assets through the interaction of buyers and sellers. They provide a sign for the allocation of funds in the economy based on the demand and to the supply through the mechanism called price discovery process.
    - **Sale Mechanism**: Financial markets provide a mechanism for selling of a financial asset by an investor so as to offer the benefit of marketability and liquidity of such assets.
    - **Information**: The activities of the participants in the financial market result in the generation and the consequent dissemination of information to the various segments of the market. So as to reduce the cost of transaction of financial assets.

- **Financial Functions**
    - Providing the borrower with funds so as to enable them to carry out their investment plans.
    - Providing the lenders with earning assets so as to enable them to earn wealth by deploying the assets in production debentures.
    - Providing liquidity in the market so as to facilitate trading of funds.
    - Providing liquidity to commercial bank
    - Facilitating credit creation
    - Promoting savings
    - Promoting investment
    - Facilitating balanced economic growth
    - Improving trading floors

CLASSIFICATION OF FINANCIAL MARKETS

Securities market can be divided into three categories: -

a) Capital and money markets.
b) Primary and secondary markets

PRIMARY AND SECONDARY MARKET

Primary financial markets are those markets where there is transfer of new financial instruments. Financial instruments constitute assets, which are used in the financial markets. They consists of cash, shares and debt capital both long term and short-term e.g. commercial paper.

The primary financial markets trade is for securities which have not been issued e.g. if a company wants to make an issue of ordinary share capital issue of commercial paper, issues of preference shares, debentures etc, offers and purchase will be through the primary etc.

Secondary markets — the secondary financial markets are for already issued securities. After a thorough issue of new securities in the primary market later trading of the securities will take place in secondary market e.g. if a company is to make public issue of ordinary share capital the issue will take place in primary market. If the initial purchasers wish to dispose off the shares, trading will take place in the secondary market. The only distinction between primary and secondary markets is the form of security being traded but there is no physical separation of the markets.

CAPITAL AND MONEY MARKETS

This classification is based on the maturity of financial instruments. The capital market is a financial market for long-term securities. The securities traded in these markets include shares and bonds.

The money market is market for short-term securities. The securities traded in these markets include promissory notes, commercial paper, treasury bills and certificates of deposits while capital market is regulated by capital authority; the money market is regulated by central banks.

Financial markets may also be classified as:-

Organized and over- counter markets

An organized market is a market which is a specified place of security trading, defined rules, regulations and procedures for security trading. Only listed securities trade in organized market, where exchange is through licensed brokers who are members of exchange Conducted by accountants, auctioneers, estate agents and lawyers who were engaged in other areas of specializations.

In 1951 an estate agent (Francis Drummond) established the first stock broking firm. He then approached the finance minister of Kenya with an idea of setting up a stock exchange in East Africa. in 1953 he too approached London Stock Exchange Officer and London accepted to recognize the setting up of Nairobi Stock Exchange as an oversee stock exchange. The major reorganization emerged in 1954 when stockbrokers emerged and registered the NSE as a voluntary association under society's Act. It was registered as a limited liability company.

Stock exchange terms

1. Broker

Is an agent who buys and sells securities in the Market on behalf of his client on a commission basis. He also gives advice to his client and at times manages the portfolio for his client. In connection with the new issue, a broker will advise on price to be charged, will submit the necessary documents to the quotation department the stock exchange and the capital market authority. He may be involved in arranging for funds or for the purchase of shares and may underwrite the issue (assure the company that shares are sold if not broker will buy them).

2. Jobber:

He is a dealer. He is not an agent but a principal who buys and sells securities in his own name. His profit is referred to as Jobber's turn. Since they are experts in the markets, they are not allowed to deal with general public but only with brokers or other jobbers to avoid exploitation of individual investors. A Jobber will quote two prices for a share.
The bid price-which is the price at which he is willing to buy securities
Offer price-price at which he is willing to sell the shares.
The difference between offer price and the bid price is called spread price = Ask price - Bid price. A Jobber will take stocks in his books (also called along sale) when brokers have predominantly selling orders, and will also sell short (Short sale) when brokers are engaged in buying.

3. Bulls

Speculators in the market who believe that the main market movement is upwards and therefore buy securities now hoping to sell them at a higher price in the future

4. **Bears**

These are speculators in the market who believe that the main market movement is downwards therefore securities now hoping to buy them back later at a lower price.

5. Stags

These are speculators in the market who buy new shares because they believe that the price Set by issuing company is usually lower than the theoretical value and that when shares are later dealt with in the stock-exchange the share price will increase and they will be able to sell them at profit.

Capital market instruments

This is a market for issuing long-term funds.
They include:

i) Common share/ordinary share
ii) Preference share
iii) Debentures

iv) Treasury Municipal bonds
v) Warrants & Convertible
vi) Terms loans
vii) Mortgages

Services rendered by capital markets

1. It offers long term finance which is necessary for acquisition of fixed assets of companies and for development purpose generally.
2. Market provides permanent finance necessary for a strong financial base of going concerns e.g. share capital, irredeemable preference shares, convertible debentures and convertible preference shares.
3. The market provide services in the form of advice to investors as to which investments are viable and can answer their investment needs e.g. advice given by stock exchange brokers to their investing public
4. Enables companies and individuals to obtain long term finance which they can then sale in the money market in form of short term loans therefore serving as a source of livelihoods to such party
5. The market acts as a channel through which foreign investment find their way into Kenya in form of foreigners buying shares in Kenya which they have to buy using their currencies which brings in need foreign exchange.
6. The market is responsible for an orderly secondary market which facilitates the liquidation of long term investments.

Reasons why capital markets are more developed in Kenya than money market

1. It's easier to get access to capital market because in most cases the goodwill of the borrower may not be necessary and at the same time such finance may not call for security as the asset in question acts as its own security e.g. mortgage finance
2. There less risks of misuse of funds from this market because these are available in form of fixed asset whose title remains with the lender, therefore less chances of manipulation/misappropriation which is a characteristic of finance from money market.
3. Long term finances available in this market are relatively cheaper because inflation reduces the latter payments of interest and principle in real monetary funds
4. Long term investments using permanent long term finance are capable for paying for themselves which may not entail further financial strain on the borrower therefore making it attractive finance.
5. Kenya as a developing country requires long term investment for accumulation of fixed asset and other long term resources all of which necessitates the development of this capital market as a base for the development of the economy in general
6. CBK has facilitated the development of this market by providing a conducive atmosphere for setting up financial institutions which avail finance on long term basis such as building societies, mortgage houses etc

7. Agriculture has and will remain the main stay of Kenyan market economy and this has led to faster growth of agro-business industry which necessitates long term investment, this creation of such institutions as agricultural on development of this market by instructing such financial institutions as insurance companies to channel all their savings into long term finances and also to avoid finance on long term basis to industries and buildings constructions.

Differences between money and capital market

Capital market	Money market
In this market goodwill is not important but rather the ability to raise security is what matters	Goodwill of the borrower qualifies him for this finance
Finance is obtained in kind e.g. in form of assets	Finance is obtained in cash
Finance is usually cheaper due to the effects of inflation on this money	Finance is usually more expensive
The market acts as channel through which foreign exchange gets its way into the country	Usually the market does not deal in foreign exchange for investment reasons
Finance is secured against a fixed asset	Finance is usually unsecured
Finance usually takes long time to raise due to lot of formalities	Finance takes short time to raise
Finance calls for intermediaries in form of brokers	Finance does not call for intermediaries when raising
Funds are not highly negotiable	Funds from this market are highly negotiable
Central bank controls this market , this is done through selective credit control and credit squeeze	The market is not influenced very much by the central bank through credit squeeze and selective credit control
Serves big companies more than small companies	Open to all companies regardless of their size

STOCK EXCHANGE LISTING AND CROSS LISTING

History and organization of Nairobi securities exchange

In Kenya, dealing in shares and stocks started in the 1920's when the country was still a British colony. However the market was not formal as there did not exist any rules and regulations to govern stock broking activities. Trading took place on a 'gentleman's agreement.' Standard commissions were charged with clients being obligated to honor their contractual commitments of making good delivery, and settling relevant costs. At that time, stock broking was a sideline business conducted by accountants, auctioneers, estate agents

and lawyers who met to exchange prices over a cup of coffee. Because these firms were engaged in other areas of specialization, the need for association did not arise.

In 1951, an Estate Agent by the name of Francis Drummond established the first professional stock broking firm. He also approached the then Finance Minister of Kenya, Sir Ernest Vasey and impressed upon him the idea of setting up a stock exchange in East Africa. The two approached London Stock Exchange officials in July of 1953 and the London officials accepted to recognize the setting up of the Nairobi Stock Exchange as an overseas stock exchange.

In 1954 the Nairobi Stock Exchange was then constituted as a voluntary association of stockbrokers registered under the Societies Act. Since Africans and Asians were not permitted to trade in securities, until after the attainment of independence in 1963, the business of dealing in shares was confined to the resident European community. At the dawn of independence, stock market activity slumped, due to uncertainty about the future of independent Kenya.

1988 saw the first privatization through the NSE, of the successful sale of a 20% government stake in Kenya Commercial Bank. The sale left the Government of Kenya and affiliated institutions retaining 80% ownership of the bank.

Notably, on February 18, 1994 the NSE 20-Share Index recorded an all-record high of 5030 points. The NSE was rated by the International Finance Corporation (IFC) as the best performing market in the world with a return of 179% in dollar terms. The NSE also moved to more spacious premises at the Nation Centre in July 1994, setting up a computerized delivery and settlement system (DASS). For the first time since the formation of the Nairobi Stock Exchange, the number of stockbrokers increased with the licensing of 8 new brokers.

In 1996, the largest share issue in the history of NSE, the privatization of Kenya Airways, came to the market. Having sold a 26% stake to KLM, the Government of Kenya proceeded to offer 235,423,896 shares (51% of the fully paid and issued shares of Kshs.5.00 each) to the public at Kshs.11.25 per share. More than 110,000 shareholders acquired a stake in the airline and the Government of Kenya reduced its stake from 74% to 23%. The Kenya Airways Privatization team was awarded the World Bank Award for Excellence for 1996 for being a model success story in the divestiture of state-owned enterprises.

On Monday 11 September 2006 live trading on the automated trading systems of the Nairobi Stock Exchange was implemented.

The East African Securities Exchanges Association came into being in 2004, following the signing of a Memorandum of Understanding between the Dar-es-Salaam Stock Exchange, the Uganda Securities Exchange and the Nairobi Stock Exchange.

In May 2006, NSE formed a demutualization committee to spearhead the process of demutualization. A demutualization consultant (Ernst and Young) was appointed to advice on the process.

In September 2006 live trading on the automated trading systems of the Nairobi Stock Exchange was implemented. The ATS was sourced from Millennium Information Technologies (MIT) of Colombo, Sri Lanka, who are also the suppliers of the Central Depository System (CDS). MIT have also supplied similar solutions to the Colombo Stock Exchange and the Stock Exchange of Mauritius. The NSE ATS solution was customized to uphold the spirit of the Open Outcry Trading Rules in an automated environment.

In the same breadth, trading hours increased from two (10:00 am – 12:00 pm) to three hours (10:00 am – 1:00 pm). Other innovations included the removal of the block trades board and introduction of the functionality for the trading of rights in the same manner as equities. Besides trading equities, the ATS is also fully capable of trading immobilized corporate bonds and treasury bonds.

An MoU between the Nairobi Stock Exchange and Uganda Securities Exchange was signed in November 2006 on mass cross listing. The MoU allowed listed companies in both exchanges to dualist. This will facilitate growth and development of the regional securities markets.

In February 2007 NSE upgraded its website to enhance easy and faster access of accurate, factual and timely trading information. The upgraded website is used to boost data vending business.

In July 2007 NSE reviewed the Index and announced the companies that would constitute the NSE Share Index. The review of the NSE 20-share index was aimed at ensuring it is a true barometer of the market.

A Wide Area Network (WAN) platform was implemented in 2007 and this eradicated the need for brokers to send their staff (dealers) to the trading floor to conduct business. Trading is now mainly conducted from the brokers' offices through the WAN. However, brokers under certain circumstances can still conduct trading from the floor of the NSE.

In 2008, the NSE All Share Index (NASI) was introduced as an alternative index. Its measure is an overall indicator of market performance. The Index incorporates all the traded shares of the day. Its attention is therefore on the overall market capitalization rather than the price movements of select counters.

In April 2008, NSE launched the NSE Smart Youth Investment Challenge to promote stock market investments among Kenyan Youths. The objective of the challenge is threefold:

- To occupy the minds of the youth positively and draw them away from the negative energy created by the current political, economic and social situation in the country;
- Encourage the culture of thrift and saving funds amongst the university students;
- Encourage the youth to invest their savings in the capital markets.

After the resignation of Mr. Chris Mwebesa, the NSE Board appointed Mr. Peter Mwangi to be the New NSE Chief Executive in November 2008.

The Complaints Handling Unit (CHU) was launched in August 2009 to bridge the confidence gap with NSE retail investors. CHU provides a hassle free and convenient way to have any concerns processed and resolved. Investors, both local and in the Diaspora can forward their issues via e-mail, telephone, fax, or SMS and have the ability to track progress on-line.

The Nairobi Stock Exchange marked the first day of automated trading in government bonds through the Automated Trading System (ATS) in November 2009. The automated trading in government bonds marked a significant step in the efforts by the NSE and CBK towards creating depth in the capital markets by providing the necessary liquidity.

In December 2009, NSE marked a milestone by uploading all government bonds on the Automated trading System (ATS). Also in 2009, NSE launched the Complaints

Handling Unit (CHU) SMS System to make it easier for investors and the general public to forward any queries or complaints to NSE

In July 2011, the Nairobi Stock Exchange Limited changed its name to the Nairobi Securities Exchange Limited. The change of name reflected the strategic plan of the Nairobi Securities Exchange to evolve into a full service securities exchange which supports trading, clearing and settlement of equities, debt, derivatives and other associated instruments. In the same year, the equity settlement cycle moved from the previous T+4 settlement cycles to the T+3 settlement cycle. This allowed investors who sell their shares, to get their money three (3) days after the sale of their shares. The buyers of these shares will have their CDS accounts credited with the shares, in the same time.

In September 2011 the Nairobi Securities Exchange converted from a company limited by guarantee to a company limited by shares and adopted a new Memorandum and Articles of Association reflecting the change.

In October 2011, the Broker Back Office commenced operations. The system has the capability to facilitate internet trading which improved the integrity of the Exchange trading systems and facilitates greater access to our securities market.

In November 2011 the FTSE NSE Kenya 15 and FTSE NSE Kenya 25 Indices were launched. The launch of the indices was the result of an extensive market consultation process with local asset owners and fund managers and reflects the growing interest in new domestic investment and diversification opportunities in the East African region.

As of March 2012, the Nairobi Securities Exchange became a member of the Financial Information Services Division (FISD) of the Software and Information Industry Association (SIIA).

In March 2012 the delayed index values of the FTSE NSE Kenya 15 Index and the FTSE NSE Kenya 25 Index were made available on the NSE website www.nse.co.ke. The new initiative gives investors the opportunity to access current information and provides a reliable indication of the Kenyan equity market's performance during trading hours.

Market segments and eligibility requirements for listing of securities at Nairobi securities exchange

The Official list is categorized into three different market segments approved by the Authority. The segments have different eligibility and disclosure requirements prescribed by the Authority under The Capital Markets (Securities) (Public Offers, Listing and Disclosures) Regulations, 2002 and provided under Part V as appendices to these rules.

These market segments are:

(i) Main Investment Market Segment (MIMS)
(ii) Alternative Investment Market Segment (AIMS)
(iii)Growth Enterprise Market Segment (GEMS)
(iv)Fixed Income Securities Market Segment (FISMS)

Eligibility requirements for public offering of shares and listing

Main Investment Market Segment (MIMS

1. ***Incorporation status***- The issuer to be listed shall be a public company limited by shares and registered under the Companies Act (Cap. 486 of the Laws of Kenya).
2. ***Size***: Share capital- The issuer shall have a minimum authorized issued and fully paid up ordinary share capital of fifty million shillings
3. ***Net assets***- Net assets immediately before the public offering or listing of shares should not be less than one hundred million shillings.
4. ***Free transferability of share***- Shares to be listed shall be freely transferable and not subject to any restrictions on marketability or any pre-emptive rights.
5. ***Availability and reliability of financial records***- The issuer shall have audited financial statements complying with International Financial Reporting Standards (IFRS) for an accounting period ending on a date not more than four months prior to the proposed date of the offer or listing for issuers whose securities are not listed at the securities exchange, and six months for issuers whose securities are listed at the securities exchange.

The Issuer must have prepared financial statements for the latest accounting period on a going concern basis and the audit report must not contain any emphasis of matter or qualification in this regard

6. ***Competence and suitability of directors and management*** - At the date of the application, the issuer must not be in breach of any of its loan covenants particularly in regard to the maximum debt capacity.

As at the date of the application and for a period of at least two years prior to the date of the application, no director of the issuer shall have-any petition under bankruptcy or insolvency laws in any jurisdiction pending or threatened against the director (for director (for individuals), or any winding-up petition pending or threatened against it (for corporate bodies);

- any criminal proceedings in which the director was convicted of fraud or any criminal offence, nor be named the subject of pending criminal proceeding, or any other offence or action either within or outside Kenya; or been the subject of any ruling of a court of competent jurisdiction or any governmental body in any jurisdiction, that permanently or temporarily prohibits such director from acting as an investment adviser or as a director or employee of a Stockbroker, dealer, or any financial service institution or engaging in any type of business practice or activity in that jurisdiction.

The issuer must have suitable senior management with relevant experience for at least one year prior to the listing, none of whom shall have committed any serious offence in any jurisdiction that may be considered inappropriate for the management of a listed company.
The issuer shall ensure continued retention of suitably qualified management during listing and no change of management for a period of twelve months following the listing other than for reason of a serious offence that may be considered to affect the integrity or be inappropriate for management of a listed company.
The issuer must have at least a third of the Board as non-executive directors.

7. ***Dividend policy***- The issuer must have a clear future dividend policy.
8. ***Solvency and adequacy of working capital***- The issuer should not be insolvent. The issuer should have adequate working capital.
9. ***Share ownership structure***- Following the public share offering or immediately prior to listing in the case of an introduction, at least twenty five per centum of the shares must be held by not less than one thousand shareholders excluding employees of the issuer.

In the case of a listing by introduction, the issuer shall ensure that the existing shareholders, associated persons or such other group of controlling shareholders who have influence over management shall give an undertaking not to sell their shareholding before the expiry of a period of twenty four months following listing and such undertaking shall be disclosed in the Information Memorandum

10. ***Certificate of comfort***- If the issuer is listed in a securities exchange outside Kenya or is license by any regulator the Authority shall obtain a certificate of no objection from that foreign securities exchange and from the relevant regulators.

Alternative Investment Market Segment (AIMS)

1. ***Incorporation status***- The issuer to be listed shall be a public company limited by shares and registered under the Companies Act (Cap. 486 of the Laws of Kenya).
2. S***ize***: Share capital- The issuer shall have a minimum authorized issued and fully paid up ordinary share capital of twenty million shillings.
3. ***Net assets***- Net assets immediately before the public offering or listing of shares should not be less than twenty million shillings.
4. ***Free transferability of share*** - Shares to be listed shall be freely transferable and not subject to any restrictions on marketability or any pre-emptive rights.
5. ***Availability and reliability of financial records***- The issuer shall have audited financial statements complying with International Financial Reporting Standards (IFRS) for an accounting period ending on a date not more than four months prior to the proposed date of the offer or listing for issuers whose securities are not listed at the securities exchange, and six months for issuers whose securities are listed at the securities exchange.

The Issuer must have prepared financial statements for the latest accounting period on a going concern basis and the audit report must not contain any emphasis of matter or qualification in this regard.

6. ***Competence and suitability of directors and management*** - At the date of the application, the issuer must not be in breach of any of its loan covenants particularly in regard to the maximum debt capacity. As at the date of the application and for a period of at least two years prior to the date of the application, no director of the issuer shall have-

any petition under bankruptcy or insolvency laws in any jurisdiction pending or threatened against the director (for individuals), or any winding-up petition pending or threatened against it (for corporate bodies); any criminal proceedings in which the director was convicted of fraud or any criminal offence, nor be named the subject of pending criminal

proceeding, or any other offence or action either within or outside Kenya; or been the subject of any ruling of a court of competent jurisdiction or any governmental body in any jurisdiction, that permanently or temporarily prohibits such director from acting as an investment adviser or as a director or employee of a Stockbroker, dealer or any financial service institution or engaging in any type of business practice or activity in that jurisdiction.
The issuer must have suitable senior management with relevant experience for at least one year prior to the listing, none of whom shall have committed any serious offence in any jurisdiction that may be considered inappropriate for the management of a listed company.
The issuer shall ensure continued retention of qualified management during listing and no change of management for a period of twelve months following the listing other than for reason of a serious offence that may be considered to affect the integrity or be inappropriate for management of a listed company.
The issuer must have at least a third of the Board as non-executive directors

7. ***Dividend policy***- The issuer must have a clear future dividend policy.
8. ***Solvency and adequacy of working capital***- The issuer should not be insolvent. The issuer should have adequate working capital.
9. ***Share ownership structure***- Following the public share offering or immediately prior to listing in the case of an introduction, at least twenty per centum of the shares must be held by not less than one hundred shareholders excluding employees of the issuer or family members of the controlling shareholders.

No investor shall hold more than t existing shareholders, associated persons or such other group of controlling shareholders who have influence over management shall give an undertaking to the Authority not to sell their shareholding before the expiry of a period of twenty four months following listing and such undertaking shall be disclosed in the Information Memorandum.

10. ***Certificate of comfort***- If the issuer is listed in a securities exchange outside Kenya or is licensed by any regulator the Authority shall obtain a certificate of no objection from that foreign securities exchange and the relevant regulators.

Growth Enterprise Market Segment (GEMS)

1. ***Incorporation status***- The issuer to be listed shall be a public company limited by shares and registered under the Companies Act (Cap. 486 of the Laws of Kenya).
2. ***Size***: Share capital-. The issuer shall have a minimum authorized and fully paid up ordinary share capital of ten million shillings.
3. ***Net assets***- The issuer must have not less than one hundred thousand shares in issue.
4. ***Free transferability of share*** - Shares to be listed shall be freely transferable and not subject to any restrictions on marketability or any pre-emptive rights.
5. ***Availability and reliability of financial records***-
6. ***Competence and suitability of directors and management***- The issuer must have a minimum of five directors, with a least a third of the Board as non- executive directors As at the date of the application and for a period of at least two years prior to the date of the application, no director of the issuer shall have-

(i) Any petition under bankruptcy or insolvency laws in any jurisdiction pending or threatened against any director (for individuals), or any winding- up petition pending or threatened against it (for corporate bodies)
(ii) any criminal proceedings in which the director was convicted of fraud or any criminal offence, nor be named the subject of pending criminal proceeding, or any other offence or action within or outside Kenya; or
(iii) been the subject of any ruling of a court of competent jurisdiction or any government body in any jurisdiction, that permanently or temporarily prohibits such director from acting as an investment advisor or as a director or employee of a stockbroker, dealer, or any financial service institution or engaging in any type of business practice or activity in that jurisdiction.

7. ***Solvency and adequacy of working capital***- The issuer should not be insolvent. The issuer should have adequate working capital.

The Directors of the Issuer shall give an opinion on the adequacy of working capital for at least twelve months immediately following the share offering, and the auditors of the issuer shall confirm in writing the adequacy of that capital.

8. ***Share ownership structure***- The Issuer must ensure at least fifteen per cent of the issued shares (excluding those held by a controlling shareholder or people associated or acting in concert with him; or the Company's Senior Managers) are available for trade by the public.

An issuer shall cease to be eligible for listing upon the expiry of three months of the listing date, if the securities available for trade by the public are held by less than twenty-five shareholders (excluding those held by a controlling shareholder or people associated or acting in concert with him, or the Company's Senior Managers.)
The issuer must ensure that the existing shareholders, associated persons or such other group of controlling shareholders who have influence over management shall give an undertaking in terms agreeable to the Authority and the Securities Exchange restricting the sale of part or the whole of their shareholding before the expiry of a period of twenty four months following listing and such undertaking shall be disclosed in the listing statement.

9. ***Listed shares to be immobilized***- All issued shares must be deposited at a central depository established under the Central Depositories Act, 2000 (No. 4 of 2000).
10. ***Nominated Advisor***- The issuer must appoint a Nominated Adviser in terms of a written contract and must ensure that it has a Nominated Adviser at all times.

Reasons behind low quotation at Nairobi securities exchange

1. Most companies operating in Kenya are owned by families who value their control and as such cannot go public as this will entail dilution of their control by the incoming shareholders.
2. Quotation at NSE is supposed to be a means of raising finance from the public and most of companies operating in Kenya have access to cheap finance and as such this motive does not hold.
3. Going public does not entail a lot of formalities.
4. Going public also entails a loss of secrecy to the public because annual reports have to be published. Such information is accessed by the competitors.

5. Some companies in Kenya are subsidiaries of multinational companies and are already quoted at home and the original owners may not be willing to sell their interest to the public.
6. Going public is expensive as a company is required to pay floatation fee among other costs such as underwriting commission, brokerage fee, cost of printing prospectus, advertising cost, legal fee, audit fee etc.
7. Some companies choose to remain private to avoid/evade corporate tax
8. Some companies that make high profits prefer investing those profits instead of sharing them out, going public require profits to be given out to shareholders in form of dividends.

Incentives that government has given companies to induce them to go public

1. it has offered tax holidays for companies going public in particular those investing in specific areas e.g. agro-based company
2. has offered has offered preferential treatment to companies in allocation of foreign exchange in importation of raw materials
3. Government is willing through quasi governmental body to participate in the equity of such companies going public.
4. It has bank capital gain tax on sale of shares and tax on share transfer and its intended to make shares attractive to investors
5. Offered protection against importation of similar products to those currently manufactured by Kenya quoted companies.
6. Embarked on promotional activities of product of these companies abroad in a bid to secure them foreign market and this is done free of charge through trade fairs and exhibitions in international market
7. Provided such facilities as good infrastructure and communication facilitates which provide easy accessibility to sources of materials and markets to these companies' goods has subsidized no. of products in a bid to make them affordable by majority of consumers.
8. Has also given a tax deduction an concession to inputs of agro-based industries and manufactured goods aimed at making them affordable to consumers
9. Given guarantees on repatriation of dividend and interest to non-resident investors in a bid to attract their investment in Kenyan quoted companies.

Reasons why parastatals cannot be quoted

1. Most parastatals are not profit making organization and as such are supposed to maximize society welfare in an objective cannot appeal to the public so as to buy share e.g. national irrigation boards, K.T.D.A, K.P.C.U
2. Some parastatals give services which are crucial to the state and control to the public interest which if they go public will prejudice such sensitive roles as this may not be taken care of by profit oriented investors

3. Most of parastatals are government subsidies and also have access to foreign aid further they can borrow from abroad using government guarantee and such no need for finance from the public in form of share capital e.g. Kenya airways
4. Most parastatals has bad financial performance and for sometime been operating on loses and as such this bad performance cannot make their shares attractive and also not qualify for quotation e.g. Kenya railways, KMC, KCC, uplands
5. Some of the parastatals are so highly geared that no potentials investors can strive to invest his money in such if they went public.
6. Some parastatals are geared towards achievements of short term objectives and as such may not be willing to go public so as to be able to attract public investors e.g. Tana and Athi river development authority.

Advantages of being quoted

1. A quoted company is able to raise finance in good terms because it will be able to reduce its floatation cost its shares at a premium
2. It will be able to obtain underwriting facilitates because it can negotiate with strength for good underwriter as its shares are likely to be sold out
3. Shareholders of a quoted company are open to a ready market from the stock exchange through which they can sell their shares which allows them to gauge the worthiness of their investment and which increases the goodwill to the company.
4. Quoted company will be able to raise permanent finance by way of selling certain security to the public as ordinary shares.
5. It will be to enjoy national and international prestige that boosts its goodwill.
6. The NSE will approve for quotation only these companies which in their opinion are viable hence an assurance to potential shareholders that it is financial stable.
7. Quoted company is viewed as credit worthy from the creditors from the creditors point of view
8. Quoted company is open to read up to date information which will come inform of feedback regarding its share prices in the stock exchange
9. Quoted company will be able to get comparative figures from NSE
10. Being quoted will necessitate companies to operate within ethical guidelines and this will prevent quoted companies from engaging in unethical activities and unfair practices during the course of operations.
11. Quoted companies are allowed to enjoy privileges given by the government to induce others to be quoted e.g. tax allowances and occasion of foreign exchange protection from competitors etc

Limitations of being quoted

1. The company loses its secrets to competitors who may not have been quoted e.g. publication of company's accounts which threatens its survived
2. In case the company's profit trend declines, such will be revealed to the public hence lowering share prices of such company and its goodwill
3. Companies which profit records are not impressive maybe deregistered and dropped out stock quotation which will be dangerous to such company as it will have lost its secret to the public and may in the extreme lead such a company into receivership as creditors will also lose confidence in it
4. Being quoted in the SE entails loss of control to incoming shareholders who acquire votes in the company.
5. Quotation is expensive because the company will have to pay high floatation cost such as underwriting commission
6. A company to be quoted is supposed to undergo tedious formalities such as getting permission from the capital issue committee and S.E.C
7. In the short run the share prices of a quoted company may be low in the SE due to oversupply of those shares in particular. If there has been a new issue and it will lower share prices of the company and this in turn will lower its credibility from creditors point of view.
8. Quoted company is committed to the payment of a permanent cost inform of ordinary dividend which more over its not a tax allowable expense therefore compounding the cost of the finance to the company
9. Quoted company will face problems of takeovers bids as a result of competitors who may have had a chance to buy such shares in large blocks and this may dissolve the company if they acquire a major shareholders.

TIMING OF INVESTMENT A STOCK EXCHANGE

The ideal way of making profits at the stock exchange is to buy at the bottom of the market (lowest M.P.S) and sell at the top of the market (highest M.P.S). The greatest problem however is that no one can be sure when the market is at its bottom or at its top (prices are lowest and highest).

Systems have been developed to indicate when shares should be purchased and when they should be sold. These systems are **Dow theory** and **Hatch system.**

1. Dow Theory

This theory depends on profiting of secondary movement of prices of a chart. The principal objective is to discover when there is a change in the primary movement.

This is determined by the behaviour of secondary movement but tertiary movements are ignored. E.g. in a bull market, the rise of prices is greater than the fall of prices.

In a bear market the opposite is the case i.e. the fall is greater than the rise

In a bear market, the volume of the business being done at a certain stage can also be used to interpret the state of the market.
Basically, it is maintained that if the volume increases along with rising prices, the signs are bullish and if the volume increases with falling prices, they are bearish.

2. Hatch System
This is an automatic system based on the assumption that when investors sell at a certain % age below the top of the market and buys at a certain percentage above the market bottom, they are doing as well as can reasonably be expected. This system can be applied to an index of a group of shares or shares of dividends companies e.g. Dow Jones and Nasdaq index of America.

Rules for floatation of new shares on NSE

1. The company must have an issued share capital of at least Kshs.20 M.
2. The company must have made profits during the last 3 years.
3. At least 20% of issued capital (capital to be issued) should be offered to the public
4. The firm must issue a prospectus which will give more information to investors to enable them to make informed judgement
5. The market price of the companies share must be determined by the market forces of demand and supply
6. The company should be registered under Cap. 486 with registrar of companies.

Note

- A prospectus is a legal document issued by a company wishing to raise funds from the public through issue of shares or bonds.
- It is prepared by directors of the company and submitted to CMA and NSE for approval
- The CMA has issued rules relating to the design and contents of the prospectus, in addition to those contained in the Companies Act.

It must provide details on

1. Number of shares to be issued
2. Offer/issue price per share
3. The dates during which the offer is valid or open
4. Financial statements of the firm showing EPS and DPS for the last 5 years
5. Action report etc.
6. Action may be taken against the directors if the prospectus is fraudulent.

The Advantages and Disadvantages of a Listing
Advantages

1. It facilitates the issue of securities to raise new finance, making a company less dependent upon retained earnings and banks.
2. The wider share ownership which results will increase the likelihood of being able to make rights issues.

3. The transfer of shares becomes easier. Less of a commitment is necessary on the part of shareholders. For this reason the shares are likely to be perceived as a less risky investment and hence will have a higher value.
4. The greater marketability and hence lower risk attached to a market listing will lead to a lower cost of equity and also to a weighted average cost of capital.
5. A market-determine price means that shareholders will know the value of their investment at all times.
6. The share price can be used by management as an indicator of performance, particularly since the share price is forward looking, being based upon expectations, whilst other objectives measures are backward looking.
7. The shares of a quoted company can be used more readily as consideration in takeover bids.
8. The company may increase its standing by being quoted and it may obtain greater publicity.
9. Obtaining a quotation provides an entrepreneur with the opportunity to realize part of his holding in a company.

Disadvantages

1. The cost of obtaining a quotation is high, particularly when a new issue of shares is made and the company is small. This is because substantial costs are fixed and hence are relatively greater for small companies. Also, the annual cost of maintaining the quotation may be high due to such things as increased disclosure, maintaining a larger share register, printing more annual reports, etc.
2. The increased disclosure requirements may be disliked by management.
3. The market-determined price and the greater accountability to shareholders that comes with its concerning the company's performance may not be liked by management.
4. Control of a particular group of shareholders may be diluted by allowing a proportion of shares to be held by the public.
5. There will be a greater likelihood of being the subject of a takeover bid and it may be difficult to defend it with wide share ownership.
6. Management conditions, management employees give themselves more salaries due to prosperity obtained.

CROSS LISTING

Cross-listing is the listing of a company's common/ordinary shares on a different exchange than its primary and original stock exchange. In order to be approved for cross-listing, the company in question must meet the same requirements as any other listed member of the exchange, such as basic requirements for the share count, accounting policies, filing requirements for financial reports and company revenues.

Benefits that might accrue to a firm that undertakes cross boarder listing of its shares.

i. Increase in the trading volume of the company's securities since the securities are traded in more than one stock exchange.
ii. Raised debt or equity capital i.e. the funds available in the domestic market may not be sufficient for the investment needs of the company and hence cross border listing will increases the borrowing capacity of the company
iii. Risk diversification i.e. a company that has cross border listed will have a well diversified portfolio of shares thus spreading risks associated with the fluctuation of share prices hence creating stability in the share price.
iv. Mobilization of saving across regions. That is border listing will ensures mobilization of saving held by individuals and institutions in different capital markets
v. Acquisition of overseas investors and customers. Cross border listing boosts the company's status in the global market and hence increases the market share of the company and generates investments from foreign countries that are able to invest in the local market
vi. Improves the goodwill of the company i.e. improved public image and brand awareness as a result of cross border listing. This is because the company attracts media interest in different countries therefore improving its corporate image and hence increasing its sales volume.

Motivations for cross-listing

The academic literature has identified a number of different arguments to cross-list abroad in addition to a listing on the domestic exchange. Roosenboom and Van Dijk (2009)[1] distinguish between the following motivations:

- ***Market segmentation:*** The traditional argument for why firms seek a cross-listing is that they expect to benefit from a lower cost of capital that arises because their shares become more accessible to global investors whose access would otherwise be restricted because of international investment barriers.
- ***Market liquidity:*** Cross-listings on deeper and more liquid equity markets could lead to an increase in the liquidity of the stock and a decrease in the cost of capital.
- ***Information disclosure:*** Cross-listing on a foreign market can reduce the cost of capital through an improvement of the firm's information environment. Firms can use a cross-listing on markets with stringent disclosure requirements to signal their quality to outside investors and to provide improved information to potential customers and suppliers. Also, cross-listings tend to be associated with increased media attention, greater analyst coverage, better analysts' forecast accuracy, and higher quality of accounting information.
- ***Investor protection ("bonding"):*** Recently, there is a growing academic literature on the so-called "bonding" argument. According to this view, cross-listing in the United States acts as a bonding mechanism used by firms that are incorporated in a jurisdiction with poor investor protection and enforcement systems to commit

themselves voluntarily to higher standards of corporate governance. In this way, firms attract investors who would otherwise be reluctant to invest.

- ***Other motivations:*** Cross-listing may also be driven by product and labor market considerations (for example, to increase visibility with customers by broadening product identification), to facilitate foreign acquisitions, and to improve labor relations in foreign countries by introducing share and option plans for foreign employees

Disadvantages of cross listing

1. Increased pressure on executives due to closer public scrutiny
2. Increased reporting and disclosure requirements
3. Additional scrutiny by analysts in advanced market economies
4. Additional listing fees

MARKETS EFFICIENCY: EFFICIENT MARKET HYPOTHESIS

The efficient markets hypothesis (EMH), popularly known as the Random Walk Theory, is the proposition that current stock prices fully reflect available information about the value of the firm, and there is no way to earn excess profits, (more than the market overall), by using this information. It deals with one of the most fundamental and exciting issues in finance – why prices change in security markets and how those changes take place.

Many investors try to identify securities that are undervalued, and are expected to increase in value in the future, and particularly those that will increase more than others. Many investors, including investment managers, believe that they can select securities that will outperform the market. They use a variety of forecasting and valuation techniques to aid them in their investment decisions. Obviously, any edge that an investor possesses can be translated into substantial profits. If a manager of a mutual fund with $10 billion in assets can increase the fund's return, after transaction costs, by 1/10th of 1 percent, this would result in a $10 million gain. The EMH asserts that none of these techniques are effective (i.e., the advantage gained does not exceed the transaction and research costs incurred), and therefore no one can predictably outperform the market.

Arguably, no other theory in economics or finance generates more passionate discussion between its challengers and proponents. For example, noted Harvard financial economist Michael Jensen writes "there is no other proposition in economics which has more solid empirical evidence supporting it than the Efficient Market Hypothesis," while investment maven Peter Lynch claims "Efficient markets? That's a bunch of junk, crazy stuff"

The efficient markets hypothesis (EMH) suggests that profiting from predicting price movements is very difficult and unlikely. The main engine behind price changes is the arrival of new information. A market is said to be "efficient" if prices adjust quickly and, on average, without bias, to new information. As a result, the current prices of securities reflect all available information at any given point in time. Consequently, there is no reason to

believe that prices are too high or too low. Security prices adjust before an investor has time to trade on and profit from a new a piece of information.

The key reason for the existence of an efficient market is the intense competition among investors to profit from any new information. The ability to identify over- and underpriced stocks is very valuable (it would allow investors to buy some stocks for less than their “true” value and sell others for more than they were worth). Consequently, many people spend a significant amount of time and resources in an effort to detect "mis-priced" stocks. Naturally, as more and more analysts compete against each other in their effort to take advantage of over- and under-valued securities, the likelihood of being able to find and exploit such mis-priced securities becomes smaller and smaller. In equilibrium, only a relatively small number of analysts will be able to profit from the detection of mis-priced securities, mostly by chance. For the vast majority of investors, the information analysis payoff would likely not outweigh the transaction costs.

The most crucial implication of the EMH can be put in the form of a slogan: Trust market prices! At any point in time, prices of securities in efficient markets reflect all known information available to investors. There is no room for fooling investors, and as a result, all investments in efficient markets are fairly priced, i.e. on average investors get exactly what they pay for. Fair pricing of all securities does not mean that they will all perform similarly, or that even the likelihood of rising or falling in price is the same for all securities. According to capital markets theory, the expected return from a security is primarily a function of its risk. The price of the security reflects the present value of its expected future cash flows, which incorporates many factors such as volatility, liquidity, and risk of bankruptcy

However, while prices are rationally based, changes in prices are expected to be random and unpredictable, because new information, by its very nature, is unpredictable.
Therefore stock prices are said to follow a random walk.

In summary an efficient capital market has the following characteristics:-

- Information whether good or bad is quickly reflected in security prices.
- Transaction costs e.g. commission paid to broker should be minimal so that they do not discourage the buying and selling of securities
- Investors should not obtain high returns for having received information earlier than others hence all investors should receive information at the same time.
- There are no investors who will buy securities in large quantities with an aim of influencing security price by causing an artificial shortage.
- No investor will make abnormal gains simply because they are experienced or knowledgeable because the stock exchange rules will not allow this.

Need for market efficiency

An efficient market facilitates transactions therefore promoting liquidity and fair prices. All deals are made known to all in the capital market therefore, a large number of buyers and

sellers interact in the capital market the demand and supply forces help in determining the prices.

Since the information is publicly available and since no single investor is large enough to influence the security prices, the capital market provide a measure of fair price of security.

A financial manager borrows and lends (invest) funds in the capital facilities the allocation of funds between savers and borrowers. The allocation will be optimum if the capital market has an efficient pricing mechanism.
Capital markets deals in securities and security prices has been observed to move randomly and unpredictably. The randomness of the security price may be interpreted to mean that investors in capital market take a quick cognizance to all information relating to security prices and that security prices quickly adjust to such information therefore the efficiency of security prices depends on the speed of price adjustment to any available information. The more the speed of adjustment, the more the efficiency of the process will be.

The capital market efficiency may therefore be defined as the **ability of securities to reflect and incorporate all relevant information in their prices.**

Assumptions made for efficient market hypothesis.

1. All Investors are rational.
2. Rational investors have adequate funds.
3. Information is instantly available to rational investors.
4. Rational investors do not believe that markets are semi-strong form efficient.
5. Transaction costs, market impacts effects and required compensation for risk are not large enough to deter prices at prices close to fundamental value.

Types of market efficiency

a) Operational efficiency

- Transactional costs do not affect the prices but they can cause one transaction to be more profitable than another
- Transaction cost of two similar financial transactions may be different. Therefore investors would prefer one transaction over another. Similarly, transactions costs of how a person took a transaction may exhibit difficult gains. Therefore efficiency may not be that perfect but to develop a framework for analyzing financial decision. A good starting point is to assume that markets are perfect.

b) Information efficiency

- The degree of efficiency in the market depends on the level of disclosure and the speed with which the information is processed by the market and incorporated in the share prices.
- Most financial information is published and is publicly available but sometimes certain persons may have superior information than others.

c) Allocation efficiency

- This is how fast and how evenly commodities are allocated to various players in the market. This leads to appropriate investment in the market i.e. when forces of demand and supply regulates the price and the information about changes is available then allocation of transactions is appropriately done.

Three versions of the efficient markets hypothesis and how they are tested

The efficient markets hypothesis predicts that market prices should incorporate all available information at any point in time. There are, however, different kinds of information that influence security values. Consequently, financial researchers distinguish among three versions/levels/degree of the Efficient Markets Hypothesis, depending on what is meant by the term "all available information".

Weak Form Efficiency

The weak form of the efficient markets hypothesis asserts that the current price fully incorporates information contained in the past history of prices only. That is, nobody can detect mis-priced securities and "beat" the market by analyzing past prices. The weak form of the hypothesis got its name for a reason – security prices are arguably the most public as well as the most easily available pieces of information. Therefore, one should not be able to profit from using something that "everybody else knows". On the other hand, many financial analysts attempt to generate profits by studying exactly what this hypothesis asserts is of no value - past stock price series and trading volume data. This technique is called **technical analysis**

The empirical evidence for this forms of market efficiency, and therefore against the value of technical analysis, is pretty strong and quite consistent. After taking into account transaction costs of analyzing and of trading securities it is very difficult to make money on publicly available information such as the past sequence of stock prices.

How does one know the capital market is efficient in its weak form?
-to answer this question no one can find out the correlation between the security price over time.

- In an efficient capital market there should not exist a significant correlation between the security prices over time.
- An alternative method of testing the weakly efficiency market hypothesis is to formulate trading strategies using the security prices and compare their performance with the stock market performance.
- The capital market will be inefficient if the investors trading strategy could beat the market.

-weak form efficiency implies that excess returns can be carried by using investment strategies based on historical share price. It also implies that technical analysis techniques will be able to consistently produce excess returns though some form of fundamental analysis may not sill provide excess returns.

Semi-strong Form Efficiency

The semi-strong-form of market efficiency hypothesis suggests that the current price fully incorporates all publicly available information. Public information includes not only past prices, but also data reported in a company's financial statements (annual reports, income statements, filings for the Security and Exchange Commission, etc.), earnings and dividend announcements, announced merger plans, the financial situation of company's competitors, expectations regarding macroeconomic factors (such as inflation, unemployment), etc. In fact, the public information does not even have to be of a strictly financial nature. For example, for the analysis of pharmaceutical companies, the relevant public information may include the current (published) state of research in pain-relieving drugs.

The assertion behind semi-strong market efficiency is still that one should not be able to profit using something that "everybody else knows" (the information is public). Nevertheless, this assumption is far stronger than that of weak-form efficiency. Semi strong efficiency of markets requires the existence of market analysts who are not only financial economists able to comprehend implications of vast financial information, but also macroeconomists, experts adept at understanding processes in product and input markets. Arguably, acquisition of such skills must take a lot of time and effort. In addition, the "public" information may be relatively difficult to gather and costly to process. It may not be sufficient to gain the information from, say, major newspapers and company-produced publications. One may have to follow wire reports, professional publications and databases, local papers, research journals etc. in order to gather all information necessary to effectively analyze securities.

How can we test that the capital market is semi strong?

-One can study the effect of securities such as earning dividends, bonuses issues, right issues, changes in account policies, the speed with which the price of the share is adjusted to this information.

-The semi-strong form market implies that the share price reflect an event or inform very quickly and therefore it's is not possible for an investor to beat the market using such information.

Strong Form Efficiency

The strong form of market efficiency hypothesis states that the current price fully incorporates all existing information, both public/published and private/unpublished (sometimes called inside information). The main difference between the semi-strong and strong efficiency hypotheses is that in the latter case, nobody should be able to systematically generate profits even if trading on information not publicly known at the time. In other words, the strong form of EMH states that a company's management (insiders) are not be able to systematically gain from inside information by buying company's shares ten minutes after they decided (but did not publicly announce) to pursue what they perceive to be a very profitable acquisition. Similarly, the members of the company's research department are not able to profit from the information about the new revolutionary discovery they completed half an hour ago. The rationale for strong-form market efficiency is that the market anticipates, in an unbiased manner, future developments and therefore the stock price may have incorporated the information and evaluated in a much more objective and informative way than the insiders. Not surprisingly, though, empirical research in finance has found evidence that is inconsistent with the strong form of the EMH.

In conclusion we can say that strong form efficiency can be realized when the following characteristics surface.

-Share prices reflect no information, public and private and everyone can earn returns.
-If there are legal buyers to private information becoming public as with insider trading laws, strong form efficiency is possible except in the case where the laws are universally agreed upon.
-To test for strong for efficiency a market needs not exist where investors can consistently earn deficit returns over a short period of time.

-Even if some managers are not constantly observed to be beaten by the market, no reputation even that of strong form efficiency. Some observers dispute that the notion that market behaves consistently with the efficient market hypothesis especially in its stronger forms. Some cannot believe that man made markets are strong form efficient for reasons of insufficiency including slow diffusion of information , the greater power of some market participants(financial institutions) and existence of apparently sophisticated professional investors. Only a privileged few may have price knowledge of loss about to be enacted and this is why it's difficult to test for strong form efficiency in the capital market.
How the individual's decision making process, given the receipt of information, is reflected in the market prices of assets.

Naive hypothesis – asset prices are completely arbitrary and unrelated either to how much they will pay out in the future or to the probabilities of various payouts.

Speculative equilibrium hypothesis – investor's base their investment decisions entirely on their anticipation of other individuals' behavior with any necessary relation to the actual payoffs that the assets are expected to provide.

Intrinsic value hypothesis – prices will be determined by each individual's estimate of the payoffs of an asset without consideration of its resale value to other individuals.

Rational expectation hypothesis – prices are formed on the basis of the expected future payouts of the assets, including their resale value to their parties.

Question: *if the efficient market hypothesis is valid, are investment analysis and active fund managers worthwhile*?

Answer: the efficient market hypothesis suggests that all relevant information is quickly incorporated into security prices. This implies that there is no scope for making profits from fore casting stock prices.
Investment analysis is concerned with stock selection and/or market timing. Stock selection entails trying to ascertain mispriced investments with a view to buying underpriced securities and selling overpriced securities.
Market timing attempts to forecast the points in time at which markets turns upward or downwards. The EMH suggests that investment analysis is pointless on the ground that available information is already reflected in assets prices and therefore cannot be used to make forecasts of price changes.
Active fund management seeks to use the results of investment analysis to manage portfolios outperform benchmarks, such as stock indices. If investment analysis is ineffective, active fund management is pointless. Investors would do better to invest in funds that aim to track stock indices and thereby avoid the expense of investment analysis and active fund management.
However, there is a paradox for new information to become incorporated into security prices, there may need to be buying or selling based on that information .investors who undertake those trades could make profits. Those who are first to receive, or react to new information will make profits. Investment analysis and active fund management on the part of those who act quickest would be profitable. The absence of any profitable opportunities would require all investor, both buyers and sellers, to instantly adjust their prices expectation in the light of new information.

Question: *what is the relevance of the EMH to corporate financial managers?*

Answer: The relevance of the EMH for financial management is that, if the hypothesis holds true, the company's real financial position will be reflected in the share price. If the company makes a 'good' financial decision, this will be reflected in an increase in the share price. Similarly, a 'bad' financial decision will cause the share price to fall. In

order to maximize shareholders wealth then the financial manager need only to concentrate on maximizing the net present value of investment projects, and need give no consideration to matters such as the way in which the future position of the company will be reflected in the company's financial statements. The financial managers may utilize rational decision rules and have confidence that the market will rapidly cause the effects of those decisions to be reflected in the company's share prices.

Question: *what are the implication of the EMH to an investor and to company and managers?*

Answer:

To an investor:-

- There is no need to pay for investment research.
- Studying published accounts and stock market tips will not generate abnormal returns
- There are no bargains to be found on efficient stock exchanges

To company and managers:-

- Timing of new issues and rights issues is not important, since capital market securities are never under priced.
- Altering the financial statements will not mislead the market.
- An efficient market correctly reflects the value of a company and expectations about its future performance and returns. The financial manager should therefore focus on making good financial decisions which increase shareholders wealth as they will be correctly interpreted by the market and share price will adjust accordingly.

BEHAVIOURAL FINANCE

The efficient markets hypothesis (EMH) remains one of the cornerstones of modern finance theory. It implies that, on average, assets trade at prices equal to their intrinsic values. As we note in the text, the logic behind the EMH is straightforward. If a stock's price is "too low," rational traders will quickly take advantage of this opportunity and will buy the stock. Their actions will quickly push prices back to their equilibrium level. Likewise, if prices are "too high," rational traders will sell the stock, pushing the price down to its equilibrium level. Proponents of the EMH argue that prices cannot be systematically wrong unless you believe that market participants are unable or unwilling to take advantage of profitable trading opportunities.

While the logic behind the EMH is compelling, many events in the real world seem to be inconsistent with the EMH. This has spurred a growing field that is called ***behavioral finance theory***. Rather than assuming that investors are rational, behavioral finance theorists borrow

insights from psychology to better understand how irrational behavior can be sustained over time.
Pioneers in this field include psychologists Daniel Kahneman and Amos Tversky and Richard Thaler, who is a professor of finance at the University of Chicago. Their work has encouraged a growing number of scholars to work in this promising area of research.

Professor Thaler and his colleague, NicholasBarberis, have summarized much of this research in a recent article, which is cited below. They argue that behavioral finance theory's criticism of the EMH rests on two important building blocks. First, it is often difficult or risky for traders to take advantage of mispriced assets. For example, even if you know that a stock's price is too low because investors have over reacted to recent bad news, a trader with limited capital may be reluctant to buy the stock for fear that the same forces that pushed the price down may work to keep it artificially low for a long period of time. On the other side, during the recent stock market bubble, many traders who believed (correctly!) that stock prices were too high lost a lot of money selling stocks in the early stages of the bubble because stock prices went even higher before they eventually collapsed.

While the first building block explains why mispricing may persist, the second tries to understand how mispricing can occur in the first place. This component is where the insights from psychology come into play. For example, Kahneman and Tversky suggested that individuals view potential losses and potential gains very differently. If you ask an average person whether he or she would rather have $500with certainty or flip a fair coin and receive $1,000 if a head comes up and nothing if it comes out tails, most would prefer the certain $500, which suggests an aversion to risk. However, if you ask the same person whether he or she would rather pay $500 with certainty or flip a coin and pay $1,000 if it's heads and nothing if it's tails, most indicate that they would prefer to flip the coin. Other studies suggest that people's willingness to take a gamble depends on recent performance. Gamblers who are ahead tend to take on more risks, whereas those who are behind tend to become more conservative.

These experiments suggest that investors and managers behave differently in down markets than they do in up markets, which might explain why those who made money early in the stock market bubble continued to keep investing in these stocks, even as their prices went higher. Other evidence suggests that individuals tend to overestimate their true abilities. For example, a large majority (upward of 90 percent in some studies) of us believe that we have above average driving ability or above-average ability to get along with others. Barberis and Thaler point out that:

Overconfidence Bias

In business or trading, an overestimation of one's abilities and of the precision of one's forecasts. Overconfident people set overly narrow confidence intervals in making predictions. They tend to overweigh their own forecasts relative to those of others.

The self-serving attribution bias, under which individuals attribute past successes to their own skills and past failures to bad luck, can lead to overconfidence.

In the context of financial markets, the confidence of a self-attributing investor increases when public information is in line with his or her forecast, but it does not decrease as much when public information contradicts his or her forecast. The investor therefore gains excessive confidence over time, after receiving different confirming and disconfirming public news.

Familiarity heuristic bias

In psychology, a heuristic is an easy-to- compute procedure or "rule of thumb" that people use when forming beliefs, judgments or decisions. The familiarity heuristic was developed based on the discovery of the availability heuristic by psychologists Amos

Tversky and Daniel Kahneman ; it happens when the familiar is favored over novel places, people, things. The familiarity heuristic can be applied to various situations that individuals experience in day to day life. When these situations appear similar to previous situations, especially if the individuals are experiencing a high cognitive load, they may regress back to the state of mind in which they have felt or behaved before. This heuristic is useful in most situations and can be applied to many fields of knowledge; however, there are both positives and negatives to this heuristic as well.

Hindsight bias

The hindsight bias is the inclination to see events that have already occurred as being more predictable than they were before they took place. For example, after a situation occurs for the first time, you begin to notice it when it reoccurs and therefore because you have now experienced it, it's more readily available in your consciousness and you pull information and predict aspects of the future because of this and think that you "knew it all along.""Hindsight bias results from a biased reconstruction of the original memory trace, using the outcome as a cue" Hindsight bias can alter memories and therefore future predictions.

Cognitive Dissonance

The unpleasant emotion that results from believing two contradictory things at the same time. The study of cognitive dissonance is one of the most widely followed fields in social psychology. Cognitive dissonance can lead to irrational decision making as a person tries to reconcile his conflicting beliefs.

Let's say an investor decides in advance that he is going to purchase shares of a firm when the price drops to $78 a share. The price is currently at $80 a share. All of a sudden, the company's stock price starts going up. The investor's belief that the stock would be a good buy at $78 seems to be contradicted by the stock's current behavior. The investor decides to buy at $85 instead of $78 to reconcile the cognitive dissonance he is experiencing. This may not be as good of an investment decision, but the investor will rationalize himself into thinking it is, mainly to get rid of his feeling of cognitive dissonance.

House Money Effect

The tendency for investors to take more and greater risks when investing with profits. The house money effect gets its name from the casino phrase "playing with the house's money." The house money effect was first described by Richard H. Thaler and Eric J. Johnson of the Johnson Graduate School of Management of Cornell University.

The house money effect forecasts that investors are more prone to buy higher-risk stocks after a profitable trade. Some believe that the house money effect is an example of mental accounting, whereby capital is kept separate from recent profits, leading investors to view said profits as disposable. As a result, they are more inclined to take greater risks with the money.

Hindsight Bias

A psychological phenomenon in which past events seem to be more prominent than they appeared while they were occurring.

Hindsight bias can lead an individual to believe that an event was more predictable than it actually was, and can result in an oversimplification in cause and effect. It is studied in behavioral economics.

Hindsight bias is a fairly common occurrence in investing, since the pressure to time the purchase of securities in order to maximize return can often result in investors feeling regret at not noticing trends earlier. For example, an investor may look at the sudden and unforeseen death of an important CEO a something that should have been expected since the CEO was likely to be under a lot of stress.

Financial bubbles are often the subjects of substantial hindsight bias. Following the Dot

Com bubble in the late 1990s and Great Recession of 2007, many pundits and analysts tried to demonstrate how what seemed like trivial events at the time were actually harbingers of future financial trouble. If the financial bubble had been that obvious to the general population, it would have been more likely to be avoided.

Investors should be careful when evaluating how past events affect the current market, especially when considering their own ability to predict how current events will impact the future performance of securities and the overall market. Believing that one is able to predict

future results can lead to overconfidence, and overconfidence can lead to choosing stocks not for their financial performance but for personal reasons.

Disposition effect

The disposition effect is an anomaly discovered in behavioral finance. It relates to the tendency of investors to sell shares whose price has increased, while keeping assets that have dropped in value.

Investors are less willing to recognize losses (which they would be forced to do if they sold assets which had fallen in value), but are more willing to recognize gains. This is irrational behaviour, as the future performance of equity is unrelated to its purchase price. If anything, investors should be more likely to sell "losers" in order to exploit tax reductions on capital gains. In a study by Terrance Odean, this tax-motivated selling is only observed in December, the final opportunity to claim tax cuts by unloading losing stocks; in other months, the disposition effect is typically observed.

The disposition effect can be partially explained using loss aversion. More comprehensive explanations also use other aspects of prospect theory, such as reflection effect, or involve cognitive dissonance.

Behavioural finance is the study of the influence of psychology on the behavior of financial practioners and subsequent effects on market. Behavioural finance is of interest because if it helps explain why and how markets might be inefficient. Biasness give rise to excessive trading and retention of losing position well after the evidence indicates that the basis for original investment has changed. This shows that managers under-performs their benchmarks and most investors are aware of the facts, although the urge to deny over powers the rational conclusion.
Most of the standardized assumptions that underlie investment forecast and portfolio management are wrong. They fail to take into account **emotional** and **psychological bias** of those practicing the investment acts.
Fear, **greed**, **risk seeking and evasion** and peer **pressures** all play a role in the underperformance of many investment managers relative to their objectives. Behavioural finance with its roots in psychology of human decision making explains to us why most investment managers are:-

1. More confident than they should be in their forecasting ability.
2. Do not process information efficiently.
3. Experience illusion of control
4. Do not act as if the choices they make come from a probability distribution.
5. Give undue credence to management and research.

Question: *which systematic biasness can occurs in financial markets?*

Answer:-

- Tendency to give too much emphasis to the most recent information.
- Tendency to weight prospective losses about twice heavily as prospective profits. Prospects theory suggests that they be weighted equally.
- Overconfidence: - tendency on the part of investors to regard success as arising from their expertise while failures are due to bad luck or the action of others.
- Representativeness: - many investors extrapolate price movement. They believe if prices have been rising in the past then they will continue to rise, and conversely with falling prices.
- Conservatism: - investors are slow to change their views following the receipt of new information.
- Narrow framing: - tendency of investor to focus too narrowly.
- Ambiguity aversion suggests investors prefer to invest in companies that they feel they understand.
- Confirmation bias: - investors pay more attention to evidence that supports their opinions than to evidence that contradicts them.
- Cognitive bias: - it's the illusion of control

Efficient market and fundamental analysis

In finance the efficient markets hypothesis asserts that financial markets are informational efficient or that prices on traded assets e.g. Stocks, bonds or properties already reflect all known information and therefore are unbiased in the sense that they reflect collective belief of all investors about future prospect.

Efficient market hypothesis states that it's not possible to consistently outperform the market by using any information that the market already knows except through luck.

Fundamental and technical Analysis

When day trading, a trader makes the decision about what to trade, when to trade, and how to trade, using either fundamental or technical analysis. Both forms of analysis involve looking at the available information and making a decision about the future price of the market being traded, but the information that is used is completely different. Is it possible to use both fundamental and technical analysis together, but it is more common for a trader to choose one or the other.

Fundamental Analysis

Fundamental traders use information about the global and national economies, and the financial state of the companies involved, as well as non financial information such as current political and weather information. Fundamental traders believe that the markets will react to

events in certain ways and that they can predict future market prices based on these events. For example, if a company receives regulatory approval for a new product, a fundamental trader might expect the company's stock price to rise. Conversely, if a company has a financial scandal, a fundamental trader might expect its stock price to fall. Fundamental traders need access to all of the available information as soon as it is available, and are therefore often institutional traders with large support teams, rather than individuals. Fundamental analysis has probably been in use since there were markets to trade, and has traditionally been done manually, but as computing power increases it has become possible for some fundamental information to be processed automatically.

Technical Analysis

Technical traders use trading information (such as previous prices and trading volume) along with mathematical indicators to make their trading decisions. This information is usually displayed on a graphical chart and is updated in real time throughout the trading day. Technical traders believe that all of the information about a market is already included in the price movement, so they do not need any other fundamental information (such as earnings reports). There are many different types of charts and many different mathematical indicators. Some indicators are better suited to short term trading, and others are better suited for longer term trend following trading. Individual traders are usually technical traders. Technical analysis appears to have been used at least 200 years ago in Japan. Modern technical analysis is usually performed by the trader interpreting their charts, but can just as easily be automated because it is mathematical. Some traders prefer automatic analysis because it removes the emotional component from their trading, and allows them to take trades based purely on the trading signals.

ANOMALIES IN EFFICIENCY MARKET

Efficiency in the market does not rule out price anomalies because as much as the participants are aware of the information likelihood that through cartels they can manipulate commodity i.e. securities and assets is likely.
Some can force a variety of pricing hence face pricing problems such as unnecessary discounting and quoting prices below break-even point. The kinds of anomalies include:

1. Earnings Reports

It has been shown that an investor can profit from investing immediately when a company reports because it takes time for the market to absorb the new information. This goes against the EMH.

2. January Anomaly

The January effect goes against the EMH. Essentially the January effect indicates that as a result of tax-related moves, investors have been shown to profit by buying stocks in December as they are being sold for losses and then selling them again in January.

3. Price-Earnings Ratio
Investing using the P/E ratio valuation metric has been an anomaly against the EMH. It has been shown that investors can profit by investing in companies with a low P/E ratio.

4. Price-Earnings/Growth (PEG) Ratio
Investing using the PEG valuation metric has been anomaly against the EMH. It has been shown similar to the P/E ratio that investors profit by investing in companies with low PEG ratios.

5. Size Effect
Going against EMH, it has been shown that smaller companies, on a risk-adjusted basis, have greater returns their larger peers.

6. Neglected Firms
Neglected firms are firms that Wall Street analysts deem too small to cover. As a result, these firms tend to generate larger levels of return, negating the EMH.

Causes of market inefficiency or anomalies

1. Insider trading
This occurs when investors seek to obtain additional information from the relatives or friends who could be working in the company in which they intend to purchase securities from. These investors end-up receiving information earlier than other investors in the market.

2. Taxation effect
In instances whereby some companies are required to pay taxes while others are not required then those which pay taxes are likely to report lower profit when compared to those which do not pay tax. Hence market investors will end up over-valuing security prices of these companies which don't pay taxes and under-valuing security prices of these companies which pay taxes

3. Small business gap effect

Because of the sizes of the company the market may end up over-valuing or under-valuing its security prices e.g. security prices of small companies may be under-valued and vice versa

STOCK INDICES

An index is a numerical figures which measures relative change in variables between two periods. The index numbers are important because they show that the value of money, securities, commodities is fluctuating i.e. appreciating or depreciating accordingly as the index numbers of prices are rising/falling. A rise in the index numbers of prices will signify deterioration in the value of money and vice versa.

Index number classification will depend on variables they are intended to measure. An index is used to measure changes, which have occurred. Share indexes are used to measure changes, which have occurred for shares in specific stock exchange e.g. stock indices measures the changes of price or value changes where the value changes are brought about by changes in the capitalization of the share in the exchange. NSE index is based on share trading of 20 companies, which are considered very active. The 20 companies' account nearly 30% of NSE capitalization.

- A fall in NSE share index represents a fall in market price per share. Arise in NSE index represent arise in the market price per share.
- An index may act as an indicator of activities in NSE the higher the demand of the share, the higher is it market price and as a result the higher will be index.

Uses of index numbers

1. Price index numbers are used to measure changes in a particular group of prices and help us in comparing the movement in prices of one commodity with another. They are also designed to measure changes in purchasing power of money
2. Index numbers of industrial production provide a measure of change in the level of industrial production in a country.
3. Quantity index numbers show the rise/fall in the volume of production exports and imports
4. Import and export prices indices are used to measure changes in terms of trade of a country by the terms of trade is meant ratio of import to export prices.
5. Index numbers are also used to forecast business condition of a country and to discover seasonal fluctuations and business cycle.
6. Consumer price indices indicate the movement in retail prices of consumption goods and services.

The **stock exchange index** indicates the level of investment in stock exchange securities as compared to the base period.-this index is a measure of relative change from one point of time to another. Stock indices are constructed to measure general price movement in listed shares of a stock exchange. They are therefore important in measuring the market sentiments.NSE e.g. has its base year as 1966 at 100. It was a portfolio based index of its shares recent changes has been done on computation methodology and computation of the

index. The stock index is a geometric mean of 20 companies at the close of business each day.

Computation:

1. Closing share prices are multiplied in a similar manner
2. Previous day prices are multiplied in a similar manner
3. Divide the result in number 1 by the result in number2
4. Take 20th 100 of the above result in no.3multiply the result by previous day index, this gives today's index

i) Price weighted and value weighted indices

Price weighted index is a stock index in which each stock influence the index in proportion to its price per share

- The value weighted index is generated by adding the prices of each of the stock in the index and dividing them by the total number of stocks.
- Stocks with larger or higher price will be given more weight and therefore will have a greater influence over the performance of the index e.g. assume that the index contains only two stocks .one priced at sh.1 and the other priced at sh.10. The sh.10 shillings stock is weighted 9 times higher than the sh.1 stock. Overall this means that the index is composed of 90% of Sh.10 stocks and 10% of Sh. 1 stock.
- A change in the value of Sh.1 stock will not affect the index value by a large amount because it makes up only a small percentage of the index.

ii) Un weighted indices

It's a simple arithmetic/geometric average used to calculate stock index. Equal weight is invested in each share of the stocks in an index with equal shilling amounts invested in each underlying stock; because the stocks are equally weighted on a stock's performance, it will not have a dramatic effect on the performance of the index of a whole.

This differs from weighted index where some stocks are given more weight than others, usually based on their market capitalization.

iii) Global index

Global equity index covers securities in different countries and captures 98% of world's investable market capitalization. This covers every equity and sector relevant to international investor needs.

iv) Style index

It's a type of fundamentally weighted index that is designed to provide a benchmark for a particular type of strategy. It provides a fair bench mark for activity managed funds that follow a particular style i.e. it follows the performance ignoring cost.

A bond market index

It's a composite listing of bonds/fixed income instrument and a statistic relending composite value of its components. It is used as a tool in a portfolio management process to represent aggregate characteristics of underlying securities

When it comes to comparison of indices overtime this will enable investors to either withhold money securities or commodities they have now or in case they speculate a fall in value they might be willing to dispense with.

Market capitalization

This is market value of a company based on Number of shares issued of a company and their market price at specified period of time. Market capitalization may also represent the aggregate volume of transaction within NSE.

Market capitalization = No of shares traded X market price per share.

The higher the market capitalization the higher the activity of share trading, and vice versa

Benchmarking using indices

Most important type of bench marking from the point of view of investors is the benchmarking of performance of funds and portfolio

Use of benchmarks is one reason why so many different indices exist.

Indices are not the best benchmark for performance measurements due to range available.

Drawbacks of stock indices

1. 20 company's not true representation.
2. Thinness of the market — small changes in the above stocks tend to be considerably magnified in the index
3. 1966 base year too far in the past.
4. Relatively small price changes-Some stock prices do not change for weeks.
5. Lack of clear portfolio selection criteria.
6. Use of arithmetic instead of preferred geometric mean in computing the index.
7. New companies have been quoted and others deregistered.

FINANCIAL INSTITUTIONA AND INTERMEDIARIES

Financial institutions serve as intermediaries by channeling the savings of individuals, businesses, and governments into loans or investments. They are major players in the financial marketplace. They often serve as the main source of funds for businesses and individuals. Some financial institutions accept customers' savings deposits and lend this money to other customers or to firms. In fact, many firms rely heavily on loans from

institutions for their financial support. Financial institutions are required by the government to operate within established regulatory guidelines.

Key Customers of Financial Institutions

The key suppliers of funds to financial institutions and the key demanders of funds from financial institutions are individuals, businesses, and governments.

The savings that individual consumers place in financial institutions provide these institutions with a large portion of their funds. Individuals not only supply funds to financial institutions but also demand funds from them in the form of loans. However, individuals as a group are the *net suppliers* for financial institutions:

They save more money than they borrow.

Firms also deposit some of their funds in financial institutions, primarily in checking accounts with various commercial banks. Like individuals, firms also borrow funds from these institutions, but firms are *net demanders* of funds. They borrow more money than they save.

Governments maintain deposits of temporarily idle funds, certain tax payments, and Social Security payments in commercial banks. They do not borrow funds directly from financial institutions, although by selling their debt securities to various institutions, governments indirectly borrow from them. The government, like business firms, is typically a net demander of funds. It typically borrows more than it saves.

The different types of financial institutions are described in Table 1. The most important financial institutions that facilitate the flow of funds from investors to firms are commercial banks, mutual funds, security firms, insurance companies, and pension funds. Each of these financial institutions is discussed in more detail below

Commercial banks

Commercial banks accumulate deposits from savers and use the proceeds to provide credit to firms, individuals, and government agencies. Therefore they serve investors who wish to "invest" funds in the form of deposits. Commercial banks use the deposited funds to provide commercial loans to firms and personal loans to individuals and to purchase debt securities issued by firms or government agencies. They serve as a key source of credit to support expansion by firms. Historically, commercial banks were the dominant direct lender to firms. In recent years, however, other types of financial institutions have begun to provide more loans to firms.

Like most other types of firms, commercial banks are created to generate earnings for their owners. In general, commercial banks generate earnings by receiving a higher return on their use of funds than the cost they incur from obtaining deposited funds. For example, a bank may pay an average annual interest rate of 4 percent on the deposits it obtains and may earn a return of 9 percent on the funds that it uses as loans or as investments in securities. Such banks can charge a higher interest rate on riskier loans, but they are then more exposed to the possibility that these loans will default.

Although the traditional function of accepting deposits and using funds for loans or to purchase debt securities is still important, banks now perform many other functions as well. In particular, banks generate fees by providing services such as traveler's checks, foreign exchange, personal financial advising, insurance, and brokerage services. Therefore commercial banks are able to offer customers "onestopshopping."

Role of Commercial Banks as Financial Intermediaries

Commercial banks play several roles as financial intermediaries. First, they *repackage the deposits* received from investors into loans that are provided to firms. In this way, small deposits by individual investors can be consolidated and channeled in the form of large loans to firms. Individual investors would have difficulty achieving this by themselves because they do not have adequate information about the firms that need funds.

Second, commercial banks employ credit analysts who have the ability to *assess the creditworthiness* of firms that wish to borrow funds. Investors who deposit funds in commercial banks are not normally capable of performing this task and would prefer that the bank play this role.

Third, commercial banks have so much money to lend that they can *diversify loans* across several borrowers. In this way, the commercial banks increase their ability to absorb individual defaulted loans by reducing the risk that a substantial portion of the loan portfolio will default. As the lenders, they accept the risk of default. Many individual investors would not be able to absorb the loss of their own deposited funds, so they prefer to let the bank serve in this capacity. Even if a commercial bank were to close because of an excessive amount of defaulted loans, the deposits of each investor are insured.

Therefore the commercial bank is a means by which funds can be channeled from small investors to firms without the investors having to play the role of lender.

Fourth, some commercial banks have recently been authorized to *serve as financial intermediaries* by placing the securities that are issued by firms. Such banks may facilitate the flow of funds to firms by finding investors who are willing to purchase the debt securities issued by the firms. Therefore they enable firms to obtain borrowed funds even though they do not provide the funds themselves.

Other roles include: -

i. They provide a safe deposit for money and other valuables.

ii. They lend money to borrowers partly because they charge interest on the loans, which is a source of income for them, and partly because they usually lend to commercial enterprises and help in bringing about development.

iii. They provide safe and non-inflationary means for debt settlements through the use of cheques, in that no cash is actually handled. This is particularly important where large amounts of money are involved.

iv. They act as agents of the central banks in dealings involving foreign exchange on behalf of the central bank and issue travelers' cheques on instructions from the central bank.

v. They offer management advisory services especially to enterprises which borrow from them to ensure that their loans are properly utilized.

Some commercial banks offer insurance services to their customers eg. The Standard Bank (Kenya) which offers insurance services to those who hold savings accounts with it.
Some commercial banks issue local travelers' cheques, e.g. the Barclays Bank (Kenya). This is useful in that it guards against loss and theft for if the cheques are lost or stolen; the lost or stolen numbers can be cancelled, which cannot easily be done with cash. This also safe if large amount of money is involved.

Mutual Funds

A mutual fund is a professionally managed type of collective scheme that pools money from many investors and invests it in stock and other securities. It is a collection of stocks or bonds. This happens when a large number of people give their money to professionals, to manage and invest, with the aim of achieving a return and in accordance with the objective of the fund.
Mutual funds are managed under the company's Act where investors invest in shares.

Some of mutual funds and unit trusts in Kenya are:-

- ICEA money market fund
- Commercial bank market
- Old mutual money market fund
- British America
- Stanbic money market fund
- Dyer and Blair equity

Unit trusts

A unit trust fund is an investment scheme that pools money together from many investors who share the same financial objective to be managed by a group of professional managers who invest the pooled money in a portfolio of securities such as shares, bonds and money market instruments or other authorized securities to achieve the objectives of the fund. Unit trust are managed under the unit trust Act where investors invest in unit trust.

To invest in a unit trust fund, investors buy units through the fund manager at the prevailing selling price which is calculated daily. These units can be bought any time as long as the fund has not reached its maximum approved size. Unit holders can also sell their units back to the fund manager at the prevailing buying price.

Employee share ownership plan (ESOP)

An ESOP is simply an option by the employees of a company to buy the shares of that company at a price prescribed by the company. Normally, to make the ESOP attractive, the option is lower than the market price. The company normally has the right to determine the number of shares the employees gets which employees get them and the ownership is actually transferred. It is normally given to high caliber employees as a way of motivating them and retaining them in the company since they become shareholders.

Benefits of investing in collective investment schemes (mutual funds, unit trusts and ESOP)

1. **Diversification**: investors in unit trusts can access a broader range of securities than they could when investing on their own as individuals.
2. **Liquidity**: there is ease in selling and buying the units compared with investing directly in shares of companies where prices and opportunities to transact depend on the supply and demand at that time.
3. **Continuous professional management**: unit trusts are managed by a team of experienced professionals who manage the fund in a structured manner as opposed to the individual investor who may invest in a random fashion.
4. **Access to a broader array of assets**: unit trusts fund managers can trade in investment products that are normally inaccessible to the individual investor, such as government and corporate bonds, which may be restricted to institutional investors.
5. **Convenient record keeping and administration**: fund managers take care of various types of schemes: CIS offer various types of schemes such as income plan, growth plan, equity funds, debt funds, and balanced funds. An investor can therefore select a plan according to his needs.
6. **Scope for good return**: fund managers invest in various industries and sectors; therefore, the portfolio gets diversified, resulting in CIS generating equitable returns.
7. **Tax benefits**: the CIS income is tax exempt, and this can be extended to unit holders in form of better returns.

Hedge Fund

A hedge fund is an alternative investment vehicle available only to sophisticated investors, such as institutions and individuals with significant assets.

Like mutual funds, hedge funds are pools of underlying securities. Also like mutual funds, they can invest in many types of securities—but there are a number of differences between these two investment vehicles.

Hedge funds can invest in a wider range of securities than mutual funds can. While many hedge funds invest in traditional securities, such as stocks, bonds, commodities and real estate, they are best known for using more sophisticated (and risky) investments and techniques.

Hedge funds typically use long-short strategies, which invest in some balance of long positions (which means buying stocks) and short positions (which means selling stocks with borrowed money, then buying them back later when their price has, ideally, fallen).

Additionally, many hedge funds invest in "derivatives," which are contracts to buy or sell another security at a specified price. You may have heard of futures and options; these are considered derivatives.

Many hedge funds also use an investment technique called leverage, which is essentially investing with borrowed money—a strategy that could significantly increase return potential, but also creates greater risk of loss. In fact, the name "hedge fund" is derived from the fact that hedge funds often seek to increase gains, and offset losses, by hedging their investments using a variety of sophisticated methods, including leverage.

Hedge funds are typically not as liquid as mutual funds, meaning it is more difficult to sell your shares. Mutual funds have a per-share price (called a net asset value) that is calculated each day, so you could sell your shares at any time. Most hedge funds, in contrast, seek to generate returns over a specific period of time called a "lockup period," during which investors cannot sell their shares. (Private equity funds, which are similar to hedge funds, are even more illiquid; they tend to invest in startup companies, so investors can be locked in for years.)

Finally, hedge fund managers are typically compensated differently from mutual fund managers. Mutual fund managers are paid fees regardless of their funds' performance. Hedge fund managers, in contrast, receive a percentage of the returns they earn for investors, in addition to earning a "management fee", typically in the range of 1% to 4% of the net asset value of the fund. That is appealing to investors who are frustrated when they have to pay fees to a poorly performing mutual fund manager. On the down side, this compensation structure could lead hedge fund managers to invest aggressively to achieve higher returns—increasing investor risk.

As a result of these factors, hedge funds are typically open only to a limited range of investors. Specifically, U.S. laws require that hedge fund investors be "accredited," which means they must earn a minimum annual income, have a net worth of more than $1 million, and possess significant investment knowledge.

Insurance brokerage Companies

Insurance companies provide various types of insurance for their customers, including life insurance, property and liability insurance, and health insurance.

They periodically receive payments (premiums) from their policyholders, pool the payments, and invest the proceeds until these funds are needed to pay off claims of policyholders. They commonly use the funds to invest in debt securities issued by firms or by government agencies. They also invest heavily in stocks issued by firms. Therefore they help finance corporate expansion.

Insurance companies employ portfolio managers who invest the funds that result from pooling the premiums of their customers. An insurance company may have one or more bond portfolio managers to determine which bonds to purchase, and one or more stock portfolio managers to determine which stocks to purchase. The objective of the portfolio managers is to earn a relatively high return on the portfolios for a given level of risk. In this way, the return on the investments not only should cover future insurance payments to policyholders but also should generate a sufficient profit, which provides a return to the owners of insurance companies. The performance of insurance companies depends on the performance of their bond and stock portfolios.

Like mutual funds, insurance companies tend to purchase securities in large blocks, and they typically have a large stake in several firms. Therefore they closely monitor the performance of these firms. They may attempt to influence the management of a firm to improve the firm's performance and therefore enhance the performance of the securities in which they have invested.

Roles played by insurance companies in development of Kenya

i. Provide cover for business risks.
ii. Accumulate large sums of money from premium and this act as long term source of finance both to policy holders and other parties such as company selling shares.
iii. An insurance firm is one that plays the middle men role between the policy holders and insurance firms.
iv. Facilitates exchange of securities by linking policy holders to the insurance company.

Investment companies

These are firms that don't trade in goods and services but they invest on a speculative motive in order to get profits they can invest in securities, mortgages, real estate's etc.

Investment Banks and brokerage houses

These are institutions that buy new issue of securities for resale to other investors with a view of making profit. This mostly takes place in the primary markets where they buy a lot of floated securities i.e. shares, bonds, treasury bills and become sellers in the secondary market which is the determinant of the two markets.
Brokerage houses are institutions that comprise investment banks which facilitate investment process between these banks and the public. They don't earn a profit/interest but commission on the amount.

Micro-finance institutions

This refers to the provision of financial services to low income clients, including consumer and self employed. It also refers to movement that envisions a world in which as many poor and nearly poor households as possible have permanent access to an appropriate range of high quality financial services including not just credit but also savings insurance and fund transfer.

A micro-finance institution is an organization that provides small loans. These transformed into micro-financial institutions that have proved that the poor are bankable. Examples are k-rep bank, Jamii Bora and Faulu Kenya.

Challenges to micro finance institutions

Traditionally banks have not provided funds to clients with little or no cash income. Poor people fall below breakeven point i.e. banks lose money on providing loans or in any transaction they make. Some of the clear challenges poor people do not have collateral and they also default to re-pay the hence they are unreliable.

Importance of micro-finance

1. They provide financial services to self employed and low income earners
2. Major financier of small scale business
3. Provide their loans with an affordable rates
4. Supervise or inspect the business against which financial services is provided therefore acting as an impetus to having more people in the economic venture into business.

Syndication of commercial banks

It's the process of a group of banks coming together to combine their financial resources to create a large pool of loan to investors. The large pool of funds is more reliable and viable in relation to increased demand of credit facilities to long term investors.

Syndicated loans are available to government/private investors where banks participating in the syndicate combine funds to create loan for the borrowers. The default risk is therefore spread among the banks within the syndicate.

Benefits that would accrue to the capital market in your country from syndication by commercial banks

- Participating banks play useful roles by providing informative opinions and/or additional expertise even after securities has been issued
- Popular scheme for issuing securities to large and medium scale projects
- The ability of the customer to deal with single Bank/FI ("Lead Bank"and"Agent Bank")as a one-stop service point

- Syndication provides borrower/investor with a complete menu of available securities
- The opportunity for the borrower to establish a track record with many banks from just a single transaction

Diversification/sharing of risks, cost sharing and pooling of resources and reputation

Capital market regulation

The Kenyan capital market has attained a remarkable degree of growth are poised for further leap forward in the current world. The process of modernization and computerization has rendered the market not only abroad and liquid but also fair efficient. All concerned with the market. The investors, the issuers, market players and more importantly the regulators play a vital role. The stock exchange authority i.e. C.M.A, N.S.E council, the Retirement Benefit Authority, Insurance Regulatory Authority and above all the Kenyan government are the regulators of capital market.

ROLE OF CAPITAL MARKET AUTHORITY (CMA)

CMA was established in 1989 through the market authority Act Sec ii which includes the principles and objectives of the authority.
The act provide for:
Development of all aspects of the capital Market and in particular it emphasizes on the removal of impediments and creation of incentives for long-term investment productive enterprises.
The creation, maintenance and regulation of the CMA through the implementation of system in which the market participants are self regulatory and the creation of a market in which securities can be issued and traded in an orderly, fair and efficient manner.
Protection of investor's interests

Roles

1. The CMA has the responsibility of licensing and regulating stockbrokers, investment advisers, security dealers and the authority depositories.
2. The capital market authority is involved in the process of listing of new companies. Any company, intending to be quoted in the NSE must apply through CMA.
3. CMA is involved in the making of policies that would enhance the development of the capital market e.g. policy regarding the buying and selling of securities, policies on admission of individual and institutions to the capital market and generally policies on the introduction of securities and their regulations
4. The CMA acts as a watchdog for shareholders of listed companies. This is through regulating the operations of the listed company's so as to protect investors against penalty, insider trading or suspensions.
5. The authority assists in the development of new securities in the market. This is through research and evaluations of various recommendations of stakeholders in the

NSE. It is the responsibility of the CMA to evaluate whether there is need of new security and develop on appropriate policy

6. The CMA acts as a government advisor through the ministry of finance regarding policies affecting the capital markets.
7. Removes bottlenecks and creates awareness for investment in long term securities.
8. Serves as efficient bridge between the public and private sector.
9. Creates an environment which will encourage local companies to go public..
10. Implements government's programmes and policies with respect to capital market.

Roles to stock exchange in Kenya

1. Removes barriers on security transfer.
2. Introduce wide range of instruments in the market.
3. Decentralizations of its operations.
4. Encourage development of institutional investors such as pension firms and insurance firms.
5. Provide adequate information to players in the market. In order to prevent insider trading.
6. License more bankers.

Role of capital market authority in determination of share prices

i) The CMA does not in any way influence share price of quoted security.
ii) The prices of such securities are determined by the demand and supply mechanism.
iii) The CMA may: - Advice the company on the issue price of new securities.

- Alert investors if it feels that the issue price of certain securities is not in their interest.
- It guides against manipulation of share prices and insider trading.

CENTRAL DEPOSITORY SYSTEM (CDS)

It acts as a means of representing ownership and movements of securities. CDA account holders enjoy the convenience of obtaining electronic securities transfer and trade settlement.

Who may open CDS account?

1. An individual who has reached the age of 18 years.
2. A corporation within the context of a company's Act.
3. Any corporate body that is incorporated within Kenya.
4. A society under any written law relating to co-operative society.
5. Any society registered under societies Act
6. Statutory bodies incorporated under an act of parliament.

Need to open a CDS account.

It will facilitate buying and selling of shares and also to carry out other CDS transactions on all equity and non-equity counters (bonds, warrants etc) which have been prescribed into CDS.

How to open a CDS account

One can open a CDS account with any authorized depository agents. All stock broking companies in Kenya are currently ATS. If you are an individual investor you may go to an ADA of your choice. Procedure: -

a. Complete opening of your account form and two specimen signatures.
b. For Kenyans submit the documents together with two certified copies of your Kenya national identity card as for foreigners you need to pay accounts opening fee and submit two certified copies of your passport.

If you are a corporate investor:

a. Complete opening of accounts form and two specimen signature
b. Certificate of incorporation.

Your ADA will then open your CDS account and give you your CDS account number.

Objectives of applying Central Depository System

- Eliminate risks resulting from trading of material securities in the Capital Market. i.e. damage or loss or forgery.
- Get hold of all material securities at the central level through gradual withdrawal of securities traded in the markers and relieve issuers from printing securities certificates in the other hand.
- Simplify the process of trading in stock exchange as a result of dealing on balances and book entries instead of material securities.
- Increase the securities turnover due to completion of ownership transfer within a specified timeframe.
- Increase the market liquidity.
- Operating Settlement system according to Delivery Versus Payment (DVP) system.
- Relieve the issuers from cost, effort, time they take to print certificates for the original capital or any amendment thereon and print one certificate with total issuing value.
- Establish a database for all the securities issued and traded in the Egyptian Capital Market.
- Establish a database for securities owners and their relevant data.
- Foster investor's confidence through adhering to international standards.

TOPIC 4

TIME VALUE OF MONEY

CONCEPT OF TIME VALUE OF MONEY

Introduction

A shilling today is worth more than a shilling tomorrow. An individual would thus prefer to receive money now rather than that same amount later. A shilling in ones possession today is more valuable than a shilling to be received in future because, first, the shilling in hand can be put to immediate productive use, and, secondly, a shilling in hand is free from the uncertainties of future expectations (It is a *sure shilling)*.

Financial values and decisions can be assessed by using either future value (FV) or present value (PV) techniques. These techniques result in the same decisions, but adopt different approaches to the decision.

Future value techniques

Measure cash flow at the some future point in time – typically at the end of a projects life. The **Future Value (FV),** or terminal value, is the value at some time in future of a present sum ofmoney, or a series of payments or receipts. In other words the FV refers to the amount of money an investment will grow to over some period of time at some given interest rate. FV techniques use **compounding** to find the future value of each cash flow at the given future date and the sums those values to find the value of cash flows.

Present value techniques

Measure each cash flows at the start of a projects life (time zero).The **Present Value (PV)** is the current value of a future amount of money, or a series of future payments or receipts. Present value is just like cash in hand today. PV techniques use **discounting** to find the PV of each cash flow at time zero and then sum these values to find the total value of the cash flows.

Although FV and PV techniques result in the same decisions, since financial managers make decisions in the present, they tend to rely primarily on PV techniques.

COMPOUNDING TECHNIQUES

Two forms of treatment of interest are possible. In the case of **Simple interest**, interest is paid (earned) only on the original amount (principal) borrowed. In the case of **Compound interest**, interest is paid (earned) on any previous interest earned as well as on the principal borrowed (lent). Compound interest is crucial to the understanding of the mathematics of finance. In most situations involving the time value of money compounding of interest is

assumed. The **futurevalue** of present amount is found by applying compound interest over a specified period of time

The Equation for finding future values of a single amount is derived as follows:

Let

FV_n= future value at the end of period n

$PV\ (P_o)$ =Initial principal, or present value

k= annual rate of interest

n = number of periods the money is left on deposit.

The future value (FV), or compound value, of a present amount, Po, is found as follows.

At end of Year 1, $FV_1 = P_o\ (1+k)$ $= Po\ (1+k)^1$

At end of Year 2, $FV_2 = FV_1\ (1+k) = P_o(1+k)\ (1+k)$ $= Po\ (1+k)^2$

At end of Year 3, $FV_3 = FV_2\ (1+k) = Po\ (1+k)\ (1+k)\ (1+k)$ $= Po\ (1+k)^3$

A general equation for the future value at end of *n* periods can therefore be formulated as,

$$\mathbf{FV_n = Po\ (1+k)^n}$$

Example:

Assume that you have just invested Ksh100, 000. The investment is expected to earn interest at a rate of 20% compounded annually. Determine the future value of the investment after 3 years.

Solution:

At end of Year 1, $FV_1 = 100{,}000\ (1+0.2) = 120{,}000$

At end of Year 2, $FV_2 = 120{,}000\ (1+0.2)$ OR $\{\ 100{,}000(1+0.2)\ (1+0.2)\} = 144{,}000$

At end of Year 3, $FV_3 = 144{,}000(1+0.2) = 100{,}000\ (\ 1+0.2)\ (\ 1+0.2)\ (1+0.2) = 172{,}800$

Alternatively,

$$\mathbf{FV_n = Po\ (\ 1+k)^n}$$

At the end of 3 years, $\boldsymbol{FV_3 = 100{,}000\ (\ 1+0.2)^3 = Sh.172{,}800}$

Using Tables to Find Future Values

Unless you have financial calculator at hand, solving for future values using the above equation can be quite time consuming because you will have to raise (1+k) to the ***n***th power.

Thus we introduce tables giving values of $(1+k)^n$ for various values of *k* and *n.* Table A-3 at the back of this book contains a set of these interest rate tables. Table A-3 **Future Value of $1 at theEnd of n Periods**1 gives the **future value interest factors.** These factors are the multipliersused to calculate at a specified interest rate the future values of a present amount as of a given date. The future value interest factor for an initial investment of Sh.1 compounded at *k* percent for *n* periods is referred to as $FVIF_{k\,n.}$

Future value interest factors = $FVIF_{k\,n.} = (1+k)^n$.

$FV_n = Po * FVIF_{k,n}$

A general equation for the future value at end of *n* periods using tables can therefore be formulated as,

$$\boxed{FV_n = Po \times FVIF_{k,n}}$$

The FVIF for an initial principal of Sh.1 compounded at k percent for n periods can be found in Appendix Table A-3 by looking for the intersection of the *n*th row and the *k* % column. A future value interest factor is the multiplier used to calculate at the specified rate the future value of a present amount as of a given date.

From the example above, **$FV_3 = 100{,}000 \times FVIF_{20\%,3\ years}$**

=100,000 ×
1.7280
=sh.172,
800

Future value of an annuity

So far we have been looking at the future value of a simple, single amount which grows over a given period at a given rate. We will now consider annuities.

An **annuity** is a series of payments or receipts of equal amounts (i.e. a pensioner receiving Sh.100,000 per year for ten years after his retirement). The two basic types of annuities are the **ordinary annuity** and the **annuity due.** An*ordinary annuity*is an annuity where the cash flowoccurs at the end of each period. In an *annuity due* the cash flows occur at the beginning of each period. This means that cash flows are sooner received with an annuity due than for a similar ordinary annuity. Consequently, the future value of an annuity due is higher than that of an ordinary annuity because the annuity due‟s cash flows earn interest for one more year.

Example:

Determine the future value of a shs100, 000 investment made *at the end* of every year for 5 years assume the required rate of return is 12% compounded annually.

Solution.

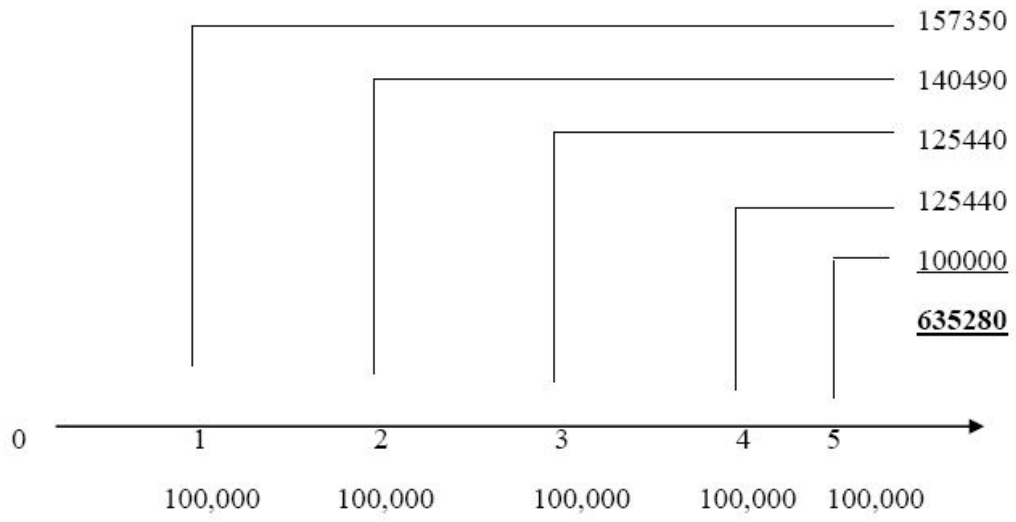
The future value interest factor for an n-year, k%, ordinary annuity (FVIFA) can be found by

adding the sum of the first n-1 FVIFs to 1.000, as follows;

End of year	Amount deposited	Number of years Companied	Future value interest factor (FVIF) from discount tables(12%)	Future value at end of year
1	100,000	4	1.5735	157350
2	100,000	3	1.4049	140490
3	100,000	2	1.2544	125440
4	100,000	1	1.12	112000
	100,000	0	1	100000
FV after 5 years.				**635280**

The Time line and Table **(ordinary annuity)** below shows the future value of a Sh.100,000 5-year annuity compounded at 12%.

Timeline



The formula for the future value interest factor for an annuity when interest is compounded annually at *k* percent for *n* periods (years) is

$$\boldsymbol{FVIFA_{k,n}} = \sum_{i=1}^{n}(1+k)^{i=1} = \frac{((1+k)^{i=1}-1)}{k}$$

Using Tables to Find Future Value of an Ordinary Annuity

Annuity calculations can be simplified by using an interest table. Table A-4 **Future Value of Annuity** The value of an annuity is founding by multiplying the annuity with an appropriate multiplier called the **future value interest factor for an annuity (FVIFA)** which expresses the value at the end of a given number of periods of an annuity of Sh.1 per period invested at a stated interest rate.

The future value of an annuity (PMT) can be found by,

$$\mathbf{FVA_n = PMT \times (FVIFA_{k,n}}$$

Where FVA_n is the future value of an n-period annuity, PMT is the periodic payment or cash flow, and $FVIFA_{k,n}$ is the future value interest factor of an annuity. The value $FVIFA_{k,n}$ can be accessed in appropriate annuity tables using *k* and *n.* The Table A-4 gives the PVIFA for an ordinary annuity given the appropriate *k* percent and *n*-periods.

From the above example,

$FVA_5 = 100{,}000 \times FVIFA_{12\%,\ 5\ years}$

=100,000×6.35280
=sh.635280

Finding Value of an Annuity Due

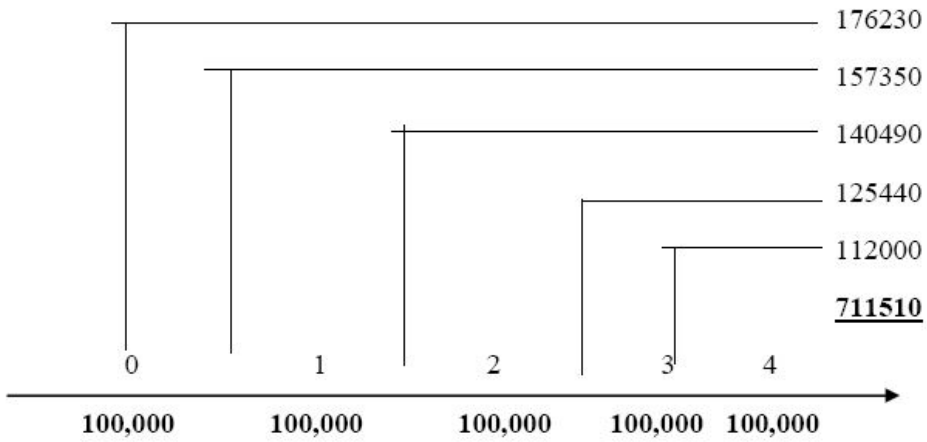
Assuming in the above example the investment is made at the beginning of the year rather than at the end.

What is the value of Sh.100,000 investment annually *at the beginning* of each of the next 5 years at an interest of 12%.

Beginning of year deposit	Amount deposited	Number of Years companied	Future value interest factor (FVIF) from discount tables 12%	Future valueat end of year
1	100,000	5	1.7623	176230
2	100,000	4	1.5735	157350
3	100,000	3	1.4049	140490
4	100,000	2	1.2544	125440
5	100,000	1	1.12	112000
FV after 5 years.				**711510**

The Time line and Table below shows the future value of a Sh.100, 000 5-year annuity due compounded at 12%.

Timeline



Using Tables to Find Future Value of an Annuity Due

A simple conversion can be applied to use the FVIFA (ordinary annuity)in Table A-4 with annuities due. The Conversion is represented by Equation below.

$$\mathbf{FVIF_{k,n}}\text{(annuity due)} = \mathbf{FVIF_{k,n}}\text{(ordinary annuity)} \times (1 + k)$$

From the above example,

$\mathbf{FVIFA_{12\%,\,5yrs}}$(annuity due) =$\mathbf{FVIFA_{12\%,5yrs}}$(ordinary) x (**1 + k**)

=**6.35280** x (1+.12)

=7.115136

Therefore future value of the annuity due = 100, 000 x 7.115136

=sh.711, 511.36

Compounding More Frequently.

Interest is often compounded more frequently than once a year. Financial institutions compound interest semi-annually, quarterly, monthly, weekly, daily or even continuously.

Semi Annual Compounding

This involves the compounding of interest over two periods of six months each within a year. Instead of stated interest rate being paid once a year one half of the stated interest is paid twice a year.

Example

Sharon decided to invest Sh.100,000 in savings account paying 8% interest compounded semi annually. If she leaves the money in the account for 2 years how much will she have at the end of the two years?

She will be paid 4% interest for each 6-months period. Thus her money will amount to.

FV_4 = 100,000 (1+.08/2)^{2*2} =100,000(1+.04)^4 =Sh.116,990

Or

Using tables = 100,000 x $FVIF_{4\%,4periods}$ =100,000 x 1.17 = Sh.117,000

Quarterly Compounding

This involves compounding of interest over four periods of three months each at one fourth of stated annual interest rate.

Example

Suppose Jane found an institution that will pay her 8% interest compounded quarterly. How much will she have in the account at the end of 2 years?

FV_8 = 100,000(1+.08/4)^{4*2}=100,000(1+.02)^8 =100,000 x 1.1716 = 117,160

Or,

Using tables 100,000 x $FVIF_{2\%, 8periods}$= 100,000*1.172 = 117,200

As shown by the calculations in the two preceding examples of semi-annual and quarterly compounding, the more frequently interest is compounded, the greater the rate of growth of an initial deposit. This holds for any interest rate and any period.

General Equation for compounding more frequently than annually

Let;

m = the number of times per year interest is

compounded n= number of years deposit is held.

k= annual interest rate.

$$FV_{n,k} = P_0\left(1+\frac{k}{m}\right)^{m*n}$$

Continuous Compounding

This involves compounding of interest an infinite number of times per year, at intervals of microseconds - the smallest time period imaginable. In this case m approaches infinity and through calculus the Future Value equation 2.1 would become,

FV_n(continuous compounding) = Po x $e^{k \times n}$

Where there is the exponential function, which has a value of 2.7183. The FVIFk,n (continuous compounding) is therefore e^{kn} , which can be found on calculators.

Example
If Jane deposited her 100,000/= in an institution that pays 8% compounded continuously, what would be the amount on the account after 2 years?

Amount = 100,000 x $2.718^{.08*2}$ = 100,000 x $2.718^{0.16}$ =100,000*1.1735 =117,350

DISCOUNTING TECHNIQUES

The process of finding present values is referred to as **discounting.** It is the inverse of compounding and seeks to answer the question. "If I can earn k% on my money, what is the most I will be willing to pay now for an opportunity to receive FV shillings n periods from now?" The annual rate of return k% is referred to as the discount rate, required rate of return, cost of capital, or opportunity cost.

The present value as the name suggests, is the value today of a given future amount. Recall the basic compounding formula for a lump sum;

$FV_n = P_o (1+k)^1$ Therefore making P the subject

$$P_o = \frac{FV_n}{(1+k)^n}$$

$$PV_{k,n} = \frac{FV_n}{(1+k)^n} = FV_n \text{ x } \frac{1}{(1+k)^n}$$

Example:
Assume you were to receive sh. 172,800 three years from now on an investment and the required rate of return is 20 %. What amount would you receive today to be indifferent?
Solution.
Recall previous example on FV

$PV_{20\%,3yrs}$= 172,800/(1 + 0.20)^3 =172,800/1.728 = Sh.100,000

PV=Sh.100,000

FV_5 = Sh.172800

Using Present Value Interest Factor (PVIF) Tables

The factor denoted by $\frac{1}{(1+k)^n}, or (1+K)^{-n}$ as above is called the present value interest factor (PVIF). The PVIF is the multiplier used to calculate at a specified discount rate the present value of an amount to be received at a future date. The $PVIF_{k,n}$ is the present value of one shilling discounted at k% for n-periods.

Therefore the present value (PV) of a future sum (FV_n) can be found by

PV = FV_n x ($PVIF_{k,}$ n).

In the preceding example the PV could be found by multiplying Sh. 172,800 by the relevant PVIF. Table A - 1 **Present Value of $1 Due at the End of n Periods** gives a factor of 0.5787for 20% and 3 years.

PV = 172800 x 0.5787 = Sh.99, 999.36
= sh. 100,000

Present Value of a Mixed Cashflows
We determine the PV of each future amount and then add together all the individual PVs

Example

The following is a mixed stream of cash flows occurring at the end of year

Year	Cash flow
	sh.000
1	400
2	800
3	500
4	400
5	300

If a firm has been offered the opportunity to receive the above amounts and if it‟s required rate of return is 9% what is the most it should pay for this opportunities?

Solution

Year (n)	Cash flow	$PVIF_{9\%, n}$	PV
1	400,000	0.917	366,800
2	800,000	0.842	673,600
3	500,000	0.775	386, 000
4	400,000	0.708	283,200
5	300,000	0.65	195,000
		PV	**1,904,600**

Present Value of an Annuity

The method for finding the PV of an annuity is similar for that of a mixed stream but can be simplified using **present value interest factor of an annuity (PVIFA) tables.**

The present value interest factor of an annuity with end–of-year cash flows that are discounted at k per cent for n period are

$$PVIFA_{K,n} = \sum_{t=1}^{n} \frac{1}{(1+k)^n} = \frac{1}{k}\left[1 - \left(\frac{1}{1+k}\right)^n\right]$$

Table A - 2 **Present Value of an Annuity** provides the $PVIFA_{k,n,}$ which can be used in calculating the present value of an annuity (PVA) as follows:

$$\mathbf{PVA = PMT \times PVIFA_{k\,n}}$$

Example

Assume that a project will give you sh. 1000 at the end of each year for 4 years .What is the maximum amount would you be willing to pay for that project if the required rate of return is 10%.

Solution

The PVIFA at 10% for 4 years ($PVIFA_{10\%, 4yrs}$) from Table A-2 is 3.1699.

Therefore, PVA = 3.1699X 1000 = **Sh.3, 169.9**

(Confirm the answer with the above equation).

Present Value of an Annuity Due.

From the above example, assume that the project gives you sh. 1000 *at the beginning* of each year for 4 years.

$\boldsymbol{PVIFA_{k,n}}$(annuity due) = $\boldsymbol{PVIF_{k,n}}$(ordinary annuity) x $\boldsymbol{(1+k)}$

$= 3.1699 \times (1+0.1)$

$=3.48689$

Therefore future value of the annuity due = 1000 x 3.48689

=Sh.3, 486.89

Present Value of Perpetuity

Perpetuity is an annuity with an infinite life – never stops producing a cash flow at the end of each year forever.

The PVIF for a perpetuity discounted at the rate k is

$$PVIFA_{k,\alpha} = 1/k$$

Example

Wetika wishes to determine the PV of a Sh.1000 perpetuity discounted at 10%.

The present value of the perpetuity is 1000 x $PVIFA_{k,\alpha}$ = 1000 x 1/0.1= Sh.10, 000.

This implies that the receipt of Sh.1,000 for an indefinite period is worth only Sh .10,000 today if Wetika can earn 10% on her investments (If she had Sh.10,000 and earned 10% interest on it each year, she could withdraw Sh.1000 annually without touching the initial Sh.10,000).

Deposits to Accumulate a Future Sum

It may be necessary to find out the periodic deposits that should lead to the built of a needed sum of money in future.

We can use the expression below, which is a rewriting of $\mathbf{FV_n = Po \times FVIF_{k,n}}$.

$\mathbf{PMT = FVA_n / FVIFA_{k\ n}}$

Where PMT is the periodic deposit, FVA_n is the future sum to be accumulated, and $FVIFA_{k\ n}$ is the future value interest factor of an n-year annuity discounted at k%.

Example

Ben needs to accumulate Sh. 5 million at the end of 5 years to purchase a company. He can make deposits in an account that pays 10% interest compounded annually. How much should he deposit in his account annually to accumulate this sum?

Solution

$\mathbf{PMT = FVA_n / FVIFA_{k\ n}}$ **= 5,000,000/6.105= Sh.819,000**

Example

Suppose you want to buy a house in 5 years from now and estimate that the initial down payment of Sh. 2 million will be required at that time. You wish to make equal annual end of year deposits in an account paying annual interest of 6%. Determine the size of the annual deposit.

$FVA_N = PMT\ X\ FVIFA_{K,\ N}$

$PMT = FVAn / FVIFA_{k\ n}$

PMT = 2,000,000/5.637= Sh.354,799

Finding unknown Interest Rate

A situation may arise in which we know the future value of a present sum as well as the number of time periods involved but do not know the compound interest rate implicit in the situation. The following example illustrates how the interest rate can be determined.

Example

Suppose you are offered an opportunity to invest Sh.100‟000 today with an assurance of receiving exactly Sh.300,000 in eight years. The interest rate implicit in this question can be found by rearranging $\mathbf{FV_n = Po \times FVIF_{k,n}}$ as follows.

$FV_8 = P_0\ (FVIF_{k,\ 8})$

$300,000 = 100,000\ (FVIFK_{k,8})$

$FVIF_{k,\ 8} = 300,000 / 100,000 = 3.000$

Reading across the *8*-period row in the FVIFs table (Table A-3) we find the factor that comes closest to our value of 3 is 3.059 and is found in the 15% column. Because 3.059 is slightly larger than 3 we conclude that the implicit interest rate is slightly less than 15 percent.

To be more accurate, recognize that

$FVIF_{k,8} = (1+k)^8$

$(1+k)^8 = 3$

$(1+k) = 3^{1/8} = 3^{0.125}$

$1+k = 1.1472$

$k = 0.1472 = 14.72\%$

LOAN AMORTIZING SCHEDULE

Amortizing Loan

An important application of discounting and compounding concepts is in determining the payments required for an installment – type loan. The distinguishing features of this loan is that it is repaid in equal periodic (monthly, quarterly, semiannually or annually) payments that include both interest and principal. Such arrangements are prevalent in mortgage loans, auto loans, consumer loans etc.

Amortization Schedule.

An amortization schedule is a table showing the timing of payment of interest and principal necessary to pay off a loan by maturity.

Example

Determine the equal end of the year payment necessary to amortize fully a Sh.600,000, 10% loan over 4 years. Assume payment is to be rendered (i) annually, (ii) semi-annually.

Solution

(i) Annual repayments

First compute the periodic payment using Equation

PMT = $PVA_n / PVIFA_{k,n.}$

Using tables we find the $PVIFA_{10\%,4yrs} = 3.170$, and we know that PVA_n = Sh.600,000

PMT = 600,000/3.170 = Sh.189, 274 per year.

Loan Amortization schedule

			Payments		
End of year	**Loan payment**	**Beg. Of year principal**	**Interest**	**Principal**	**End of year principal.**
			[10%x (2)]	[(1) – (3)	[(2) – (4)]
	(1)	(2)	(3)	(4)	(5)
1	189,274	600,000	60,000	129,274	470,726
2	189,274	470726	47,073	142,201	328,525
3	189,274	328525	32,853	156,421	172,104
4	189,274	172104	17,210	172,064	-

(ii) Semi-annual repayments

For semi-annual repayments the number of periods, *n,* is 8 and the discount rate is 5%.

Let"s compute the periodic payment using Equation

PMT = PVA_n /$PVIFA_{k,n.}$

Using tables we find the $PVIFA_{5\%,8periods}$ =6.4632, and we know that PVA_n = Sh.600,000

PMT = 600,000/6.4632 = Sh.92,833 per year.

Loan Amortization schedule

			Payments		
End of period (6months)	**Loan payment**	**Beginning of year principal**	**Interest**	**Principal**	**End of period principal.**
			[5%x (2)]	[(1) – (3)	[(2) – (4)]
	(1)	(2)	(3)	(4)	(5)
1	92833	600,000	30,000	62,833	537,167
2	92,833	537,167	26,858	65,975	471,192
3	92,833	471,192	23,559	69,274	401918
4	92,833	401, 918	20,096	72,737	329,181
5	92,833	329,181	16,459	76,374	252,807
6	92,833	252,807	12,481	80,192	172,615
7	92,833	172,615	8,631	84,202	88,413
8	92,833	88,413	4,421	88,412	-0-

Determining Interest or Growth Rate

It is often necessary to calculate the compound annual interest or growth rate implicit in a series of cash flows. We can use either PVIFs or FVIFs tables. Let"s proceed by way of the following illustration.

Example

Roy wishes to find the rate of interest or growth rate of the following series of cash flows

Year	Cash flow (Sh.)
2004	1,520,000
2003	1,440,000
2002	1,370,000
2001	1,300,000
2000	1,250,000

Solution

Using 2000 as base year, and noting that interest has been earned for 4 years, we proceed as follows:

Divide amounts received in the earliest year by amount received in the latest year.
1,250,000/1,520,000 = 0.822. This is the $_{PVIFk,4yrs}$. We read across row for 4 years for the interest rate corresponding to factor 0.822. In the row for 4 year in table of Table A-3 of PVIFs, the factor for 5% is .823, almost equal to 0.822. Therefore interest or growth rate is approximately 5%.
Note that the $_{FVIFk,4yrs}$ (1,520,000/1,250,000) is 1.216. . In the row for 4 year in table of Table A-1 of FVIFs, the factor for 5% is 1.2155 almost equal to 1.216.We estimate the growth rate to be 5% as before.

TOPIC 5

VALUATION CONCEPTS IN FINANCE

Introduction

In finance, valuation is the process of estimating what something is worth. Valuation often relies on fundamental analysis (of financial statements) of the project, business, or firm, using tools such as discounted cash flow or net present value. As such, an accurate valuation, especially of privately owned companies, largely depends on the reliability of the firm's historic financial information. Items that are usually valued are a financial asset or liability. Valuations can be done on assets (for example, investments in marketable securities such as stocks, options, business enterprises, or intangible assets such as patents and trademarks) or on liabilities (e.g., bonds issued by a company).

Valuation is used to determine the price financial market participants are willing to pay or receive to buy or sell a business. In addition to estimating the selling price of a business, the same valuation tools are often used by business appraisers to resolve disputes related to estate and gift taxation, divorce litigation, allocate business purchase price among business assets, establishing a formula for estimating the value of partners' ownership interest for buy-sell agreements, and many other business and legal purposes. Therefore, not only do managers want to keep reliable financial statements so that they can know the value of their own businesses, but they also want to manage finances well to enhance the value of their businesses to potential buyers, creditors, or investors.

CONCEPT OF VALUE

MARKET VALUE

Market value or **OMV** (Open Market Valuation) is the price at which an asset would trade in a competitive auction setting. Market value is often used interchangeably with ***open market value***, ***fair value*** **or** ***fair market value*****,** although these terms have distinct definitions in different standards, and may differ in some circumstances.

International Valuation Standards defines market value as "the estimated amount for which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently, and without compulsion."

Market value is a concept distinct from market price, which is "the price at which one can transact", while market value is "the true underlying value" according to theoretical standards. The concept is most commonly invoked in inefficient markets or disequilibrium situations where prevailing market prices are not reflective of true underlying market value.

For market price to equal market value, the market must be informationally efficient and rational expectations must prevail.

BOOK VALUE

Book value may be defined as present or depreciated financial worth of the property. It is determined by historical costs and the accounting estimate which is based on the criterion of acquisition costs and the cost of production.

The value of major securities that are in the business' accounting is estimated by the number of securities and their nominal value adjusted for any premiums or discounts and the amount of their depreciation. When talking about shares, it also includes the amount of retained earnings and the amount of any backups.

Asset book value

The book value of an asset is the cost of an asset at the moment of buying. That value is decreased over time because of depreciation, depletion and amortization. These processes are diminishing the initial value of an asset and they are considered to be company's costs. Supplies and consumables are not assets, but rather expenses.

The main advantage

The main advantage of this concept is the value of the objectivity its foundation has. Due to the inactivity and historical conservatism, it is not the most suitable for determining fair or intrinsic value.

The difference between book value and market value

While book value represents pure, theoretical worth of a company according to its financial reports, market value is determined by the stock market. Talking about the value of a company usually means referring to its market value.

The relationship between these two values can be represented like this:

1. Book value is higher than market value – it means that the market doesn't believe that the company is worth the amount that is book value.
2. Book value is lower than market value – this case happens when the market sees the potential in the company and it's usually the case with constantly profitable companies.
3. These two values are equal – the market doesn't have motives to estimate higher or lower price of the company than stated in the books.

Their relationship is important because they pretty much depend on each other. In fact, there is a formula determining what is called the price-to-book ratio and it looks like this:

Price to book ratio = share price / (shareholders equity/number of shares outstanding)

When book value and market value are equal, the result of the above equation is 1. Anything less than 1 means that the book value is higher, and any result above 1 means that the market value is higher.

REPLACEMENT VALUE

Replacement value is the cost to replace the assets of a company or a property of the same or equal value. The replacement cost asset of a company could be a building, stocks, accounts receivable or liens. This cost can change depending on changes in market value.

Also referred to as the price that will have to be paid to replace an existing asset with a similar asset.

INTRINSIC VALUE

In finance, **intrinsic value** refers to the value of a company, stock, currency or product determined through fundamental analysis without reference to its market value. It is also frequently called **fundamental value**. It is ordinarily calculated by summing the discounted future income generated by the asset to obtain the present value. It is worthy to note that this term may have different meanings for different assets.

VALUATION OF FIXED INCOME SECURITIES

Fixed income analysis is the valuation of fixed income or debt securities, and the analysis of their interest rate risk, credit risk, and likely price behavior in hedging portfolios. The analyst might conclude to buy, sell, hold, hedge or stay out of the particular security.

Fixed income products are generally bonds issued by various government treasuries, companies or international organizations. Bond holders are usually entitled to coupon payments at periodic intervals until maturity. These coupon payments are generally fixed amounts (quoted as percentage of the bond's face value) or the coupons could float in relation to LIBOR or another reference rate.

The cash flow of a fixed income product generally consists of several coupon payments over the period of the bond's life, and repayment of the principal at the time of maturity. Since these cash flows occur at several times in the future, the "Time Value of Money" approach is used to find the "Present Value" of each cash flow. The sum of all the present values of the bonds cash inflows of the bond is its theoretical value.

Following are the typical questions an analyst finds answers for:

- Does the real interest rate built into the yield make sense?
- Is the real interest rate in line with the expected GDP growth rate (in case of treasury bonds) or earnings growth rate (in case of corporate bonds)?
- What is the expectation of GDP growth ? Where do we stand in the economy cycle?

- Where do we stand in the business cycle of the particular company, or economic cycle of the particular country?
- Is there any change expected in the basic real interest rate in the near future?
- Do the prevailing monetary and economic conditions force any monetary easing or tightening so that the base real rate will get changed?
- Is the inflation condition worsening or improving?
- Are the financial authorities in the country pro-acting or re-acting to the forces of inflation and economic conditions?
- Is the risk premium built into the yield enough to compensate for the risks?
- What are the likely risks the market has currently priced into the premium and what are the new or hidden risks the market has overlooked and to what extent?
- What is the nature and volume of demand for a particular bond?

The demand for fixed income products comes from banks, insurance companies, pension fund companies, endowment organisations, External Government Treasuries, individual investors like retirees and widows who need regular fixed cash in-flow.

The Fixed Income Analyst covers the term structure or yield curve analysis too. This is in simple terms, analysing all bonds issued by the same entity for different maturities. Such analysis enables one to understand the pricing differences between maturities comparable inter-market bonds

The approaches for analysing fixed income products are broadly as follows: Fundamental approach; Technical Approach; relative value Approach.

Valuation of bonds

This will depend on expected cash flows consisting of annual interest plus the principal amount to be received at maturity. The appropriate rate of capitalization or discount rate to be applied will depend upon the riskiness of the bond e.g. government bonds are less risky and will therefore call for lower discount rates than similar bonds issued by private companies which will call for high rate of discount.

Valuation of bonds with maturity period

When a bond or debenture has reached maturity, its value can be determined by considering annual interest payments plus its terminal or maturity and this is done using the P.V. concept to discount the cash flows and the result will be compared to the market value of the bond to ascertain whether it has overvalued or undervalued.

$$\sum_{t=1}^{n} \frac{Int}{(1+kd)^t} + \frac{M}{(1+kd)^n}$$

Where: Int = Annual interest
Kd = Required rate of return
M = Terminal/maturity value
n = Number of years to maturity

Example

K is contemplating purchasing a 3 year bond worth 40,000/= carrying a nominal coupon rate of interest of 10%. K required rate of return is 6%.

What should he be willing to pay now to purchase the bond if it matures at par?

Solution

Int = 10% ×40,000 = 4,000 p.a.

n = 3 yrs

Kd = 6%

M = 40,000

$$Vd = \frac{4,000}{(1.06)^1} + \frac{4,000}{(1.06)^2} + \frac{4,000}{(1.06)^3} + \frac{40,000}{(1.06)^3}$$

$$= 4,000 \times PVAF_{6\%,3} + 40,000 \times PVIF_{6\%,3}$$

$$= (40,000 \times 2.673) + (40,000 \times 0.840) = 44,292$$

CERTIFICATES OF DEPOSIT (CDS)

A certificate of deposit (CD) is a debt instrument sold by a bank to depositors. It pays annual interest of a given amount and at maturity pays back the original purchase price. The interest rate on a large CD is set by negotiation between the issuing institution and its customer and it generally reflects the prevailing market conditions.

Example

A six month negotiable CD for Ksh. 100,000 with an interest rate of 7.5% would receive back at the end of 180 days:

$$\text{Ksh.}100,000 \times \left(1 + \frac{180}{360} \times 0.075\right) = \text{Ksh. } 103,750$$

The yield on CDs is usually slightly above that of T-bills due to greater default risk, a thinner resale market and the tax exemptions allowed on T-bill earnings.

CDS are an important source of money for commercial banks, from corporations, mutual funds, charitable institutions, government agencies and the general public.

VALUATION OF SHARES

The valuation of securities and shares in particular is necessary in the following aspects:

i) To facilitate take-over bids
ii) To allow for mergers.
iii) To facilitate for company accounts disclosure
iv) For purposes of acquisitions or disposal of blocks of shares.
v) For purposes of computing capital gains tax (not applicable in Kenya at present)
vi) For tax payer's executors in assessing the capital transfers processes
vii) For ascertaining stamp duty payable.

However, a number of parties are interested in the value of shares and securities and such will include:

a) Company shareholders, directors and vendors of the company.
b) The existing and prospective shareholders.
c) Buyers of a company.
d) Transferee and transferor parties, in particular from the point of view of income tax.
e) Income tax department.

In this valuation, it is necessary to look at a company form:

i) Quoted company (quoted shares)
ii) Unquoted company (unquoted shares)

The valuation of shares will also be influenced by ownership of the company. If a company is owned by majority shareholders, its valuation will be different from if it was owned by minority shareholders. In addition, it is necessary to value shares because of:

a) It is a requirement of the Company's Act 1948 in respect of quoted investments which should state the investment book value, market value and stock exchange value where this differs from market value. In this case, the Act recognises the fact that the value of shares may not always be reflected in the stock exchange price and for disclosure purposes, it must be reflected.
   (i) In respect of unquoted investments the company must state aggregate amount of the book value and also state either the directors valuation which could be different from investors own valuation. Also the company should give specifications of the earnings and dividends attributed to these shares. These are necessary to enable interested parties to make their own valuations.
   (ii) In respect of both quoted and unquoted, shares the company should give details of the shares so that they can assist in making a valuation of those shares judged to be significant for owning the company, namely, if individual investments exceed 10% of the issued shares of a given class or where the book value of the investment exceeds 10% of the company's assets.
b) Capital transfer reasons i.e. the capital transfer requires a valuation of shares whether from one person to another or even if they are transferred at the time of death. Valuation date is important for valuation of companies' properties.

The main difficulties in valuation of shares are:

i) Existence and method of valuation of goodwill.
ii) Succession of company's management
iii) Growth in dividend
iv) Growth in equity.

Share valuation can be done on the basis of income and asset values. However, on the basis of income a share will be entitled to two forms of income. For this reason the bases of valuing shares are:

i) Earnings method
ii) Dividend method
iii) Assets method

i) Earnings Method (Or Earning Basis Valuation)

Using the earning valuation method, a company will use its P/E ratio to value its shares.

$$P/E = \frac{MV}{E}$$

MV = E x P/E -> value of ordinary share.

The MV can be determined where the estimated earnings have been established by applying the P/E ratio expected of this type of company.

Example

Company XYZ is expected to generate post tax earnings of Sh.200,000 per annum and companies in the same trade will generally have a P/E ratio of eight (8). On account of company XYZ limited size, a ratio of six (6) is considered more appropriate. The issued share capital is 1,000,000ordinary shares of Sh.50 each.

Required;-

Value of shares = $EPS \times P/E = \frac{200,000}{1,000,000} \times 6 = sh.12$

Value of Business = Earnings x P/E ratio

MV = E x P/E = Sh.200, 000× 6 = Sh.1.2 million

ii) Dividend Basis Valuation

Ownership of shares in entities – The owner to receive a cash flow consisting of future dividends and the value of a share should correspond to the present value of this future cash flow. A shareholder cannot expect cash flows in perpetuity as he will sell his shares at one time.

$$P_o = \frac{D_o}{K_e}$$

Note: Where there is growth in equity, $P_0 = \frac{d_0(1+g)}{K_e - g}$

Example

Company XYZ pays a dividend of 10% on its Sh.60 par value ordinary shares. This company uses a discount rate of 15%. Assuming no growth, compute the value of its ordinary share if there's growth of 5%, what would be the value of this company's ordinary shares.

a) $P_o = \frac{D_o}{K_e}$ $P_o = \frac{6}{15\%} = Sh.40$ (no growth)

b) $P_o = \frac{6(1.05)}{0.15-0.05} = Shs.63$ (5% growth rate)

iii) Asset Based Valuation

This method takes into account the entire business with reference to its assets and then divides the resultant value by the number of shares in an issue to give the per share. The principles are the same as those in the valuation of businesses computed already. However, if a historical dividend based on earning based valuation produces a figure which is less than the asset value then there is a possibility that the buyer may be able to improve the management of the asset being taken over. In such a case, a buyer would be prepared to pay a price which though excessive in terms of income might be justified by the underlying assets value.

Example

Information extracted from the books of Kent Limited.

	Sh.		**Sh.**
Current liabilities	300,000	Land	250,000
Bank overdraft	50,000	Stock in trade	100,000
	350,000		350,000

Stock has a realisable value of Sh.80,000 and land Sh.300,000. This company is assumed to have a share capital of 20,000 ordinary shares.

Compute the value of its shares.

Assets method

Assets = L & B	300,000
Stock	80,000
	380,000
Liabilities	[350,000]
	30,000

Value of shares = $\frac{30,000}{20,000}$ = Sh.1.50

Example

K & K Company Limited is planning to absorb three other companies so as to realise its sales records of Sh.500,000 per annum. Its accountants have advised the company to maintain such a size that it will enable its shares to sell at a minimum price of Sh.16. The company's last published balance sheets indicate the following:

	Sh.'000'
Ordinary shares of Sh.10 each	50,000
Reserves	65,000
Current liabilities	40,000
Total	155,000
Assets:	
Fixed assets	80,000
Current assets	75,000
Total	155,000

Profits for the last 5 years were as follows:

Sh. '000'

1. 9,000
2. 6,000
3. 10,000
4. 8,000
5. 17,000

P/E ratio applicable is 12:1

Compute the value of the business indicating the lowest offer price and the highest offer price and the share value thereof whether it would be viable to take on the three companies if its to maintain this share value.

P/E RATIO METHOD

P/E = 12:1 Average profits = 10,000,000

Therefore Value of business = 10,000,000 ×12 = Sh.120,000,000

Value of shares = Sh.120 million= Sh.24
5 million shares

ASSETS METHOD

	Sh. '000'
Assets	155,000
Less: Current liabilities	[40,000]
	115,00

Value of shares $= \frac{Sh.115M}{5M \text{ shares}} = Sh.23$

Where: P_o = Price of ordinary shares
d = Dividend at the end of year one
P_1 = Price of the share at the end of one year.

VALUATION OF COMPANIES

A business may be valued for different reasons such as for merger, takeover, acquisition, or outright sale or liquidation. In purchasing a business, a buyer will be interested in not only the assets but also the future income this business is expected to generate.

BASES OF VALUATION

1. **Theoretical value** – In theory, if a purchaser buys a business, he is simply buying a stream of future income flows and to arrive at the actual purchase price the buyer will:
   a) Consider the estimated probable cash flows.
   b) Discount cash flows to their present value.
   c) Add together the separate amounts to give the present value of income stream. Where future income flows are constant:

$$PV = C\left[\frac{1-(1+r)^{-n}}{r}\right]$$

Where: PV = Present value of income stream
c = Inflow per annum
r = Discounting rate
n = Number of years the inflows will last

Example
As a result of the purchase of an asset, the income stream will increase by £1,000 per annum for 25 years. Assuming a discount rate of 20%, compute the maximum price to be paid for this asset ignoring taxation.

Solution
Maximum price = Present value of all future cash inflows
Maximum price = £10,000 × $PVAF_{20\%,25}$

$$= £10{,}000 \times \frac{1-(1.2)^{-25}}{0.20} = 10{,}000 \text{ x } 4.9476$$

$$= £49{,}476$$

In practice the income streams are never uniform and have to be estimated from existing income shown in the recent accounts.

2. **Earning method** – The business is valued according to the total stream of income it is expected to generate over its lifetime.

Determination of maintainable earnings

a) The first step in arriving at earning based valuation is to estimate the future maintainable earnings and if the conditions in the future are expected to be similar to those in the past, it is then prudent to face the forecast on the historical figures. However, conditions do change and as such changes in cost and revenue. Therefore, a detailed examination of profits of the most recent profit and loss account will be necessary to estimate the effects of the changes. While the information given will depend upon the nature of the business the general principles to bear in mind must include the trend of sales and gross profit.

b) Analysis of sales and gross profit percentage by:
   i) Product lines
   ii) Departments
   iii) Geographical areas
   iv) Customer type.

c) Costs as a percentage of total sales.

d) Unusual fluctuations in the ratios.

e) Necessity of expenditure in the business e.g. excessive remuneration on expenses charged.

f) Inclusion of all costs.

g) Effects of external conditions such as inflation or recession.

However, there are several ways of arriving at the value based on the earnings valuation.

i) Earnings yield valuation
ii) Price earnings ratio valuation
iii) Super profits valuation

i) Earnings Yield Valuation

EY is given by the earnings made by the business expressed as a percentage of the market price of the business i.e.

$$EY = \frac{\text{Earnings}}{\text{Market price of equity}} \times 100$$

$$EY = \frac{EPS}{MPS} \times 100 = \frac{\text{Earnings to Shareholders}}{\text{Market value of equity}}$$

$$\text{Therefore Market Value} = \frac{\text{Earning to shareholders}}{\text{Earnings yield}}$$

Example

Estimated maintainable earnings are £240,000 per annum, rate of return required is 25%. Compute the value of the business.

$$\text{Value MV)} = \frac{E}{EY} \times 100$$

$$= \frac{240{,}000}{0.25} \times 100$$

M.V. = £960,000

This method can be converted into the theoretical base, especially if the business is going concern.

$$PV = \frac{C}{i}\left[1 - \frac{1}{(1+0.25)^N}\right]$$

Note

As N approaches ∞

$$Pv = \frac{C}{r}$$

$$= \frac{240{,}000}{0.25} = £960{,}000$$

ii) Price Earnings Ratio Valuation

P/E ratio is traditionally used for valuation of shares but it is an important ratio in the valuation of business. The P/E ratio is the measure of how may years earning would 'purchase' the market value of the business and is given by:

$$\frac{\text{P/E ratio}}{E} = MV$$

$$MV = P/E \times E$$

NB: The value of the business can be calculated by taking estimated earnings x P/E ratio.

VALUATION OF UNIT TRUSTS

A unit trust (also known as a collective investment scheme) is a pool of money managed collectively by a fund manager. Investment in a unit trust is by buying units in a trust. Money pooled with that of other investors and invested in a portfolio of assets to achieve the investment objective of the unit trust.

When a unit trust is first launched for sale, the price of each unit is usually fixed. If you invest in an existing unit trust, the price of each unit will be based on the market value of the underlying assets that the unit trust has invested in. The number of units received depends on the amount of investment less the sales charge paid.

A unit trust calculates its NAV by adding up the current value of all the stocks, bonds, and other securities (including cash) in its portfolio, subtracting out certain expenses of running the fund (e.g. the manager's salary, custodial fees, and other operating expenses) and then dividing that figure by the fund's total number of units. For example, a fund with 500,000 units that owns Ksh.9 million in stocks and Ksh.1 million in cash has an NAV of 20i.e (10 000 000/500 000 = 20)

VALUATION OF MUTUAL FUNDS

A mutual fund is an investment vehicle that is made up of a pool of funds collected from many investors for the purpose of investing in securities such as stocks, bonds, money market instruments and similar assets. Mutual funds are operated by money managers, who invest the fund's capital and attempt to produce capital gains and income for the fund's investors. A mutual fund's portfolio is structured and maintained to match the investment objectives stated in its prospectus.

Net asset value (NAV) represents a fund's per share market value. This is the price at which investors buy fund shares from a fund company and sell them to a fund company. It is derived by dividing the total value of all the cash and securities in a fund's portfolio, less any liabilities, by the number of shares outstanding. An NAV computation is undertaken once at the end of each trading day based on the closing market prices of the portfolio's securities.

For example, if a fund has assets of Sh.70 million and liabilities of Sh.30 million, it would have a NAV of Sh.40 million.
This number is important to investors, because it is from NAV that the price per unit of a fund is calculated. By dividing the NAV of a fund by the number of outstanding units, you are left with the price per unit.

This pricing system for the trading of shares in a mutual fund differs significantly from that of common stock issued by a company listed on a stock exchange. In this instance, a company issues a finite number of shares through an initial public offering (IPO), and possibly subsequent additional offerings, which then trade in the secondary market. In this market, stock prices are set by market forces of supply and demand. The pricing system for stocks is based solely on market sentiment.

Because mutual funds distribute virtually all their income and realized capital gains to fund shareholders, a mutual fund's NAV is relatively unimportant in gauging a fund's performance, which is best judged by its total return.

TOPIC 6

COST OF CAPITAL

THE CONCEPT AND SIGNIFICANCE OF COST OF CAPITAL

Definition

This is the price the company pays to obtain and retain finance. To obtain finance a company will pay implicit costs which are commonly known as floatation costs. These include: Underwriting commission, Brokerage costs, cost of printing a prospectus, Commission costs, legal fees, audit costs, cost of printing share certificates, advertising costs etc. For debt there is legal fees, valuation costs (i.e. security, audit fees, Bankers commission etc.) such costs are knocked off from:

i. The market value of shares if these has only been sold at a price above par value.
ii. For debt finance – from the par value of debt.

That is, if flotation costs are given per share then this will be knocked off or deducted from the market price per share. If they are given for the total finance paid they are deducted from the total amount paid.

Significance of cost of capital

Cost of capital is considered as a standard of comparison for making different business decisions. Such importance of cost of capital has been presented below.

1. Making Investment Decision

Cost of capital is used as discount factor in determining the net present value. Similarly, the actual rate of return of a project is compared with the cost of capital of the firm. Thus, the cost of capital has a significant role in making investment decisions.

2. Designing Capital structure

The proportion of debt and equity is called capital structure. The proportion which can minimize the cost of capital and maximize the value of the firm is called optimal capital structure. Cost of capital helps to design the capital structure considering the cost of each sources of financing, investor's expectation, effect of tax and potentiality of growth.

3. Evaluating the Performance

Cost of capital is the benchmark of evaluating the performance of different departments. The department is considered the best which can provide the highest positive net present value to the firm. The activities of different departments are expanded or dropped out on the basis of their performance.

4. Formulating Dividend Policy

Out of the total profit of the firm, a certain portion is paid to shareholders as dividend. However, the firm can retain all the profit in the business if it has the opportunity of investing in such projects which can provide higher rate of return in comparison of cost of capital. On the other hand, all the profit can be distributed as dividend if the firm has no opportunity investing the profit. Therefore, cost of capital plays a key role formulating the dividend policy.

FACTORS INFLUENCING COST OF CAPITAL

1. **Terms of reference** – if short term, the cost is usually low and vice versa.
2. **Economic conditions prevailing –** If a company is operating under inflationary conditions, such a company will pay high costs in so far as inflationary effect of finance will be passed onto the company.
3. **Risk exposed to venture –** if a company is operating under high risk conditions, such a company will pay high costs to induce lenders to avail finance to it because the element of risk will be added on the cost of finance which may compound it.
4. **Size of the business –** A small company will find it difficult to raise finance and as such will pay heavily in form of cost of finance to obtain debt from lenders.
5. **Availability –** Cost of finance (COF) prices will also be influenced by the forces of demand and supply such that low demand and low supply will lead to high cost of finance.
6. **Effects of taxation –** Debt finance is cheaper by the amount equal to tax on interest and this means that debt finance will entail a saving in cost of finance equivalent to tax on interest.
7. **Nature of security –** If security given depreciates fast, then this will compound implicit costs (costs of maintaining that security).
8. **Company's growth stage –** Young companies usually pay less dividends in which case the cost of this finance will be relatively cheaper at the earlier stages of the company's development.

COMPONENTS COSTS OF CAPITAL

The individual cost of each source of financing is called component of cost of capital. The component of cost of capital is also known as the specific cost of capital which includes the individual cost of debt, preference shares, ordinary shares and retained earning. Such components of cost of capital have been presented below:

A. Cost of Debt

- Cost of perpetual or irredeemable debt
- Cost of non-perpetual or redeemable debt
- Cost of debt issued on redeemable condition
- Cost of callable debt

B. Cost of Preference Share

- Cost of perpetual preference Share
- Cost of redeemable preference Share

C. Cost of ordinary/equity shares or common stock

D. Cost of retained earning

METHODS/MODELS OF COMPUTING COST OF CAPITAL

The following models are used to establish the various costs of capital or required rate of return by the investors:

- Risk adjusted discounting rate
- Market model/investors expected yield
- Capital asset pricing model (CAPM)
- Dividend yield/Gordon's model.

i) Risk adjusted discounting rate – This technique is used to establish the discounting rate to be used for a given project. The cost of capital of the firm will be used as the discounting rate for a given project if project risk is equal to business risk of the firm. If a project has a higher risk than the business risk of the firm, then a percentage risk premium is added to the cost of capital to determine the discounting rate i.e. discounting rate for a high risk project = cost of capital + percentage risk premium. Therefore a high risk project will be evaluated at a higher discounting rate.

ii) Market Model – This model is used to establish the percentage cost of ordinary share capital cost of equity (K_e). If an investor is holding ordinary shares, he can receive returns in 2 forms:

- Dividends
- Capital gains

Capital gain is assumed to constitute the difference between the buying price of a share at the beginning of the (P_0), the selling price of the same share at the end of the period (P_1). Therefore total returns = DPS + Capital gains = DPS + $P_1 - P_0$.

The amount invested to derive the returns is equal to the buying price at the beginning of the period (P_0) therefore percentage return/yield =

$$\frac{\text{Total returns}}{\text{Investment}} \times 100 = \text{DPS} + \frac{P_1 - P_0}{P_0} \times 100$$

Illustration

For the past 5 years, the MPS and DPS for XYZ Ltd were as follows:

	1998 Shs.	1999 Shs.	2000 Shs.	2001 Shs.	2002 Shs.
MPS as at 31st Dec	40	45	53	50	52
DPS for the year	-	3	4	3	-

Required

Determine the estimated cost of equity/shareholders percentage yield for each of the years involved.

SOLUTION

Year	MPS	Capital gain	DPS	% Return
1998	40	-	-	-
1999	45	5	3	$\frac{5+3}{40} \times 100 = \frac{8}{40} \times 100 = 20\%$
2000	53	8	4	$\frac{8+4}{45} = \frac{12}{45} \times 100 = 27\%$
2001	50	-3	3	$\frac{-3+3}{53} = \frac{0}{53} \times 100 = 0\%$
2002	52	2	-	$\frac{2+0}{50} = \frac{2}{50} \times 100 = 4\%$

iii) **Capital asset pricing model (CAPM)** – CAPM is a technique that is used to establish the required rate of return of an investment given a particular level of risk. According to CAPM, the total business risk of the firm can be divided into 2:

Systematic Risk – This is the risk that affects all the firms in the market. This risk cannot be market/eliminated/diversified. It is thus called undiversifiable risk. Since it affects all the firms in the market, the share price and profitability of the firms will be moving in the same direction i.e. systematically. Examples of systematic risk are political instability, inflation, power crisis in the economy, power rationing, natural calamities – floods and earthquakes, increase in corporate tax rates and personal tax rates, etc. Systematic risk is measured by a Beta factor.

Unsystematic risk – This risk affects only one firm in the market but not other firms. It is therefore unique/ diversifiable to the firm thus unsystematic trend in profitability of the

firm relative to the profitability trend of other firms in the market. The risk is caused by factors unique to the firm such as:

- Labour strikes by employees of the firm;
- Exit of a prominent corporate personality;
- Collapse of marketing and advertising programs of the firm on launching of a new product;
- Failure to make a research and development breakthrough by the firm, etc

CAPM is only concerned with systematic risk. According to the model, the required rate of return will be highly influenced by the Beta factor of each investment. This is in addition to the excess returns an investor derives by undertaking additional risk e.g cost of equity should be equal to $R_f + (R_m - R_f)B_E$

Cost of debt = $R_f + (R_m - R_f)B_d$

Where: R_f = rate of return/interest rate on riskless investment e.g T. bills
R_m = Average rate of return for the entire stock as shown by average Percentage return of the firms that constitute the stock index.
B_e = Beta factor of investment in ordinary shares/equity.
B_d = Beta factor for investment in debentures/long term debt capital.

Illustration

KK Ltd is an all equity firm whose Beta factor is 1.2, the interest rate on T. bills is currently at 8.5% and the market rate of return is 14.5%. Determine the cost of equity K_e, for the company.

Solution

$R_f = 8.5\%$ $R_m = 14.5\%$ Beta of equity = 1.2

$K_e = R_f + (R_m - R_f)B_E$
$= 8.5\% + (14.5\% - 8.5\%)\ 1.2$
$= 8.5\% + (6\%)1.2$
$= 15.7\%$

iv) **Dividend yield/Gordon's Model** – This model is used to determine the cost of various capital components in particular:

a) Cost of equity - K_e
b) Cost of preference share capital (perpetual) – K_p
c) Cost of perpetual debentures – K_d

a) Cost of equity (K_e)– This can be determined with respect to:

Zero growth firm – $P_0 = d_0$ Therefore = $\frac{d_0}{P_0}$

$R = K_e$

Where: d_0 = DPS

R_0 = Current MPS

Constant growth firm – $P_0 = \dfrac{d_0(1+g)}{K_e g}$

Therefore $K_e = \dfrac{d_0(1+g)}{P_0} + g$

b) Cost of perpetual preference share capital (Kp)

Recall, value of a preference share (FRS) = $\dfrac{\text{Constant DPS}}{\text{Kp}}$

Therefore: d_p = Preference dividend per share

P_p = Market price of a preference share

c) Cost of perpetual debenture (K_d) – Debentures pay interest charges, which an allowable expenses for tax purposes.

Recall, Value of a debenture (V_d) = $\dfrac{\text{Interest charges p.a. in } \infty}{\text{Cost of debt } K_d}$

Therefore $K_d = \dfrac{\text{Int.}}{V_d}(1-T)$

Where: K_d = % cost of debt

T = Corporate tax rate

V_d = Market value of a debenture

Cost of Redeemable Debentures and Preference Shares

Redeemable fixed return securities have a definite maturity period. The cost of such securities is called yield to maturity (YTM) or redemption yield (RY). For a redeemable debenture K_d (cost of debt) = YTM = RY, can be determined using approximation method as follows:

$$K_d / VTM / RY = \frac{Int(1-T)+(M-V_d)\frac{1}{n}}{(M+V_d)\frac{1}{2}}$$

Where:

Int. = Interest charges p.a.

T = Corporate tax rate

M = Par or maturity value of a debenture

V_d = Current market value of a debenture

n = Number of years to maturity

WEIGHTED AVERAGE COST OF CAPITAL (WACC)

This is also called the overall or composite cost of capital. Since various capital components have different percentage cost, it is important to determine a single average cost of capital attributable to various costs of capital. This is determined on the basis of percentage cost of each capital component.

Market value weight or proportion of each capital component

$$\text{W.A.C.C} = K_e\left(\frac{E}{V}\right)+K_p\left(\frac{P}{V}\right)+K_d(1-T)\left(\frac{D}{V}\right)$$

Where:

K_e, K_p and K_d = Percentage cost of equity, preference share capital and debt capital respectively

E, P and D = Market value of equity, preference share capital and debt capital respectively.

NB: Market value = Market price of a security x No. of securities.

V = Total market value of the firm = E + P + D.

Illustration

The following is the capital structure of XYZ Ltd as at 31/12/2002.

	Sh. M
Ordinary share capital Sh.10 par value	400
Retained earnings	200
10% preference share capital Sh.20 par value	100
12% debenture Sh.100 par value	200
	900

Additional information

1. Corporate tax rate is 30%
2. Preference shares were issued 10 years ago and are still selling at par value MPS = Par value
3. The debenture has a 10 year maturity period. It is currently selling at Sh.90 in the market.
4. Currently the firm has been paying dividend per share of Sh.5. The DPS is expected to grow at 5% p.a. in future. The current MPS is Sh.40.

Required;-

a) Determine the WACC of the firm.
b) Explain why market values and not book values are used to determine the weights.
c) What are the weaknesses associated with WACC when used as the discounting rate, in project appraisal.

a) i) Compute the cost of each capital component

Cost of equity (K_e) – Since the growth rate in dividends is given, use the constant growth rate dividend model to determine the cost of equity.

d_0 = Sh.5 P_0 = Sh.40 g = 5%

$$K_e = \frac{d_0(1+g)}{P_0} + g = \frac{5(1+0.05)}{40} + 0.05 = 0.18125 = 18.13\%$$

Cost of perpetual preference share capital (K_p) – preference shares are still selling at par thus MPS = par value. If this is the case, K_p = coupon rate = 10%.

MPS = Par value = Sh.20

Dp = 10% × Sh.20 = Sh.2

$$K_p = \frac{DPS}{MPS} = \frac{d_p}{P_p} = \frac{Sh.2}{Sh.20} = 10\%$$

Cost of debentures (K_d) – the debenture has a 10 year maturity period. It is thus a redeemable fixed return security thus the cost of debt is equal to yield to maturity.

Redemption yield:

Interest charges p.a. = 12% x Sh.100 par value	= Sh.12
Maturity period (n)	= 10 years
Maturity value (m)	= Sh.100
Current market value (Vd)	= Sh.90
Corporate tax rate (T)	= 30%

$$K_d = YTM = RY = \frac{Int(1-T)+(M-V_d)\frac{1}{n}}{(M+V_d)½}$$

$$= \frac{Sh.12(1-0.3)+(100-90)\frac{1}{10}}{(100+90)½} = 9.9\% \approx 10\%$$

ii) Compute the market value of each capital component

Market value of Equity (E) = MPS x No. of ordinary shares

$$= \quad Sh.40x\frac{Sh.400MDSC}{Sh.10parvalue} \quad = \quad 1,600$$

Market value of preference share capital (P)

= Par value, since MPS = Par value per share = 100

Market value of debt (D) = Vd x No. of debentures

$$= \quad Sh.90x\frac{Sh.200Mdebentures}{Sh.100parvalue} = \underline{\underline{180}}$$

E + P + D = V = total Market Value = $\underline{\underline{1,880}}$

iii) Compute W.A.C.C using $K_e = 18.13\%$, $K_p = 10\%$, $K_d(1\text{-}T) = 10\%$

a) Using weighted average cost method,, WACC =

$$= \quad K_e\left(\frac{E}{V}\right)+K_p\left(\frac{P}{V}\right)+K_d(1-T)\left(\frac{D}{V}\right)$$

$$= \quad 18.13\%\left(\frac{1,600}{1,880}\right)+10\%\left(\frac{100}{1,880}\right)+10\%\left(\frac{180}{1,880}\right)$$

$$= \quad 15.43 + 0.5319 + 0.9574$$

$$= \quad 0.169193$$

$$\approx \quad 16.92\%$$

b) By using percentage method,

$$WACC = \frac{\text{Total monetary cost}}{\text{Total market value (V)}}$$

Where: Monetary cost	=	% cost x market value of capital			
Monetary cost of E	=	18.13% x 1,600	=	290.08	
Monetary cost of P	=	10% x 100	=	10.00	
Monetary cost of D	=	10% x 180	=	18.00	
				318.08	

Total market value (V) $\underline{\underline{1,880}}$

$$\text{Therefore WACC} = \frac{318.08}{1{,}880} \times 100 = 16.92\%$$

In computation of the weights or proportions of various capital components, the following values may be used:

- Market values
- Book values
- Replacement values
- Intrinsic values

Market Value – This involves determining the weights or proportions using the current market values of the various capital components. The problems with the use of market values are:
The market value of each security keep on changing on daily basis thus market values can be computed only at one point in time.
The market value of each security may be incorrect due to cases of over or under valuation in the market.

Book values – This involves the use of the par value of capital as shown in the balance sheet. The main problem with book values is that they are historical/past values indicating the value of a security when it was originally sold in the market for the first time.
Replacement values – This involves determining the weights or proportions on the basis of amount that can be paid to replace the existing assets. The problem with replacement values is that assets can never be replaced at ago and replacement values may not be objectively determined.

Intrinsic values – In this case the weights are determine on the basis of the real/intrinsic value of a given security. Intrinsic values may not be accurate since they are computed using historical/past information and are usually estimates.

e) Weaknesses of WACC as a discounting rate

WACC/Overall cost of capital has the following problems as a discounting rate:

- It can only be used as a discounting rate assuming that the risk of the project is equal to the business risk of the firm. If the project has higher risk then a percentage premium will be added to WACC to determine the appropriate discounting rate.
- It assumes that capital structure is optimal which is not achievable in real world.
- It is based on market values of capital which keep on changing thus WACC will change over time but is assumed to remain constant throughout the economic life of the project.
- It is based on past information especially when determining the cost of each component e.g in determining the cost of equity (Ke) the past year's DPS is used while the growth rate is estimated from the past stream of dividends.

Note

When using market values to determine the weight/proportion in WACC, the cost of retained earnings is left out since it is already included or reflected in the MPS and thus the market value of equity. Retained earnings are an internal source of finance thus; when they are high there is low gearing, lower financial risk and thus highest MPS.

MARGINAL COST OF CAPITAL (MCC)

This is cost of new finances or additional cost a company has to pay to raise and use additional finance is given by:

$$\frac{\text{Total cost of marginal finance}}{\text{Cost of finance (COF)}} \times 100$$

Cost of finance may be computed using the following information:

i) Marginal cost of each capital component.

ii) The weights based on the amount to raise from each source.

a) Investors usually compute their return basing their figures on market values or cost of investment.

b) Investors purchase their investment at market value and as such, the cost of finance to the company must be weighted against expectations based on the market conditions.

c) Investments appreciate in the stock market and as such the cost must be adjusted to reflect such a movement in the value of an investment.

1. Marginal cost of equity

$$MCE = \frac{D_1}{P_o - f} x100 \text{ (for zero growth firm)}$$

Also cost of equity

$$K_e = \frac{D_1}{P_o - f} \text{ (for normal growth firm)}$$

Where: d_1 = expected DPS = $d_0(1+g)$

P_0 = current MPS

f = floation costs

g = growth rate in equity

2. Cost of preference share capital:

$$Kp = \frac{Dp}{P_o - f} x100$$

Where: K_p = Cost of preference

D_p = Dividend per share

P_o = MPS (Market price per share)

F = Flotation costs

3. Cost of debenture

$$K_d = \frac{Int(1-T)}{V_d - f}$$

Where: K_d = Cost of debt
Int = interest
P_o = Market price for debenture (at discount)
f = flotation costs
t = Tax rate

4. Just like WACC, weighted marginal cost of capital can be computed using:
i) Weighted average cost method
ii) Percentage method

Illustration

XYZ Ltd wants to raise new capital to finance a new project. The firm will issue 200,000 ordinary shares (Sh.10 par value) at Sh.16 with Sh.1 floatation costs per share, 75,000 12% preference shares (Sh.20 par value) at Sh.18 with sh.150,000 total floatation costs, 50,000 18% debentures (sh.100 par) at Sh.80 and raised a Sh.5,000,000 18% loan paying total floatation costs of Sh.200,000. Assume 30% corporate tax rate. The company paid 28% ordinary dividends which is expected to grow at 4% p.a.

Required;-

a)Determine the total capital to raise net of floatation costs
b)Compute the marginal cost of capital

Solution

a)

		Sh. '000'
Ordinary shares 200,000 shares @ Sh.16	3,200,000	
Less floatation costs 200,000 shares @ Sh.1	(200,000)	3,000
Preference shares 75,000 shares @ Sh.18	1,350,000	
Less floatation cost	(150,000)	1,200
Debentures 50,000 debentures @ Sh.80	4,000,000	
Floatation costs	-	4,000
Loan	5,000,000	
Less floatation costs	(200,000)	4,800
Total capital raised		13,000

b) Marginal cost of equity Ke

$$K_e \frac{d_0(1+g)}{P_0 - f} + g$$

d_0 = 28% × Sh.10 par = Sh.2.80
g = 4%
f = Sh.1.00
P_0 = Sh.16

Therefore marginal = $K_e = \frac{2.80(1.04)}{16-1} + 0.04 = 0.234 = 23.4\%$

Marginal cost of preference share capital Kp

$$Kp = \frac{d_p}{P_0 - f}$$

d_p = 12%×Sh.20 par =Sh.2.40

P_0 = Sh.18

f = Floatation cost per share = Sh.150,000 / 75,000 shares = Sh.2.00

$$Kp = \frac{2.40}{18-2} = 0.15 = 15\%$$

Marginal cost of debenture K_d:

$$K_d = \frac{Int\ (1-t)}{V_d - f}$$

f = 0
V_d = Sh.80
Int = 18% x Sh.100 par = Sh.18
T = 30%

$$K_d = \frac{18(1-0.3)}{80} = 0.1575 = 15.75\%$$

Marginal cost of loan K_d

$$Kd = \frac{Int\ (1-t)}{V_d - f}$$

T = 30%
V_d = Sh.5 million
f = Sh.0.2 million

Int = 18% × Sh.5M = Sh.0.9M

K_d = $\frac{0.9\,(1-0.3)}{5-0.2}$ = 0.13125 = 13.13%

Source	Amount to raise before fixed costs Sh. '000'	% marginal cost	Maturity cost Sh. '000'
Ordinary shares	3,200	23.4%	748.8
Preference	1,350	15.0%	202.5
shares	4,000	15.75%	630
Debenture	5,000	13.13%	656.5
Loan	13,550		2237.8

Weighted marginal cost = $\frac{2,237.8}{13,550} \times 100$ = 16.52%

CAPITAL STRUCTURE AND FINANCIAL RISK

A company's financial risk, takes into account a company's leverage. If a company has a high amount of leverage, the financial risk to stockholders is high - meaning if a company cannot cover its debt and enters bankruptcy, the risk to stockholders not getting satisfied monetarily is high.

When a firm goes from solely equity financing to a mixture of debt and equity financing, the firm's return on equity (ROE) becomes more volatile. Hence, a firm's financial risk represents the impact of a firm's financing decision (or capital structure) on its ROE.

Why does the usage of debt instruments make a firm riskier to common stockholders? When a firm issues debt (i.e. financial leverage), it takes on additional responsibility of financing the debt (i.e. paying interest payments on time). The inability of the firm to pay the interest payments (or repay the principal) will result in a default that might lead to bankruptcy. As the amount of debt used by the firm increases, the chances of it defaulting will also go up (due to more constraints on its cash flows as a result of the interest payments).

It is important to remember that the common stockholders have the last claim on the firm's asset. As the amount of debt issued by the firm increases, more of the assets will be used to pay off the debt holders before they are divided among the common stockholders. We know that financial leverage increases the shareholders' expected returns, but it also increases the volatility of those returns. Does the increase in the expected returns sufficiently compensate the shareholders for the increase in risk? We need to turn to capital structure theory to help shed some light on this question.

FACTORS INFLUENCING CAPITAL STRUCTURE DECISIONS

The primary factors that influence a company's capital-structure decision are:

1. **Business risk**;-excluding debt, business risk is the basic risk of the company's operations. The greater the business risk, the lower the optimal debt ratio.
   As an example, let's compare a utility company with a retail apparel company. A utility company generally has more stability in earnings. The company has less risk in its business given its stable revenue stream. However, a retail apparel company has the potential for a bit more variability in its earnings. Since the sales of a retail apparel company are driven primarily by trends in the fashion industry, the business risk of a retail apparel company is much higher. Thus, a retail apparel company would have a lower optimal debt ratio so that investors feel comfortable with the company's ability to meet its responsibilities with the capital structure in both good times and bad.
2. **Company's tax exposure**; - debt payments are tax deductible. As such, if a company's tax rate is high, using debt as a means of financing a project is attractive because the tax deductibility of the debt payments protects some income from taxes.
3. **Financial flexibility**;-this is essentially the firm's ability to raise capital in bad times. It should come as no surprise that companies typically have no problem raising capital when sales are growing and earnings are strong. However, given a company's strong cash flow in the good times, raising capital is not as hard. Companies should make an effort to be prudent when raising capital in the good times, not stretching its capabilities too far. The lower a company's debt level, the more financial flexibility a company has.
   The airline industry is a good example. In good times, the industry generates significant amounts of sales and thus cash flow. However, in bad times, that situation is reversed and the industry is in a position where it needs to borrow funds. If an airline becomes too debt ridden, it may have a decreased ability to raise debt capital during these bad times because investors may doubt the airline's ability to service its existing debt when it has new debt loaded on top.
4. **Management style;**-management styles range from aggressive to conservative. The more conservative a management's approach is, the less inclined it is to use debt to increase profits. An aggressive management may try to grow the firm quickly, using significant amounts of debt to ramp up the growth of the company's earnings per share (EPS).
5. **Growth rate**;-firms that are in the growth stage of their cycle typically finance that growth through debt, borrowing money to grow faster. The conflict that arises with this method is that the revenues of growth firms are typically unstable and unproven. As such, a high debt load is usually not appropriate.
   More stable and mature firms typically need less debt to finance growth as its revenues are stable and proven. These firms also generate cash flow, which can be used to finance projects when they arise.
6. **Market conditions**;-market conditions can have a significant impact on a company's capital-structure condition. Suppose a firm needs to borrow funds for a new plant. If the market is struggling, meaning investors are limiting companies' access to capital because of market concerns, the interest rate to borrow may be higher than a company would want

to pay. In that situation, it may be prudent for a company to wait until market conditions return to a more normal state before the company tries to access funds for the plant.

REVISION QUESTIONS

QUESTION 1

(a) Explain fully the effect of the use of debt capital on the weighted average cost of capital of a company.

(b) Millennium Investments Ltd. wishes to raise funds amounting to Sh.10 million to finance a project in the following manner:

Sh.6 million from debt; and

Sh.4 million from floating new ordinary shares

The present capital structure of the company is made up as follows:

1. 600,000 fully paid ordinary shares of Sh.10 each
2. Retained earnings of Sh.4 million
3. 200,000, 10% preference shares of Sh.20 each.
4. 40,000 6% long term debentures of Sh.150 each.

The current market value of the company's ordinary shares is Sh.60 per share. The expected ordinary share dividend in a year's time is Sh.2.40 per share. The average growth rate in both dividends and earnings has been 10% over the past ten years and this growth rate is expected to be maintained in the foreseeable future.

The company's long term debentures currently change hands for Sh.100 each. The debentures will mature in 100 years. The preference shares were issued four years ago and still change hands at face value.

Required:

(i) Compute the component cost of:

- Ordinary share capital;
- Debt capital
- Preference share capital.

(ii) Compute the company's current weighted average cost of capital.

(iii) Compute the company's marginal cost of capital if it raised the additional Sh.10 million as envisaged. (Assume a tax rate of 30%).

Solution:

QUESTION 1

(a) At initial stages of debt capital the WACC will be declining upto a point where the WACC will be minimal. This is because.

(i) Debt capital provides tax shield to the firm and after tax cost of debt is low.

(ii) The cost of debt is naturally low because it is contractually fixed and certain.

Beyond the optimal gearing level, WACC will start increasing as cost of debt increases due to high financial risk.

(b) (i) Cost of equity

$$Ke = \frac{do(1+g)}{Po} + g$$

do(1+g) = Sh2.40

Po = Sh60

g = 10%

$$Ke = \frac{2.40}{60} + 0.10 = 0.14 = 14\%$$

Cost of debt capital (Kd)

Since the debenture has 100years maturity period then Kd = yield to maturity = redemption.

$$Kd = \frac{Int(1-T) + (m-vd)\frac{1}{n}}{(m+vd)\frac{1}{2}}$$

m = Maturity/per value = sh 150
vd = market value = Sh. 100
n = number of years to maturity =100
Int = Interest = 6% × Sh. 150 = Sh.9 p.a
T = Tax rate = 30%

$$Kd = \frac{9(1-0.3) + (150-100)\frac{1}{100}}{(150+100)\frac{1}{2}} = \frac{6.8}{125} \times 100 = 5.441\%$$

Cost of preference share capital Kp

Kp = Coupon rate = 10% since MPS = par value

(ii) WACC or overall cost of capital Ko

M.V of equity = 600,000 shares x sh 60 MPS	36
M.V of debt = 40,000 debentures x Sh 100	4

M.V of preference shares = 200,000 shares x Sh 20 $\frac{4}{44}$

Ke = 14% Kd = 5.44% Kp = 10%

Ko = WACC = $14\%\left(\frac{36}{44}\right) + 5.44\%\left(\frac{4}{44}\right) + 10\%\left(\frac{4}{44}\right)$ = 12.86%

The Sh 10M will be raised as follows:

Sh 6M from debt
Sh 4M from shares
Since there are no floatation costs involved then:

Marginal cost of debt = 5.4%
Marginal cost of ordinary share capital = 14%

Therefore marginal cost of capital = $14\%\left(\frac{4}{10}\right) + 5.55\%\left(\frac{6}{10}\right)$ = 8.86%

QUESTION 2

On 1 November 2002, Malaba Limited was in the process of raising funds to undertake four investment projects. These projects required a total of Sh.20 million.

Given below are details in respect of the projects:

Project	Required Initial Investment Shs. million	Internal Rate of Return (IRR)
A	7	24%
B	6	16%
C	5	18%
D	2	20%

You are provided with the following additional information:

1. The company had Sh.5.4 million available from retained earnings as at 1 November 2002. Any extra equity finance will have to be sourced through an issue of new ordinary shares.
2. The current market price per share on 1 November 2002 was Sh.22.40, ex-dividend information on Earnings Per Share (EPS) and Dividends Per Share (DPS) over the last 6 years is as follows:

Year ended 31 October	1997	1998	1999	2000	2001	2002
EPS (Sh.)	4.20	4.40	4.65	4.90	5.15	5.26
DPS (Sh.)	2.52	2.65	2.80	2.95	3.10	3.22

3. Issue of new ordinary share would attract floatation costs of Sh.3.60 per share.
4. 9% Irredeemable debentures (par value Sh.1,000) could be sold with net proceeds of 90% due to a discount on issue of 8% and floatation costs of Sh.20 per debenture. The maximum amount available from the 9% debentures would be Sh.4 million after which debt could be obtained at 13% interest with net proceeds of 91% of par value.
5. 12% preference shares can be issued at par value Sh.80.
6. The company's capital structure as at 1 November 2002 which is considered optimum is:

Ordinary share capital (equity)	45%
Preference share capital	30%
Debentures	25%

7. Tax rate applicable is 30%.
8. The company has to use internally generated funds before raising extra funds from external sources.

Required:

(i) The levels of total new financing at which breaks occur in the Weighted Marginal Cost of Capital (WMCC) curve.

(ii) The weighted marginal cost of capital for each of the 3 ranges of levels of total financing as determined in (i) above.

(iii) Advise Malaba Limited on the projects to undertake assuming that the projects are not divisible.

Solution:

(i)

Levels determined by retained earnings available

$\frac{5.4m}{0.45}$ = 12 million

Level determined by debt available

$\frac{4m}{0.25}$ = 16million

(ii) **Weighted marginal cost of capital for each of the ranges of financing:**

From 0 Sh. 12 million

Cost of equity = $\left(\frac{3.22}{2.52}\right)^{15}$ -1 0.05 or 5%

Ke = $\frac{Do\ (1.0g)}{Po}$ + g (Retained earnings)

= $\frac{3.22\ (1.05)}{}$ + 0.05

$$= \frac{22.4}{} = 0.20 \text{ or } 20\%$$

Cost of preference shares

$$Kp = \frac{12}{80} \times 100\% = 15\%$$

Cost of debt

$$Kd = \frac{I(1-T)}{Pd} \times 100\% = \frac{90 \times 0.7 \times 100\%}{900} = 7\%$$

WMCC = (0.45 × 20%) + 0.3(15%) + 0.25(7%)

For the range 12m 16m

Only cost of equity changes since extended equity is to be raised.

Thus.

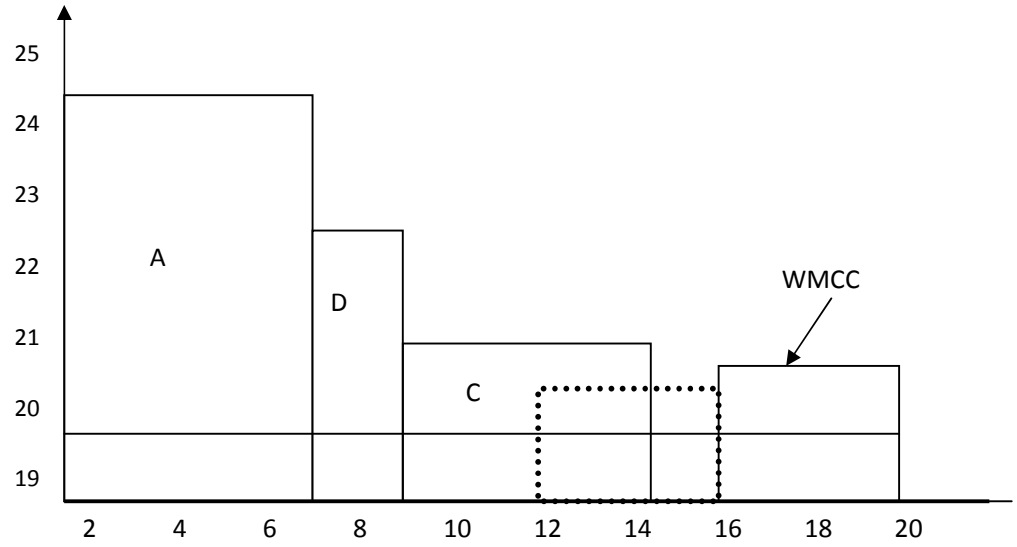
$$Ke = \frac{3.22(1.05)}{22.4 - 3.6} + 0.05 = 23\%$$

Thus WMCC = (0.45 x 23%) + (0.3 x15%) + (0.25 x 7%)
= 16.6%

For the range 16m 20m
Cost of equity (Ke)
Cost of preference shares (Kp)
Cost of debt $\frac{430(0.7) \times 100\%}{910} = 10\%$

Thus WMCC = (0.45 x 23%) + (0.3 x15%) + (0.25 x 10%)
= 17.35%

(iii) **Graphical illustration of WMCC/investment projects' IRR and level of financing.**



QUESTION 3

(a) Explain why the weighted average cost of capital of a firm that uses relatively more debt capital is generally lower than that of a firm that uses relatively less debt capital.

(b) The total of the net working capital and fixed assets of Faida Ltd as at 30 April 2003 was Sh.100,000,000. The company wishes to raise additional funds to finance a project within the next one year in the following manner.

Sh.30, 000,000 from debt

Sh.20,000,000 from selling new ordinary shares.

The following items make up the equity of the company:

	Sh.
3,000,000 fully paid up ordinary shares	30,000,000
Accumulated retained earnings	20,000,000
1,000,000 10% preference shares	20,000,000
200,000 6% long term debentures	30,000,000

The current market value of the company's ordinary shares is Sh.30. The expected dividend on ordinary shares by 30 April 2004 is forecast at Sh.1.20 per share. The average growth rate in both earnings and dividends has been 10% over the last 10 years and this growth rate is expected to be maintained in the foreseeable future.

The debentures of the company have a face value of Sh.150. However, they currently sell for Sh.100. The debentures will mature in 100 years.

The preference shares were issued four years ago and still sell at their face value.
Assume a tax rate of 30%

Required:

(i) The expected rate of return on ordinary shares.

(ii) The effective cost to the company of:

- Debt capital
- Preference share capital

(iii) The company's existing weighted average cost of capital.

(iv) The company's marginal cost of capital if it raised the additional Sh.50,000,000 as intended.

Solution:

(a) At initial stages of debt capital the WACC will be declining up to a point where the WACC will be minimal. This is because.

(i) Debt capital provides tax shield to the firm and after tax cost of debt is low.

(ii) The cost of debt is naturally low because it is contractually fixed and certain.

Beyond the optimal gearing level, WACC will start increasing as cost of debt increases due to high financial risk.

(b) (i). Expected rate return on ordinary shares is equal to cost of equity, ke

$$Ke - \frac{do(i+g)}{Po} + g$$

do(1+g) = Expected D.P.S = Sh.1.20

po = current M.P.S. = Sh 30

g = growth rate = 10%

$$ke - \frac{1.20}{30} + 0.10 - 0.14 = 14\%$$

(ii). Effective of cost of

- Debt kd
- Debentures have a definite maturity period hence

$$Kd = \frac{Int\,(I-T) + (m-vd)\,1/n}{(m+vd)/2}$$

$$= \frac{(6\% \times 150)(1-0.3) + (150-100)1/100}{(150+100)\,½}$$

$$= \frac{6.3+0.5}{125} = \frac{6.8}{125} \times 100 = 5.44\%$$

vd = current make value and m = par/maturity value

- cost of preference share capital kp preference shares are selling at par hence market price = par value and kp = coupon rate = 10%

(iii). M.V. of equity = Sh. 30 x 3m shares = 90 m

M.V of debt – Sh. 100 x 0.2m debentures = 20m
M.V. of preferred shares – par value = 20m
Total Market Value 130m

Wall = 14% (90/130) + 5.44% (20/130) + 10% (20/130) = 9.69+0.84+1.54
= 12.02%

(iv). No floatation costs one given hence marginal cost of debt and equities is 5.44% &14% respectively

- The amount to raise is 50m where 60% (30m/50m) will from debt and 40% from issue of shares.
- Therefore WACC = (5.44% x 0.6) + (0.4 x 14%) = **8.864%**

QUESTION 4

(a) Explain the meaning of the term "cost of capital" and explain why a company should calculate its cost of capital with care.

(b) Identify and briefly explain three conditions which have to be satisfied before the use of the weighted average cost of capital (WACC) can be justified.

(c) Biashara Ltd. has the following capital structure:

	Sh.'000'
Long-term debt	3,600
Ordinary share capital	6,500
Retained earnings	4,000

The finance manager of Biashara Ltd. has a proposal for a project requiring Sh.45 million. He has proposed the following method of raising the funds:

- Utilise all the existing retained earnings
- Issue ordinary shares at the current market price.
- Issue 100,000 10% preference shares at the current market price of Sh.100 per share which is the same as the par value.
- Issue 10% debentures at the current market price of Sh.1,000 per debenture.

Additional information;-

1. Currently, Biashara Ltd. pays a dividend of Sh.5 per share which is expected to grow at the rate of 6% due to increased returns from the intended project. Biashara Ltd.'s price/earnings (P/E) ratio and earnings per share (EPS) are 5 and Sh.8 respectively.
2. The ordinary shares would be issued at a floatation cost of 10% based in the market price.
3. The debenture par value is Sh.1, 000 per debenture.
4. The corporate tax rate is 30%.

Required:

Biashara Ltd.'s weighted average cost of capital (WACC).

Solution:

(a) Cost of capital

- This is the rate used to discount the future cash flows of a business, to determine the value of the firm. The cost of capital can be viewed as the minimum return required by investors and should be used when evaluating investment proposals.
- In order to maximize the wealth of shareholders, the basic decision rule is that if cash flows relating to an investment proposal are negative, the proposal should be rejected. However, if the discounted cash flows are positive, the proposal should be accepted. The discounting is carried out using the firm's cost of capital.

Why cost capital should be calculated with care:

- Failure to calculate the cost of capital correctly can in incorrect investment decisions being made.
- Where the cost of capital is understated, investment proposals which should be rejected may be accepted.
- Similarly, where the cost of capital is overstated, investment proposals may be rejected which should be accepted. In both cases, the shareholders would suffer a loss.

Note There is an inverse relationship between N.P.V. and cost of capital. The higher the cost of capital, the lower the N.P.V. and vice versa.

(b) Required conditions for using the WACC

- ♦ The WACC assumes the project is a marginal, scalar addition to the company's existing activities, with no overspill or synergistic impact likely to disturb the current valuation relationships.
- ♦ It assumes that project financing involves no deviation from the current capital structure (otherwise the MCC should be used.). The financing mix is similar to existing capital structure.
- ♦ Using the WACC implies that any new project has the same systematic or operating risk as the company's existing operations. This is possibly a reasonable assumptions for minor projects in existing areas and perhaps replacements but hardly so for major new product developments.

(c) Current Capital Structure

Debt	3.6	25.5%
Equity	10.5	74.5%
	14.1	

Capital to be raised

Debt $^{25.5}/_{100}$ x 45 = $^{11.475}$

Equity $^{74.5}/_{100}$ x 45 = $^{33.525}/_{45m}$

Ordinary share capital amount to be raised = 33.525 -4m = 29.525m

Number of ordinary shares = $^{29.525m}/_{Sh.40m}$ = 738,125 shares

Specific cost of retained earnings

EPS = 8 P/E = 5
Market price = 8 x 5 = 40
Ke = $^{5(1.06)1}/_{40}$ + 0.06 = 19.25%

Preference shares
$^{10}/_{100}$ x 100 = 10%

Debenture $^{10}/_{100}\times$ 1000 =100

$^{100}/_{1000}$ x 100 = 10%

effective cost = 10% (1 – 0.3) = 7%

Source	**Amount**	**Proportion**	**Specific cost**	**Weighted cost**
Retained earnings	4	8.9%	19.25%	1.7%
Ordinary share capital	29.525	65.6%	20.72%	13.6%
10% preference shares	10	22.2%	10%	2.22%
10% debentures	1.475	3.3%	6%	0.2%
	45m	100		17.72%

WACC = 17.72%

TOPIC 7

CAPITAL INVESTMENT DECISIONS UNDER CERTAINTY

Introduction

Capital budgeting decision is also known as the investment decision. The capital budgeting process involves a firms decision to invest its funds in the most viable and beneficial project. It is the process of evaluating and selecting long term investments consistent with the firm's goal of owner wealth maximization.

The firm expects to produce benefits to the firm over a long period of time and encompasses tangible and intangible assets. For a manufacturing firm, capital investment are mainly to acquire fixed assets-property, plant and equipment. Note that typically, we separate the investment decision from the financing decision: first make the investment decision then the finance manager chooses the best financing method.

These key motives for making capital expenditures are;

1. ***Expansion:*** The most common motive for capital expenditure is to expand the cause of operations – usually through acquisition of fixed assets. Growing firms need to acquire new fixed assets rapidly.
2. ***Replacements*** – As a firm's growth slows down and it reaches maturity, most capital expenditure will be made to replace obsolete or worn out assets. Outlays of repairing an old machine should be compared with net benefit of replacement.
3. ***Renewal*** – An alternative to replacement may involve rebuilding, overhauling or refitting an existing fixed asset.. A physical facility could be renewed by rewiring and adding air conditioning.
4. ***Other purposes*** – Some expenditure may involve long-term commitments of funds in expectations of future return i.e. advertising, R&D, management consulting and development of view products. Other expenditures include installation of pollution control and safety devises mandated by the government.

Features of investment decisions

1. The investment requires a high outlay of capital which must be planned.
2. Capital budgeting decisions have an influence on the rate and direction of the growth of the organization unlike normal operation costs.
3. The investment has long-term implications. I.e. more than 1 year.
4. The decisions are irreversible. This implies that there might be no second hand market for the assets since it's usually tailor made for that particular firm.
5. The future expected cash flows from this project are uncertain thus these decisions involve a high degree of risk.

Steps in Capital Budgeting Process

The capital budgeting process consists of five distinct but interrelated steps. It begins with proposal generation, followed by review and analysis, decision making, implementation and follow-up. These six steps are briefly outlined below.

1. ***Proposal generation:*** Proposals for capital expenditure are made at all levels within a business organization. Many items in the capital budget originate as proposals from the plant and division management. Project recommendations may also come from top management, especially if a corporate strategic move is involved (for example, a major expansion or entry into a new market). A capital budgeting system where proposals originate with top management is referred to a top-down system, and one where proposals originate at the plant or division level is referred to as bottom-up system. In practice many firms use a mixture of the two systems, though in modern times has seen a shift to decentralization and a greater use of the bottoms-up approach. Many firm offer cash rewards for proposal that are ultimately adopted.
2. ***Review and analysis:*** Capital expenditure proposals are formally reviewed for two reasons. First, to assess their appropriateness in light of firm's overall objectives, strategies and plans and secondly, to evaluate their economic viability. Review of a proposed project may involve lengthy discussions between senior management and those members of staff at the division and plant level who will be involved in the project if it is adopted. Benefits and costs are estimated and converted into a series of cash flows and various capital budgeting techniques applied to assess economic viability. The risks associated with the projects are also evaluated.
3. ***Decision making:*** Generally the board of directors reserves the right to make final decisions on the capital expenditures requiring outlays beyond a certain amount. Plant manager may be given the power to make decisions necessary to keep the production line moving (when the firm is constrained with time it cannot wait for decision of the board).
4. ***Implementation:*** Once approval has been received and funding availed implementation commences. For minor outlays the expenditure is made and payment is rendered: For major expenditures, payment may be phased, with each phase requiring approval of senior company officer.
5. ***Follow-up:*** involves monitoring results during the operation phase of the asset. Variances between actual performance and expectation are analyzed to help in future investment decision. Information on the performance of the firm's past investments is helpful in several respects. It pinpoints sectors of the firm's activities that may warrant further financial commitment; or it may call for retreat if a particular project becomes unprofitable. The outcome of an investment also reflects on the performance of those members of the management involved with it. Finally, past errors and successes provide clues on the strengths and weaknesses of the capital budgeting process itself.

This topic will majorly discuss on the second step: Review and analysis.

Basic terminologies in capital budgeting.

Independent Vs Mutually Exclusive Projects

Independent projects are those whose cash flows are unrelated or independent of one another; the acceptance of one does not eliminate the others from further considerations (if a firm has unlimited funds to invest, all independent project that meet it minimum acceptance criteria will be implemented i.e. installing a new computer system, purchasing a new computer system, and acquiring a new limousine for the CEO.

Mutually exclusive projects are projects that compete with one another, no that the acceptance of one eliminates the acceptance of one eliminate the others from further consideration. For example, a firm in need of increased production capacity could either, (1) Expand it plant (2) Acquire another company, or (3) contract with another company for production of required items.

Unlimited Funds Vs Capital Rationing

Unlimited funds- This is the financial situation in which a firm is able to accept all independent projects that provide an acceptable return (Capital budgeting decisions are simply a decision of whether or not the project clears the hurdle rate).

Capital rationing This is the financial situation in which the firm has only a fixed number of shillings to allocate among competing capital expenditures. A further decision as to which of the projects that meet the minimum requirements is to be invested in has to be taken.

Conventional Versus Non-Conventional Cash flows

Conventional cash flow pattern consists of an initial outflow followed by only a series of inflows. (For example a firm spends Sh.10 million and expects to receive equal annual cash inflows of Sh.2 million in each year for the next 8 years) The cash inflows could be unequal

Non-conventional cash flows This is a cash flow pattern in which an initial outflow is not followed only by a series of inflows, but with at least one cash outflow. For example the purchase of a machine may require Sh.20 million and may generate cash flows of Sh.5million for 4 years after which in the 5th year an overhaul costing Sh.8million may be required. The machine would then generate Sh.5 million for the following 5 years.

Relevant Versus Incremental Cash flows

To evaluate capital expenditure alternatives, the firm must determine the relevant cash flows which are the incremental after-tax initial cash flow and the resulting subsequent inflows associated with a proposed capital expenditure. Incremental cash flows represent the additional cash flows (inflowing and outflows) expected to result from a proposed capital expenditure.

Sunk Costs Vs Opportunity Cost

Sunk costs are cash outlays that have already been made (past outlays) and therefore have no effect on the cash flows relevant to a current decision. Therefore sunk costs should not be included in a project's incremented cash flows.

Opportunity costs are cash flows that could be realized from the best alternative use of an owned asset. They represent cash flows that can therefore not be realized, by employing that asset in the proposed project. Therefore, any opportunity cost should be included as a cash outflow when determining a project's incremental cash outflows.

CAPITAL BUDGETING TECHNIQUES.

There are different methods of analyzing the viability of an investment. The preferred technique should consider time value procedures, risk and return considerations and valuation concepts to select capital expenditures that are consistent with the firm's goals of maximizing owner's wealth.

Capital budgeting techniques are grouped in two:

a) Non-discounted cash flow techniques (traditional methods)

i. Accounting rate of return method(ARR)
ii. Pay back period method(PBP)

b) Discounted cash flow techniques (modern methods)

i. Net present value method(NPV)
ii. Internal rate of return method(IRR)
iii. Profitability index method(PI)

NON-DISCOUNTED CASH FLOW TECHNIQUES

ACCOUNTING RATE OF RETURN METHOD (ARR)

This is the only method that does not use cashflows but instead uses accounting profits as shown in the financial statements of a company. It is also known as return on investment (ROI).
The ARR is given by:

$$ARR = \frac{\text{Average annual profit after tax}}{\text{Average investment}}\ x\ 100$$

Illustration:
Aqua ltd has a proposal for a project whose cost is Sh.50million and has an economic useful life of 5 years. It has a nil residual value. The earnings before depreciation and tax expected from the project are as follows:

Year	Earnings before depreciation and tax Sh.'000'
1	12000
2	15000
3	18000
4	20000
5	22000

The corporate tax rate is 30% and depreciation is on straight line basis.

Solution:

$$\text{Depreciation} = \frac{50\text{M} - 0}{5} = 10\text{M}$$

Calculation of the average income,

Year

	1	2	3	4	5
Earnings before dep.	12000	15000	18000	20000	22000
Less depreciation	10000	10000	10000	10000	10000
Earnings after dep	2000	5000	8000	10000	12000
Tax @ 30%	-600	-1500	-2400	-3000	-3600
Profit after tax	1400	3500	5600	7000	8400

$$\text{Average Income} = \frac{1400 + 3500 + 5600 + 7000 + 8400}{5}$$

$$= Ksh.\,5{,}180{,}000$$

$$\text{Average investment} = \frac{\text{Initial investment} + \text{salvage value}}{2}$$

$$\text{Average investment} = \frac{50\,000\,000 + 0}{2}$$

$$= 2500000$$

$$\text{ARR} = \frac{\text{Average income}}{\text{Average investmen}} \text{ x } 100$$

$$\text{ARR} = \frac{5\,180\,000}{25\,000\,000} \text{ x } 100$$

$$= 20.72\%$$

Decision criteria:

If the projects are mutually exclusive the project with the highest ARR is accepted. If projects are independent, they should be ranked from the one with the highest ARR which should come first to the one with the lowest as the last.

If the firm has a minimum acceptable ARR, then the decision will be based on the project with a higher ARR as per their preferred rate.

Advantages of ARR

1. Simple to understand and use.
2. The accounting information used is readily available from the financial statements.
3. All the returns in the entire life of the project are used in determining the project's profitability.

Weaknesses of ARR

1. Ignores time value of money.
2. Uses accounting profits instead of cashflows which could have been arbitrarily determined.
3. Growth companies earning very high rates of return on the existing assets may reject profitable projects as they have set a higher minimum acceptable ARR, the less profitable companies may set a very low acceptable ARR and may end up accepting bad projects.
4. Does not allow for the fact that profits can be reinvested.

PAY BACK PERIOD METHOD (PBP)

Payback period refers to the number of periods/ years that a project will take to recoup its initial cash outlay.
This technique applies cash flows and not accounting profits.
Computation of payback period:

1. **Under uniform annual incremental cash inflows** – if the venture or an asset generates uniform cash inflows then the payback period (PBP) will be given by:

$$\text{PBP} = \frac{\text{Initial cost of the venture}}{\text{Annual incremental cost}}$$

E.g. If a venture costs 37,910/= and promises returns of 10,000/= per annum indefinitely then the PBP =

$$\frac{37{,}910}{10{,}000} = 3.79 \text{ years}$$

The shorter the PBP the more viable the investment and thus the better the choice of such investments

2. **Under non-uniform cash inflows:**
Under non-uniformity PBP computation will be in cumulative form and this means that the net cash inflows are accumulated each year until initial investment is recovered.

Example
Assume a project costs Sh.80,000 and will generate the following cash inflows:

Cash inflows			**Accumulated inflows**
Inflows year 1	=	10,000	10,000
Inflows year 2	=	30,000	40,000
Inflows year 3	=	15,000	55,000
Inflows year 4	=	20,000	75,000
Inflows year 5	=	30,000	105,000

The Sh.80,000 cost is recovered between year 4 and 5. During year 5 (after year 4) Sh.5,000 is (80,000 – 75,000) is required out the total year 5 cash flows of 30,000.

$$\text{Therefore the PBP} = 4\text{yrs} + \frac{5{,}000}{30{,}000} = 4.17 \text{ years}$$

Illustration

Cedes limited has the following details of two of the future production plans. Only one of these machines will be purchased and the venture would be taken to be virtually exclusive. The Standard model costs £50,000 and the Deluxe cost £88,000 payable immediately. Both machines will require the input of the following:

i) Installation costs of £20,000 for Standard and £40,000 for the Deluxe
ii) A £10,000 working capital through their working lives.

Both machines have no expected scrap value at end of their expected working lives of 4 years for the Standard machine and six years for the Deluxe. The operating pre-tax net cash flows associated with the two machines are:

Year	**1**	**2**	**3**	**4**	**5**	**6**
Standard	28,500	25,860	24,210	23,410	-	-
Deluxe	36,030	30,110	28,380	25,940	38,500	35,100

The deluxe machine has only been introduced in the market and has not been fully tested in the operating conditions, because of the high risk involved the appropriate discount rate for the deluxe machine is believed to be 14% per annum, 2% higher than the rate of the standard machine. The company is proposing the purchase of either machine with a term loan at a fixed rate of interest of 11% per annum, taxation at 30% is payable on operating cash-flows one year in arrears and capital allowance are available at 25% per annum on a reducing balance basis.

Required;-

For both the Standard and the Deluxe machines, calculate the payback period.

Solution

Establish the cash flows as follows:

Pre-tax inflows (EBDT)			XX
Less depreciation = capital allowance		(XX)	
Earnings before tax	XX		
Less tax			(XX)
Earnings after tax	XX		
Add back capital allowance/depreciation			XX
Operating cash flows	XX		

Note

Capital allowance/depreciation is a non-cash item thus when deducted for tax purposes, it should be added back to eliminate the non-cash flow effects.

Cash flows for standard machine:

Year	**1**	**2**	**3**	**4**	**5**
Pretax inflow	28,500	25,850	24,210	23,410	-
Less allowance (depreciation)	17,500	13,125	9,844	7,383	-
Taxable cash inflows	11,000	12,735	14,366	16,027	
Tax @ 30% 1yr in arrears	-	3.300	(3,831)	(4,310)	(4,808)
	11,000	9,435	10,545	11,717	(4,808)
Add back capital allowance	17,500	13,125	9,844	7,383	-
Operating cash flows	28,500	22,560	20,389	19,100	(4,808)
Add working capital realised	-	-	-	10,000	-
Total cash flows	28,500	22,560	20,389	29,100	(4,808)

Cash flows for Deluxe machine

Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Pretax inflows	36,030	30,110	28,380	25,940	38,560	35,100	-
Less (depreciation)	32,000	24,000	18,000	13,500	10,125	7,594	-
Tax @ 30% in arrears	4,030	6,110	10,380	12,440	28,435	27,506	-
	-	(1,209)	(1,833)	(3,114)	(3,732)	(8,531)	(8,252)
Inflows after tax	4,030	4,901	8,547	9,326	24,703	18,975	(8,252)
Add back capital Allowance	32,000	24,000	18,000	13,500	10,125	7,594	-
Add back w/capital		28,901	26,547	22,826	34,828	26,569	(8,252)
Total cash flows	-	-	-	-	-	10,000	-
	36,030	28,599	26,547	22,826	34,828	36,569	(8,252)

		Standard		Deluxe
Cost	50,000 + 20,000	70,000	88,000 + 40,000	128,000

Year	Cash flows	Accumulated	Cash flows	Accumulated
1	28,500	28,500	36,030	36,030
2	22,560	51,060	28,901	64,931
3	20,389	71,449	26,547	91,478
4	29,100	100,549	22,826	114,304
5	(4,808)	95,741	34,828	149,132
6	-	-	36,569	185,701
7	-	-	(8,252)	179,449

* Pay back period for standard: Initial capital of Sh.7,000 is recovered during year 3. After year 2, we require 70,000 – 51,060 = 18,940 to recover initial capital out of year 3 cash flows of Sh.20,389

$$2+\frac{18940}{20389}= 2.92 \text{ years}$$

* Applying the same concept for Deluxe, payback period would be:

$$4+\frac{128,000-114,304}{34,828} = 4.39 \text{ years}$$

Illustration 2:

AQMW systems, a medium sized software engineering company that is currently contemplating two projects: project A requires an initial investment of Sh.42million and project B requires an initial investment of Sh.45million. The projected relevant cash flows for the two projects are shown below.

	PROJECT A	PROJECT B
Initial Investment (yr 0)	Sh.42 million	Sh.45 million
Operating cash flows		
Year 1	Sh.14 million	Sh.28 million
Year 2	Sh.14 million	Sh.12 million
Year3	Sh.14 million	Sh.10 million
Year 4	Sh.14 million	Sh.10 million
Year 5	Sh.14 million	Sh.10 million
Average	**Sh.14 million**	**Sh.14 million**

For project A, (Annuity cashflows)

Payback period $=\frac{42}{14} = 3.0$ years

For project B (a mixed cashflows), the initial investment of Sh.45million will be recovered between the 2nd and 3rd year-ends.

Year	Cash flow (Sh)	Cumulative cash flow (Sh.)
1	28million	28million
2	12million	40million
3	10million	50million
4	10million	60million
5	10million	70million

Pay back period = $2+\frac{5}{10}=2.5years$

Only 50% of year 3 cash inflows of Sh.10million are needed to complete the payback period of the initial investment ofSh.45million. Therefore payback period of project B is 2.5 years.

Decision Criteria

If AQMW systems maximum acceptable Payback period was 2.75 years, Project A would be rejected and project B would be accepted. If projects were being ranked, Project B would be preferred.
Where the projects are independent the project with the lowest PBP should rank as the first as the initial outlay is recouped within a shorter time period.
For mutually exclusive projects the project with the lowest PBP should be accepted.

Advantages of PBP

1. It's simple to understand and use.
2. It's ideal under high risk investment as it identifies which project will payback as soon as possible
3. PBP is cost effective as it does not require use of computers and a lot of analysis
4. PBP emphasizes on liquidity hence funds which are released as early as possible can be reinvested elsewhere

Weaknesses of PBP

1. It does not consider all the cashflows in the entire life of the project.
2. It does not measure the profitability of a project but rather the time it will take to payback the initial outlay
3. PBP does not take into account the time value of money
4. It does not have clear decision criteria as a firm may face difficulty in determining the minimum acceptable payback period
5. It is inconsistent with the shareholders wealth maximization objective. Share values do not depend on the payback period but on the total cashflows.

DISCOUNTED CASHFLOW TECHNIQUES

1. Present Value Concept

This concept acknowledges the fact that a shilling loses value with time and as such if it is to be compared with a shilling to be received in N^{th} year then the two must be at the same values. This means that an investor's analytical power is increased by his/her ability to compare cash inflows and outflows separated from each other by time. He/she should be able to work in the reverse direction i.e. from future cash flows to their present values.

2. Present Value of a Lumpsum

Usually an investor would wish to know how much he/she would give up now to get a given amount in year 1, 2, … n. In this situation he would have to decide at what rate of discount also known as time preference rate, he/she will use to discount the anticipated lumpsum using this rate by applying the following formula:

$$Pv = \frac{L}{(1+K)^n}$$

Where: Pv = Present value
L = Lumpsum
K = Cost of finance or time preference rate
n = given year.

This implies that if the time preference rate is 10%, the present value of 1/= to e received at the end of year 1 is:

$$Pv = \frac{1}{1.1} = 0.909$$

The present value of inflows to be received in the 2nd year to Nth year, will be equal to:

$$Pv = \frac{A}{(1+K)^N}$$

Where: A = annual cash flows
N = Number of years

Also, the present value of a shilling to be received at a given point in time can in addition to using the above formula, be found using the present value tables.

Suppose that an investor can expect to receive:
40,000 at the end of year 2
70,000 at the end of year 6
100,000 at the end of year 8

Compute his present (value) if his time preference is 12%.

$$Pv = \frac{L}{(1+K)^N} = \frac{40{,}000}{(1.12)^2} + \frac{70{,}000}{(1.12)^6} - \frac{100{,}000}{(1.12)^8}$$

= Kshs.107,740.26

Using tables:

= 40,000(0.7992) + 70,000(0.5066) + 100,000(0.4039)

= 107,820

3. Present Value of an Annuity

An individual investor may not necessarily get a lumpsum after some years but rather get a constant periodic amount i.e. an annuity for certain number of years. The present value of an annuity receivable where the investor time preference is 10% equal to:

$$Pv(A) = \frac{A}{(1+i)}$$ I = time preference rate

E.g. Pv of 1/= to be received after 1 year if time preference rate is 10%.

$$= \frac{1}{1+0.1} = 0.909$$

After 2 years it will be: $$\frac{A}{(1+i)^2} = \frac{1}{(1.1)^2} = 0.8264$$

1st year	-	0.9090
2nd year	-	0.8264
3rd year	-	0.7513
4th year	-	0.6830
Total	-	3.1697

4. Present Value of Uneven Periodic Sum

In investment decisions it is very rare to get even periodic returns and in most cases a company will generate a stream of uneven cash inflows from a venture and the present value of those uneven periodic sums is equal to:

$$Pv = \frac{A_1}{(1+K)^1} + \frac{A_2}{(1+K)^2} + \frac{A_3}{(1+K)^3} + \ldots + \frac{A_N}{(1+K)^N}$$

Equation

$$Pv = \sum \frac{A_t}{(1+K)^t}$$

Where: A_t = Uneven cash inflows at time t
Pv = Present value
K =Cost of finance

Illustration

A company contemplates to receive Shs.:

20,000	in year 1
18,000	in year 2
24,000	in year 3
Nil	in year 4
40,000	in year 5

Cost of this finance is 12%

Required;-

Compute present value of that finance

Solution

$$Pv = \frac{30,000}{(1.12)^1} + \frac{18,000}{(1.12)^2} + \frac{24,000}{(1.12)^3} + \frac{40,000}{(1.12)^5}$$

= 80,915.004

5. Net Present Value Method

The method discounts inflows and outflows and ascertains the net present value by deducting discounted outflows from discounted inflows to obtain net present cash inflows i.e the present value method will involve selection of rate acceptable to the management or equal to the cost of finance and this will be used to discount inflows and outflows and net present value will be equal to the present value of inflow minus present value of outflow. If net present value is positive you invest, If NPV is negative you do not invest.

Pv(inflow) – Pv(outflows) = NPV

Note

Initial outflow is at period zero and their value is their actual present value. With this method, an investor can ascertain the viability of an investment by discounting outflows. In this case, a venture will be viable if it has the lowest outflows.

$$NPV = \left[\frac{A_1}{(1+K)^1} + \frac{A_2}{(1+K)^2} + \frac{A_3}{(1+K)^3} + ... + \frac{A_N}{(1+K)^N} \right] - C$$

Where: A = annual inflow
K = Cost of finance
C = Cost of investment
N = Number of years

Examples

Cost of investment = 100,000/=, interest rate = 10%, inflows year 1 = 80,000/= year 2 = 50,000/=

NPV = $\frac{80,000}{1.1} + \frac{50,000}{(1.1)^2} - 100,000$ = 14,049 positive hence invest.

Illustration

Jeremy limited wishes to expand its output by purchasing a new machine worth 170,000 and installation costs are estimated at 40,000/=. In the 4th year, this machine will call for an overhaul to cost 80,000/=. Its expected inflows are:

	Sh
Year 1	60,000
Year 2	72,650
Year 3	35,720
Year 4	48,510
Year 5	91,630
Year 6	83,715

This company can raise finance to purchase machine at 12% interest rate.
Compute NPV and advise management accordingly.

Solution

	Sh.
Cost of machine at present value	170,000
Installation cost	40,000
	210,000

Overhaul cost in the 4th year = 80,000
Discounting factor = $(1.12)^4$
Therefore present value = $\frac{80,000}{(1.12)^4}$ = Shs.50,841.446

Total present value of investment = 260,841.45

PV inflows = $\frac{60,000}{(1.12)} + \frac{72,650}{(1.12)^2} + \frac{35,720}{(1.12K)^3} + \frac{48,510}{(1.12)^4} + \frac{91,630}{(1.12)^5} + \frac{83,715}{(1.12)^6}$

= 262,147.28

Therefore: NPV = 262,147.28 – 260,841.45
NPV = 1,305.83

The NPV is positive and I would advise the management to invest.

Illustration
Resilou limited intends to purchase a machine worth Shs.1,500,000 which will have a residue value Shs.200,000 after 5 years useful life. The saving in cost resulting from the use of this machine are:

	Shs.
Year 1	800,000
Year 2	350,000
Year 3	-
Year 4	680,000
Year 5	775,000

Using NPV method, advise the company whether this machine should be purchased if the cut off rate is 14% and acceptable saving in cost is 12% of the cost of the investment.

Solution

Year	**1**	**2**	**3**	**4**	**5**
Saving	800,000	350,000	-	680,000	775,000
Scrap value	-	-	-	-	200,000
Total amount	800,000	350,000	-	680,000	975,000

$$NPV = \frac{800,000}{(1.14)^1} + \frac{350,000}{(1.14)^2} + \frac{680,000}{(1.14)^4} + \frac{975,000}{(1.14)^5} - 1,500,000$$

= 1,880,067.1 – 1,500,000
= 380,067.07

$$\text{Return} = \frac{380,067.0}{1,500,000} \times 100 = 25.337\% > 12\% \text{ hence invest.}$$

NB: Assuming that the salvage will be realised.

Illustration
A section of a roadway pavement costs £400 per year to maintain. What new expenditure of a new pavement is justified if no maintenance will be required for the 1st five years then £100 for the next 10 years and £400 a year thereafter? Assume cost of finance to be 5%.

Solution

Total present value of maintenance costs under the re-surfacing scheme.

Maximum expenditure = $\frac{400}{0.05} = £8{,}000$

Present value of an Annuity for n years is given by the formula:

$$PV = A\left[\frac{1-\frac{1}{(1+K)^n}}{K}\right]$$

Whereby: PV is Present value
A is annuity
K is cost of finance
n is number of year

Present value of an annuity to perpetuity is given by the formula

Pv = $\frac{A}{K}$

Whereby: PV is Present value
A is annuity
K is cost of finance

Therefore PV maximum expenditure = $\frac{400}{0.05} = £8{,}000$

PV = Minimum expenditure= £[4,453]
= Justified expenditure = £3,547

$$PV = 100\left[\frac{1-\frac{1}{(1.05)^{15}}}{0.5}\right] - 100\left[\frac{1-\frac{1}{(1.05)^{5}}}{0.5}\right] + \frac{400}{0.5} - 400\left[\frac{\frac{1}{(1.05)^{15}}}{0.5}\right]$$

= £4,453

NB: The present value interest factors PVIF = $\frac{1}{(1+r)^n}$ and present value

Annuity factors, PVAF = $\frac{1-(1+r)^{-n}}{r}$ can be read from tables provided at the point of intersection between the discounting rate and number of periods.

Accept or reject rule of NPV

Under this method, a company should accept an investment venture if N.P.V. is positive i.e. if present value of cash outflows exceeds that of cash inflows or at least is equal to zero. (NPV ≥ 0). This will rank ventures giving the highest rank to that venture with highest NPV because this will give the highest cash inflow or capital gain to the company.

Advantages of NPV

- It recognises time value of money and such appreciates that a shilling now is more valuable than a shilling tomorrow and the two can only be compared if they are at their present value.
- It takes into account the entire inflows or returns and as such it is a realistic gauge of the profitability of a venture.
- It is consistent with the value of a share in so far as a positive NPV will have the implication of increasing the value of a share.

It is consistent with the objective of maximising the welfare of an owner because a positive NPV will increase the net worth of owners.

Disadvantages of NPV

- It is difficult to use.
- Its calculation uses cost of finance which is a difficult concept because it considers both implicit and explicit whereas NPV ignores implicit costs.
- It is ideal for assessing the viability of an investment under certainty because it ignores the element of risk.
- It may not give good assessment of alternative projects if the projects are unequal lives, returns or costs.
- It ignores the PBP.

INTERNAL RATE OF RETURN (IRR)

This method is a discounted cash flow technique which uses the principle of NPV. It is defined as the rate which equates the present value of cash outflows of an investment to the initial capital.

IRR = Pv (cash inflows) = Pv(cash outflows) or IRR is the cost of capital when NPV = 0.

It is also called internal rate of return because it depends wholly on the outlay of investment and proceeds associated with the project and not a rate determined outside the venture.

$$IRR = C = \frac{A_1}{(1+r)^1} + \frac{A_2}{(1+r)^2} + \frac{A_3}{(1+r)^3} + \ldots\ldots + \frac{A_N}{(1+r)^N}$$

A = inflow for each period
C = Cost of investment

The value r can be found by:

i. Trial and error
ii. By interpolation
iii. By extrapolation

i) Trial and error method

a) Select any rate of interest at random and use it to compute NPV of cash inflows.
b) If rate chosen produces NPV lower than the cost, choose a lower rate.
c) If the rate chosen in (a) above gives NPV greater than the cost, choose a higher rate. Continue the process until the NPV is equal to zero and that will be the IRR.

Example

A project costs 16,200/= and is expected to generate the following inflows:

	Sh.
Year 1	8,000
Year 2	7,000
Year 3	6,000

Compute the IRR of this venture.

Solution

1st choice 10%

$$\frac{8,000}{(1.1)^1}+\frac{7,000}{(1.1)^2}+\frac{6,000}{(1.1)^3} \quad = 17,565.74 > \text{cost, choose a higher rate.}$$

2nd choice 14%

$$\frac{8,000}{(1.14)^1}+\frac{7,000}{(1.14)^2}+\frac{6,000}{(1.14)^3} \quad = \quad 16,453.646$$

3rd choice 15%

$$\frac{8,000}{(1.15)^1}+\frac{7,000}{(1.15)^2}+\frac{6,000}{(1.15)^3} \quad = \quad 16,194.625$$

IRR lies between 14% and 15%.

ii) Interpolation method

			Difference
PV at rate of 14%	=	16,453.646	253.646
PV required	=	16,200.000	-5.375
PV at rate of 15%	=	16,194.625	

Therefore, r denotes required rate of return

$$\text{Therefore, } r = 14\% + (15\% - 14\%) \times \frac{253.646}{253.646 + 5.375}$$

$$= 14\% + 0.98\%$$

$$= \underline{14.98\%}$$

Acceptance Rule of IRR

IRR will accept a venture if its IRR is higher than or equal to the minimum required rate of return which is usually the cost of finance also known as the cut off rate or hurdle rate, and in this case IRR will be the highest rate of interest a firm would be ready to pay to finance a project using borrowed funds and without being financially worse off by paying back the loan (the principal and accrued interest) out of the cash flows generated by that project. Thus, IRR is the break-even rate of borrowing from commercial banks.

Advantages of IRR

- It considers time value of money
- It considers cash flows over the entire life of the project.
- It is compatible with the maximisation of owner's wealth because, if it is higher than the cost of finance, owners' wealth will be maximised.
- Unlike the NPV method, it does not use the cost of finance to discount inflows and for this reason it will indicate a rate of return of interval to the project against which various ventures can be assessed as to their viability.

Disadvantages of IRR

- Difficult to use.
- Expensive to use because it calls for trained manpower and may use computers especially where inflows are of large magnitude and extending beyond the normal limits.
- It may give multiple results some involving positive IRR in which case it may be difficult to use in choosing which venture is more viable.

DISCOUNTED PAYBACK PERIOD

One of the major disadvantages of simple payback period is that it ignores the time value of money. To counter this limitation, an alternative procedure called discounted payback period

may be followed, which accounts for time value of money by discounting the cash inflows of the project.

In discounted payback period we have to calculate the present value of each cash inflow taking the start of the first period as zero point. For this purpose the management has to set a suitable discount rate. The discounted cash inflow for each period is to be calculated using the formula:

$$\text{Discounted Cash Inflow} = \frac{\text{Actual Cash Inflow}}{(1 + i)^n}$$

Where;-

i - is the discount rate;

n - is the period to which the cash inflow relates.

The above formula is split into two components which are actual cash inflow and present value factor (i.e. $\frac{\mathbf{1}}{(\mathbf{1}+\boldsymbol{i})^{\boldsymbol{n}}}$). Thus discounted cash flow is the product of actual cash flow and present value factor.

The rest of the procedure is similar to the calculation of simple payback period except that we have to use the discounted cash flows as calculated above instead of actual cash flows. The cumulative cash flow will be replaced by cumulative discounted cash flow.

$$\text{Discounted Payback Period} = A + \frac{B}{C}$$

Where;

A = Last period with a negative discounted cumulative cash flow;

B = Absolute value of discounted cumulative cash flow at the end of the period A;

C = Discounted cash flow during the period after A.

Decision Rule

If the discounted payback period is less that the target period, accept the project. Otherwise reject.

Illustration

An initial investment of Sh.2, 324,000 is expected to generate Sh.600, 000 per year for 6 years. Calculate the discounted payback period of the investment if the discount rate is 11%.

Solution

Step 1: Prepare a table to calculate discounted cash flow of each period by multiplying the actual cash flows by present value factor. Create a cumulative discounted cash flow column.

Year	Cash Flow	Present Value Factor	Discounted Cash Flow	Cumulative Discounted
n	CF	PV=1/(1+i)n	CF×PV	Cash Flow
	Sh.		Sh.	Sh.
0	(2,324,000)	1	(2,324,000)	(2,324,000)
1	600,000	0.9009	540,541	(1,783,459)
2	600,000	0.8116	486,973	(1,296,486)
3	600,000	0.7312	438,715	(857,771)
4	600,000	0.6587	395,239	(462,533)
5	600,000	0.5935	356,071	(106,462)
6	600,000	0.5346	320,785	214,323

Step 2: Discounted Payback Period = 5 + |-106,462| / 320,785 ≈ 5.32 years

Advantages and Disadvantages

Advantage
Discounted payback period is more reliable than simple payback period since it accounts for time value of money. It is interesting to note that if a project has negative net present value it won't pay back the initial investment.

Disadvantage
It ignores the cash inflows from project after the payback period.

PROFITABILITY INDEX (PI)

Profitability index (PI), also known as profit investment ratio (PIR) and value investment ratio (VIR), is the ratio of payoff to investment of a proposed project. It is a useful tool for ranking projects because it allows you to quantify the amount of value created per unit of investment.

$$\text{P.I. (benefit-cost ratio)} = \frac{\text{Present value of inflows}}{\text{Present value of cash outlay}}$$

If P.I. is greater than 1.0, invest. If less than 1.0, reject.

Illustration
The following information was from XYZ feasibility studies. It has studied two ventures:

a) Cost 100,000/= and 160,000/= at the beginning of the 4th year and it will generate inflows 1-3rd year 80,000/= and from 4-6th year 50,000/= per annum.

b) Initial cost 200,000/= and 80,000/= at the beginning of the 4th year and it will generate the following inflows:

1st – 2nd year -> Shs.100,000 per annum
3rd – 6th year -> Shs.70,000 per annum

Using the cost of finance of 12% compute the P.I. of these two ventures, advise the company accordingly.

Solution

a) Outflows: $\frac{100,000}{1} + \frac{160,000}{(1.12)^3} = 100,000 + 113,887 = 213,885$

Inflows: $\frac{80,000}{(1.12)^1} + \frac{80,000}{(1.12)^2} + \frac{80,000}{(1.12)^3} + \frac{50,000}{(1.12)^4} + \frac{50,000}{(1.12)^5} + \frac{50,000}{(1.12)^6}$ = Shs.277,626

P.I. = $\frac{277,626}{213,885}$

P.I. = 1.298

b) Outflows: = $\frac{200,000}{1} + \frac{80,000}{(1.12)^3} = 256,944$

Inflows = $\frac{100,000}{(1.12)^1} + \frac{100,000}{(1.12)^2} + \frac{70,000}{(1.12)^3} + \frac{70,000}{(1.12)^4} + \frac{70,000}{(1.12)^5} + \frac{70,000}{(1.12)^6}$ = Shs.338,501

P.I. = $\frac{338,501}{256,944}$

= 1.32

Example

A company is faced with the following 5 investment opportunities:

	Cost	**NPV**	**P.I = Total PV / Initial capital**	**P.I Ranking**
1.	500,000	150,000	1.3	4
2.	100,000	40,000	1.4	3
3.	400,000	40,000	1.1	5
4.	200,000	100,000	1.5	2
5.	160,000	90,000	1.6	1

This company has ksh.750, 000available for investment projects, 3 and 4 are mutually exclusive. All of the projects are divisible. Which group should be selected in order to maximize the NPV. Indicate this NPV figure.

Solution

Using P.I. to rank the projects in order of preference 5, 4, 2, 1, 3

In order to maximize NPV, the following projects combination should be selected:

				Sh.
Funds available for investment				750,000
Cost of project:	5	160,000		
	4	200,000		
	2	100,000		
	1	290,000	(750,000-460,000)	(750,000)
				NIL

$$\text{NPV} = 90{,}000 + 100{,}000 + 40{,}000 + \frac{290{,}000}{500{,}000} \times 150{,}000 = 317{,}000$$

Advantages of profitability index

a) Simple to use and understand.
b) The element of NPV in the venture will indicate which venture is more powerful as the most profitable venture will have the highest P.I. as the difference or net P.I. will continue to the company's profitability.
c) It acknowledges time value for money and at the same time the NPV of a venture at its present value which is consistent with investment appraisal requirements.

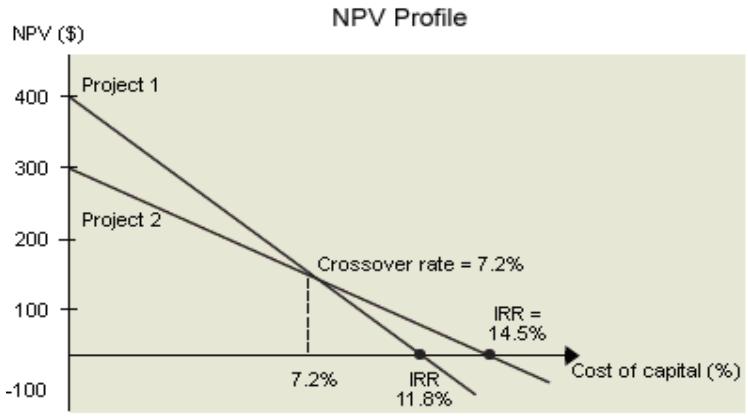
Disadvantages of profitability index

a) It may be useful under conditions of uncertain cost of finance used to discount inflows and yet this cost is a complex item due to the implicit and explicit element.
b) It may be difficult to ascertain if the economic life of a venture is long and it yields large inflows because their discounting may call for use of computers that are expensive.

NPV PROFILE

The NPV profile is a graph that illustrates a project's NPV against various discount rates, with the NPV on the y-axis and the cost of capital on the x-axis. To begin, simply calculate a project's NPV using different cost-of-capital assumptions. Once these are calculated, plot the values on the graph.

Example of an NPV profile



source: Fundamentals of Financial Management

This comparison allows decision-makers to determine the profitability of a project or initiative in different potential financing scenarios, enabling more effective cost-benefit planning.

COMPARISON OF THE NPV AND IRR METHODS WHEN EVALUATING INDEPENDENT AND MUTUALLY EXCLUSIVE PROJECTS

Net present value is an absolute measure i.e. it represents the amount of value added or lost by undertaking a project. IRR on the other hand is a relative measure i.e. it is the rate of return a project offers over its lifespan.
NPV and IRR are two of the most widely used investment analysis and capital budgeting decision tools. Both are discounting models i.e. they take into account the time value of money phenomena. However, each method has its strengths and weaknesses and there are situations in which they do not agree on the ranking of acceptability of projects. For example, there might be a situation in which project X has higher NPV but lower IRR than project Y. This NPV and IRR conflict depends on whether the projects are independent or mutually exclusive.

Independent projects
Independent projects are projects in which decision regarding acceptance of one project does not affect decision regarding others.
Since all independent projects can all be accepted if they add value, NPV and IRR conflict doesn't arise. The company can accept all projects with positive NPV.

Mutually exclusive projects
Mutually exclusive projects are projects in which acceptance of one project excludes the others from consideration. In such a scenario the best project is accepted. NPV and IRR conflict, which can sometimes arise in case of mutually exclusive projects, becomes critical. The conflict either arises due to the relative size of the project or due to the different cash flow distribution of the projects.
Since NPV is an absolute measure, it will rank a project adding more value regardless of the original investment required. IRR is a relative measure, and it will rank projects offering best investment return higher regardless of the total value added.

Why the NPV and IRR Sometimes select different Projects

When comparing two projects, the use of the NPV and the IRR methods may give different results. A project selected according to the NPV may be rejected if the IRR method is used.

Suppose there are two alternative projects, X and Y. The initial investment in each project is Ksh. 2,500. Project X will provide annual cash flows of Ksh500 for the next 10 years. Project Y has annual cash flows of Ksh100, Ksh200, Ksh300, Ksh400, Ksh500, Ksh600, Ksh700, Ksh800, Ksh900, and Ksh1, 000 in the same period.

Using the trial and error method explained before, you find that the IRR of Project X is 17% and the IRR of Project Y is around 13%. If you use the IRR, Project X should be preferred because its IRR is 4% more than the IRR of Project Y. But what happens to your decision if the NPV method is used? The answer is that the decision will change depending on the discount rate you use. For instance, at a 5% discount rate, Project Y has a higher NPV than X does. But at a discount rate of 8%, Project X is preferred because of a higher NPV.

The purpose of this numerical example is to illustrate an important distinction: The use of the IRR always leads to the selection of the same project, whereas project selection using the NPV method depends on the discount rate chosen.

Project size and life

There are reasons why the NPV and the IRR are sometimes in conflict: the size and life of the project being studied are the most common ones. A 10-year project with an initial investment of Ksh100,000 can hardly be compared with a small 3-year project costing Ksh10,000. Actually, the large project could be thought of as ten small projects. So if you insist on using the IRR and the NPV methods to compare a big, long-term project with a small, short-term project, don't be surprised if you get different selection results.

Different cash flows

Furthermore, even two projects of the same length may have different patterns of cash flow. The cash flow of one project may continuously increase over time, while the cash flows of the other project may increase, decrease, stop, or become negative. These two projects have completely different forms of cash flow, and if the discount rate is changed when using the NPV approach, the result will probably be different orders of ranking. For example, at 10% the NPV of Project A may be higher than that of Project B. As soon as you change the discount rate to 15%, Project B may be more attractive.

When are the NPV and IRR Reliable?

Generally speaking, you can use and rely on both the NPV and the IRR if two conditions are met. First, if projects are compared using the NPV, a discount rate that fairly reflects the risk of each project should be chosen. There is no problem if two projects are discounted at two different rates because one project is riskier than the other. Remember that the result of the NPV is as reliable as the discount rate that is chosen. If the discount rate is unrealistic, the decision to accept or reject the project is baseless and unreliable.

Second, if the IRR method is used, the project must not be accepted only because its IRR is very high. Management must ask whether such an impressive IRR is possible to maintain. In other words, management should look into past records, and existing and future business, to see whether an opportunity to reinvest cash flows at such a high IRR really exists. If the firm is convinced that such

an IRR is realistic, the project is acceptable. Otherwise, the project must be reevaluated by the NPV method, using a more realistic discount rate.

NB;-The internal rate of return (IRR) is a popular method in capital budgeting. The IRR is a discount rate that makes the present value of estimated cash flows equal to the initial investment. However, when using the IRR, you should make sure that the calculated IRR is not very different from a realistic reinvestment rate.

EXPECTED RELATIONS AMONG AN INVESTMENT'S NPV, COMPANY VALUEAND SHARE PRICE

The net present value calculator (NPV calculator) is a tool that can assist in estimating the intrinsic value of a company (its true worth) when considering whether to purchase its stock.
The calculation is based on forecast earnings for a number of years in the future. The investor can then compare the calculated intrinsic value to the current stock price to determine its value as an investment.

More generally, a net present value enables an investor to determine the difference between the present value (PV) of the future cash flows from an investment and the amount to be initially invested.
This present value of the expected cash flows is computed by discounting the expected cash flows at the individual investor's required rate of return (also referred to as the discount rate).

There are a number of ways to calculate a stock's value, but one of the most elegant and relatively simple ways continues to be via the dividend discount model (DDM) individual investors can estimate the price they should be willing to pay for a stock or determine whether a given stock is undervalued or overvalued.

The dividend discount model starts with the premise that that a stock's price should be equal to the sum of its current and future cash flows, after taking the "time value of money" into account.

Under this approach there are three ways of determining whether a given stock is undervalued or overvalued.

Example

For example, an investment of Sh.2, 000 today at 10 per cent will yield Sh.2, 200 at the end of the year. So the present value of Sh.2, 200 at the required rate of return (10 per cent) is Sh.2, 000.
The initial investment (Sh.2,000 in this example) is deducted from this figure to arrive at NPV which here is zero (Sh.2,000- Sh.2,000).

A zero NPV means the initial investment is repaid plus the required rate of return. A positive NPV means a better return than a zero NPV. A negative NPV means a worse return than the

return from a zero NPV.

Illustration
An investor expects to invest in a company and to get shs.150 as dividends from a share next year and hopes to sell off the share at sh.30 after holding it for 1 year. The required rate of return.

Required;-
What is the present value of the share?
How much should he be willing to buy a share of the company?

SOLUTION

Value of a share $= \frac{\boldsymbol{Dividends}}{(\mathbf{1}+\boldsymbol{k})^{\mathbf{1}}} + \frac{\boldsymbol{selling\ price}}{(\mathbf{1}+\boldsymbol{k})^{\mathbf{1}}}$

$$= \frac{1.5\ 0}{(1+0.2)^{1}} + \frac{3\ 0}{(1+0.2)^{1}} = \textbf{sh.26.25}$$

The value he should be willing to pay for the share should besh.26.25 or less. Sh. 26.25 is the intrinsic value of the share. The investor would buy this share only if the current market price is lower than or equal to the value.

Illustration
An investor intends to invest in XYZ Company and expects to get sh. 3.5, 4, 4.5 as dividends from a share during the next 3 years and hopes to sale it off at sh.75 at the end of the third year. The required rate of return is 25%.

Required;-
What's the present value of the share of XYZ Company?

Value of the share $= \frac{\boldsymbol{Dividends}}{(\ +\boldsymbol{k})} + \frac{\boldsymbol{Dividends}}{(\ +\boldsymbol{k})} + \frac{\boldsymbol{Dividends}}{(\ +\boldsymbol{k})} + \frac{\boldsymbol{selling\ price}}{(\ +\boldsymbol{k})}$

$$\frac{.}{(\ +\ .\ )} + \frac{\ }{(\ +\ .\ )} + \frac{.}{(\ +\ .\ )} + \frac{\ }{(\ +\ .\ )} = \textbf{sh.46.06}$$

Net Present Value Analysis
A positive result from the subtraction above would indicate a better return on the investment than the required return. This is what is meant by a margin of safety. This would suggest that the stock is undervalued at the current share price

A zero result from the subtraction carried out above would indicate a return on investment equal to the required return set by the investor. This would suggest that the stock represents fair value at the current share price.

A negative result would indicate a poorer return than that set be the investor. This would then suggest that the stock is overvalued at the current share price.
The return required by the investor has an important influence on the determination of calculated fair value. The greater the return required by the investor, the lower the current share price needs to be to achieve a positive result from the subtraction carried out above.

DETERMINATION OF CASH FLOWS FOR INVESTMENT DECISION

Capital projects cash flows are classified into three categories, namely:

1. Total initial cost (I_O)
2. Total terminal cash flow (TCn)
3. Annual Net Operating Cash flow (N.C.F)

TOTAL INITIAL COST (I_O)

This is also known as the total initial cash outlay or the sum of the present of cash flow. The total initial cost is determined by summing up the following.

i) The cost of the asset
ii) Other incidental costs relating to acquisition of the asset e.g. installation cost, transportation and modification costs, payment of freight charges import duty, additional investment in working capital **etc.**

Initial costs(I_O)

	Sh	**Sh.**
Purchase cost		xx
Add incidental costs (Note 1)		
Installation cost	xx	
Transportation/freight	xx	
Import duty	xx	xx
		xxx
Additional investment cost		
Working capital **(Note 2)**		xx
Total initial cost		xxx

Incidental Costs – Note 1

These costs should be included in cost which is subjected to computation of annual provision for depreciation of the asset. This means that the cost will be amortised on the instalment basis over entire economic life of the asset. Therefore the cost will be recovered through provision for depreciation.

Additional investment in working capital – Note 2

Undertaking a capital project can cause a change on working capital e.g. increase in stock levels, increase in debtor's balances, increase in creditor's balances and the same things apply to accrued and prepaid expenses. Where this is the case determine the net increase in working capital and make the following two treatments.

i) At the beginning asset's economic life, the net increase in working capital is treated as an initial cost. If additional investment in working capital made in future, then determine its present value.

ii) At the end of asset's economic life, it is assumed that additional investment in working capital will be recovered, therefore treated as a terminal cash inflow.

TOTAL TERMINAL CASH FLOW (TCn)

Terminal cash flows are cash inflows which will be realised at the end of asset's economic life. This include;-

i) Salvage value of the asset

This is resale value of the asset at the end of its economic life which at times is known as scrap value, disposal value and residue value.

ii) Working capital recovered

Total Terminal Cash flows (TCn)

	Sh.
Salvage value	xx
Working capital recovered	xx
TCn	xx

ANNUAL NET OPERATING CASH FLOWS (N.C.F)

This refers to annual cash flows which will be generated from the firm's operations. An accurate prediction of the net operating cash flow requires an accurate prediction of the following:

i) Sale revenue or the total revenue per annum
i.e. TR = Unit Selling Price x Quantity Sold

$TR = (P \times Q) = (PQ)$

ii) An accurate computation of total variable cost i.e. costs which vary with output e.g. direct material costs, direct labour costs, direct expenses, etc.
Total Variable Cost (TVC) = Cost Per Unit x Quantity Manufactured

iii) Annual Fixed Operating Cost
The net operating cash flow per year is worked out as follows:

	Annual Sales (PQ)	xxx
Less:	Annual variable costs	xxx
	Annual contribution	xxx
Less:	Annual fixed operating	
	Costs excluding depreciation	xxx
	Earnings before depreciation and tax (EBDT)	xxx
Less:	Provision for depreciation **(Note 3)**	xxx
	Earnings before tax	xxx
Less:	Corporation tax	xxx
	Earnings after tax/Accounting profit	xxx
Add back:	Depreciation (provision)	xxx
	Net operating cash flow	xxx

Provision for Depreciation (Note 3)

Provision for depreciation can be done using straight line basis or reducing balance bases. (How to provide)

Provision for depreciation is a source of finance to a company in two ways;-

- To set aside fund which will be used in asset replacement upon exhausting their useful life.
- Depreciation tax shield benefit i.e. D.T.S. benefit when making capital budgeting decision, we make a fundamental assumption that provision for depreciation is equivalent to wear and tear i.e. is a capital allowance and therefore will attract the tax benefit (tax saving) known as depreciation tax shield benefit. D.T.S is therefore a reduction in the tax liability (tax saving).

  Therefore if provision for depreciation is not accounted for, tax liability will be greater and the company may require a tax refund of the excess tax paid. This refund will be a cash-in-flow.

  Therefore Tax Shied (D.T.S) Benefit = Annual provision for depreciation x Tax rate

  $$D.T.S. = D \times T$$

From the above two cases it can be seen that there are two approaches that can be used to compute annual Net Operating Cash flow of capital investment. These are:

Method 1

Net cash flows = (Earnings before depreciation and tax - depreciation) (1 –tax) + depreciation

N.C.F = [EBDT – D] [I – T] + D

Method 2

Net cash flows = Earnings before depreciation and tax (1 –tax) + depreciation tax shield

N.C.F = EBDT (1 – T) + D.T.S

Illustration

The management of a company is considering buying a machine at a cost of Sh. 2 million. The machine is expected to have an economic life of 5 years at the end of which the salvage value is estimated to be Sh. 500,000. It is estimated that the machine will produce the following quantity at the end of each year for 5 years.

Year	Quantity (Units)
1	10,000
2	15,000
3	18,000
4	20,000
5	15,000

Additional information;-

1. The unit selling price and unit variable costs are estimated at Sh. 50 and Sh. 15 respectively.
2. The annual fixed operating cost excluding depreciation are estimated at Sh. 100,000.
3. Investment in this asset is expected to cause increase in sale. To support this increase in sale, the company will require additional working capital. Stock will increase by Sh. 100,000, debtors to reduce by Sh. 20,000 and creditors will increase by Sh. 30,000. The increase in working capital will be required at the start of asset's economic life.
4. Installation cost of the machine is estimated at Sh. 100,000. Freight charges and import duty are estimated at Sh. 100,000 and Sh. 200,000 respectively.
5. The firm provides depreciation on straight line basis.
6. Cost of capital is 12%.
7. Coporation tax rate is 30%

Required

Determine the values of the relevant cashflows which are associated with the capital project.

Deprecation = $\frac{Cost - Salvage\ value}{n} = \frac{2400-500}{5} = 380$

D = $\frac{Cost}{n}$

Solution

i) The total initial cost

	Sh. 000	Sh. 000
Cost of machine		2000
Add: Incidental costs		
Installation costs	100	
Freight charges	100	
Import duty	200	400
		2400
Investment in working capital		
Increase in stock	100	
Decrease in debtors	(20)	
Increase in creditors	(30)	
Increase in Net working capital		50
		2450

ii) Total Terminal Cash flows (TCn)

	Sh.000
Salvage value	500
Working capital recovered	50
TCn	550

iii) Annual Net Operating Cash Flow (N.C.F)

a) N.C.F = (EBDT – D) (1 – T) + D

Net cash flows = (Earnings before depreciation and tax - depreciation) (1 –tax) + depreciation

	Year				
	1 Sh.000	2 Sh.000	3 Sh.000	4 Sh.000	5 Sh.000
Sales = P x Q	500	750	900	1000	750
Variable cost = C x Q	(150)	(225)	(270)	(300)	(225)
Contribution	350	525	630	700	525
Less Fixed operating Cost excluding dep.	(100)	(100)	(100)	(100)	(100)
E.B.D.T	250	425	530	600	425
Less provision for Depreciation	(380)	(380)	(380)	(380)	(380)
E.B.T	(130)	45	150	220	45
Less tax (30 %)	39	(13.5)	(45)	(66)	(13.5)
Earnings after tax	(91)	31.5	105	154	31.5
Add back prov. For dep.	380	380	380	380	380
N.C. F	289	411.50	485	534	411.50

(b) N.C.F = EBDT (1 – T) + D.T.S

Net cash flows = Earnings before depreciation and tax (1 –tax) + depreciation tax shield

D.T.S = D×T

$= 380{,}000 \times \frac{30}{100}$ = 114,000 Per annum for 5 years

Year	Sh. '000'	Sh. '000'
1	250 [1 – 30%] + 114	289
2	425 [0.7] + 114	411.5
3	530 [0.7] + 114	485
4	600 [0.] + 114	534
5	425 [0.7] + 114	411.5

INCREMENTAL APPROACH FOR CASH FLOWS ESTIMATION

Incremental cash flow is the additional operating cash flow that an organization receives from taking on a new project. A positive incremental cash flow means that the company's cash flow will increase with the acceptance of the project.

There are several components that must be identified when looking at incremental cash flows: the initial outlay, cash flows from taking on the project, terminal cost (or value) and the scale and timing of the project. A positive incremental cash flow is a good indication that an organization should spend some time and money investing in the project.

When determining incremental cash flows from a new project, several problems arise: sunk costs, opportunity costs, externalities and cannibalization.

1. Sunk Costs;-these are the initial outlays required to analyze a project that cannot be recovered even if a project is accepted. As such, these costs will not affect the future cash flows of the project and should not be considered when making capital-budgeting decisions.
2. Opportunity Cost;-This is the cost of not going forward with a project or the cash outflows that will not be earned as a result of utilizing an asset for another alternative.
3. Externality;-In the consideration of incremental cash flows of a new project, there may be effects on the existing operations of the company to consider, known as "externalities."
4. Cannibalization;-Cannibalization is the type of externality where the new project takes sales away from the existing product.

CAPITAL RATIONING

In a situation where the firm has unlimited funds, capital budgeting becomes a simple process in that all independent investment proposals yielding return greater than some predetermined levels are accepted. However this is not the situation prevailing in most business firms in real world. They have a fixed capital budget. The firm must, therefore, ration them.

Thus, capital rationing refers to a situation in which a firm has more acceptance investment, requiring a greater amount of finance than what is available within the firm. A system of ranking of investment project is used in capital rationing. Project can be ranked on the basis of some predetermined criterion such as the rate of return. The project with the highest return is ranked first and the project with the lowest acceptable return last. Any investment to be undertaken will need to be assessed as regards its viability using an acceptable appraisal approach.

Soft capital rationing

It is caused by internally generated factors of the company. It is a self-imposed capital rationing by the management of the company. Management may put a maximum budget limit to be spent within a specific period.

Examples/causes of soft capital rationing

1) A self-imposed budgetary limit where the management puts a ceiling on the maximum amount to be spent on investments.
2) Management may decide against issuing more equity finance in order to maintain control over the company's affairs by existing shareholders.
3) Management may opt not to raise more equity so as to avoid dilution in the Earning per share.
4) Management may decide against raising additional debt due to the following reasons:
    a) To avoid increase in interest payment commitment
    b) To control the gearing or operating leverage so as to maximize the financial risk.
5) If a company is small or family owned, its managers may limit the investment funds available to maintain constant growth through retained earnings as opposed to rapid expansion.

Hard capital rationing

It is externally imposed by the market and is caused by the factors beyond the control of the company. It occurs where the company has exhausted all its borrowing limits and is unable to raise funds externally.

Causes of hard capital rationing

1) Economic factors e.g. high interest rates and high inflation
2) Perception by investors that the company is risky. Where the company is deemed risky e.g. in an infant industry or operating in a very competitive market, the investors will not provide funds to that company.
3) High competition for funds by different companies resulting into an increase in the costs of borrowing.

4) Depressed stock exchange. The company's share market price is very low and so may find it hard to raise funds from the stock market.

Divisible projects

These are projects that can be undertaken in parts or in proportions depending on the capital available for investment. In capital rationing situations, where funds available are not enough to the entire project, the remaining funds can be partly invested in the next viable projects.

Illustration

ABC Ltd. is considering investing in the following independent projects

Project	PV of cash flow	Initial cost	NPV	P I
1	230,000	200,000	30,000	1.15
2	141,250	125,000	16,250	1.13
3	194,250	175,000	19,250	1.11
4	162,000	150,000	12,000	1.08

The company has set a capital limit of Sh.300000.

Required:

Advice the management on the projects to undertake

Solution

If there was no capital rationing then all the 4 projects would be accepted coz they have positive NPV. However with capital rationing, the projects have to be compared using PI index. With sh.300, 000, we could have invested in three options. Invest in project 1; invest in projects 2 and 3; invest in projects 2 and 4. We will select the option that gives us the highest weighted average profitability index.

A major assumption made in analysis is that the PI index of all projects is excess of one and the unused funds PI is equal to one.

Weighted average PI:

For option 1: 1.15(200/300) + 1.0(100/300) = 1.1

For option 2: 1.13(125/300) + 1.11(175/300) = 1.118

For option 3: 1.13(125/300) + 1.08(150/300) + 1(25/300) = 1.094

Decision: Invest in project 2 and 3 since this result in the highest weighted average PI.

Illustration

Uchumi Bakery is experiencing capital rationing in year zero when only Ksh 60,000 is available. No capital rationing is expected in the future period. But, none of the three projects under consideration can be postponed.

The firm's cost of capital is 10% and the expected cash flows are as follows;-

Project	Year 0	Year 1	Year 2	Year 3	Year 4
A	(30,000)	20,000	20,000	40,000	40,000
B	(28,000)	(50,000)	40,000	40,000	20,000
C	(30,000)	(30,000)	40,000	40,000	10,000

Required:

Determine which projects should be undertaken in year zero in view of the considered capital rationing given that projects are divisible.

Solution

Project	Year 0	Year 1	Year 2	Year 3	Year 4	NPV
PVIF, 10%	1.000	0.909	0.826	0.751	0.683	
A	(30,000)	(18,180)	16,520	30,040	27,320	5,700
B	(28,000)	(45,450)	33,040	30,040	13,660	3,290
C	(30,000)	(27,270)	24,780	30,040	6,830	4,380

NB: based on NPV, the three projects are acceptable for investment in the following order, A, C and B.

Efficiency analysis of the proceeds with which the invested capital generates wealth is as follows;

Project	NPV	Initial Cost (IC)	PI
A	5,700	(30,000)	0.114
B	3,290	(28,000)	0.118
C	4,380	(30,000)	0.146

Decision;-

Based on the above analysis, investment should be done in the following order, C, B, and A. since the available capital is Ksh. 60,000, the first two projects will be undertaken wholly while the last project will be undertaken partially as the projects are divisible.

REVISION QUESTIONS

QUESTION 1

(a) In making investment decisions, cashflows are considered to be more important than accounting profits. Briefly explain why this is the case.

(b) Magma Ltd. wishes to make a choice between two mutually exclusive projects. Each of these projects requires Sh.400,000,000 in initial cash outlay. The details of the two projects are as follows:

Project A

This project is made up of two sub-projects. The first sub-project will require an initial outlay of Sh.100,000,000 and will generate Sh.25,600,000 per annum in perpetuity. The second sub-project will require an initial outlay of Sh.300,000,000 and will generate Sh.85,200,000 per annum for the 8 years of its useful life. This sub-project does not have a residual value at the end of the 8 years. Both sub-projects are to commence immediately.

Project B

This project will generate Sh.87,000,000 per annum in perpetuity.
The company has a cost of capital of 16%.

Required:

i) Determine the net present value (NPV) of each project.
ii) Compute the internal rate of return (IRR) for each project.
iii) Advise Magma Ltd. on which project to invest in, and justify your choice.

QUESTION 2

(a) In the context of capital budgeting, explain the difference between "hard rationing" and "soft rationing".
(b) finance manager of Bidii Industries Ltd., which manufactures edible oils, has identified the following three projects for potential investment:

Project I

The project will require an initial investment ofSh.18 million and a further investment of Sh.25 million at the end of two years. Cash profits from the project will be as follows:

		Sh.
End of year	2	15,000,000
	3	12,000,000
	4	8,000,000
	5	8,000,000
	6	8,000,000
	7	8,000,000
	8	8,000,000

Project II

This project will involve an initial investment of Sh.50 million on equipment and Sh.18 million on working capital. The investment on working capital would be increased toSh.20 million at the end of the second year. Annual cash profit will be Sh.20 million for five years at the end of which the investment in working capital will be recovered.

Project III

The project will require an initial investment on capital equipment of Sh.84 million and Sh.24 million on working capital. The profits from the project will be as follows:

		Contribution Sh.	Fixed costs Sh.
End of year	1	35 million	8 million
End of year	2	30 million	6 million
End of year	3	14 million	8 million

Fixed costs include an annual depreciation charge ofSh.3 million. At the end of year 3, the working capital investment will be recovered and the capital equipment will be sold for Sh.8 million.

Bidii Industries Ltd.'s cost of capital is 12%. Ignore taxation.

Required:

(i) Evaluate each project using the net present value (NPV) method.

(ii) Which of the three projects should Bidii Industries Ltd. accept?

QUESTION 3

(a) Describe in brief the greatest difficulties faced in capital budgeting in the real world.

(b) Mumias Milling Company purchased a grinder 3 years ago at a cost of Sh.3.5 million. The grinder had a life of 8 years at the time of purchase. It is being depreciated at 15% per year on a declining balance. The company is considering replacing it with a new grinder costing Sh.7 million with an expected useful life of 5 years.

Due to increased efficiency, the profit before depreciation is expected to increase by Sh.400,000 a year. The old and new grinders will now be depreciated at 25% per year on a declining balance for tax purposes.

The salvage value of the new grinder is estimated at Sh.210,000. The market value of the old grinder, today, is Sh.4 million. It is estimated to have a zero salvage value after 5 years.
The company's tax is 30% and the after tax cost of capital is 12%.

Required

Should the new grinder be bought? Explain.

QUESTION 4

Magharibi Cane Millers Ltd. is a company engaged in the pressing and processing of sugar cane juice into refined sugar. For some time, the company has been considering the replacement of its three existing machines.

The production manager has learnt from a professional newsletter on sugar of the availability of a new and larger machine whose capacity is such that it can produce the same level of output per annum currently produced by the three machines. Furthermore, the new machine would cut down on the wastage of juice during processing. If the old machines are not

replaced, an extraordinary overhaul would be immediately necessary in order to maintain them in operational condition. This overhaul would at present cost Sh.5,000,000 in total.

The following additional information is available:

1. The old machines were purchased 5 years ago and are being depreciated over 15 years on a straight line basis, with an estimated final scrap value of Sh.600,000 each. The current second hand market value of each of the machines is Sh.1,000,000.
2. The annual operating costs for each of the existing machines are:

	Sh.	**Sh.**
Raw sugar cane		60,000,000
Labour (one operator)		1,350,000
Variable expense		925,000
Maintenance (excluding overhaul expenditure)		2,000,000
Fixed expenses:	75,000	-
Depreciation	2,700,000	2,775,000
Fixed factory overhead absorbed		

3. The new machine has an estimated life of ten years and its initial cost will comprise:

	Sh.
Purchase price (scrap value in 10 years Sh.4,500,000)	87,000,000
Freight and installation	13,000,000
	100,000,000

4. The estimated annual operating costs, if all the current output is processed on the new machine are:

	Sh.	**Sh.**
Raw sugar cane		162,000,000
Labour (one operator)		3,900,000
Variable expense		2,275,000
Maintenance (excluding overhaul expenditure)		
Fixed expenses:		
Depreciation	9,550,000	
Fixed factory overhead absorbed	7,800,000	17,350,000
Maintenance		4,500,000

5. The company's cost of capital is 10%.
6. For a project to be implemented, it must pass both the profitability test, as indicated by its internal rate of return and also satisfy a financial viability test, in that it must pay back for itself within a maximum period of five years.

Required:

(a) (i) Net present values of the proposed replacement decision using discount rates of 10% and 20%.

(ii)The estimated internal rate of return (IRR) of the replacement decision using the values determined in (i) above.

(iii)Advice management on the proposal based on your answer in (ii) above.

(b) Decision as to whether the project meets the financial viability test.

(c) Comment on any other qualitative considerations that could influence this decision.

Note: Ignore taxation

QUESTION 5

P. Muli was recently appointed to the post of investment manager of Masada Ltd. a quoted company. The company has raised Sh.8,000,000 through a rights issue.

P. Muli has the task of evaluating two mutually exclusive projects with unequal economic lives. Project X has 7 years and Project Y has 4 years of economic life. Both projects are expected to have zero salvage value. Their expected cash flows are as follows:

Project	**X**	**Y**
Year	**Cash flows (Sh.)**	**Cash flows (Sh.)**
1	2,000,000	4,000,000
2	2,200,000	3,000,000
3	2,080,000	4,800,000
4	2,240,000	800,000
5	2,760,000	-
6	3,200,000	-
7	3,600,000	-

The amount raised would be used to finance either of the projects. The company expects to pay a dividend per share of Sh.6.50 in one year's time. The current market price per share is Sh.50. Masada Ltd. expects the future earnings to grow by 7% per annum due to the undertaking of either of the projects. Masada Ltd. has no debt capital in its capital structure.

Required:

a) The cost of equity of the firm.

b) The net present value of each project.

c) The Internal Rate of return (IRR) of the projects. (Rediscount cash flows at 24%

d) for project X and 25% for Project Y).

e) Briefly comment on your results in (b) and (c) above.

f) Identify and explain the circumstances under which the Net Present Value (NPV) and the Internal Rate of Return (IRR) methods could rank mutually exclusive projects in a conflicting way.

TOPIC 8

MEASURING BUSINESS PERFORMANCE

Introduction

Performance measurement and target-setting are important to the growth process. While many small businesses can run themselves quite comfortably without much formal measurement or target-setting, for growing businesses the control these processes offer can be indispensable.

The benefits of performance measurement

Knowing how the different areas of your business are performing is valuable information in its own right, but a good measurement system will also let you examine the triggers for any changes in performance. This puts you in a better position to manage your performance proactively.

One of the key challenges with performance management is selecting what to measure. The priority here is to focus on quantifiable factors that are clearly linked to the drivers of success in your business and your sector. These are known as key performance indicators (KPIs). See the page in this guide on deciding what to measure.

Bear in mind that quantifiable isn't the same as financial. While financial measures of performance are among the most widely used by businesses, nonfinancial measures can be just as important.

For example, if your business succeeds or fails on the quality of its customer service, then that's what you need to measure - through, for example, the number of complaints received. For more information about financial measurement, see the page in this guide on measurement of your financial performance.

The benefits of target-setting

If you've identified the key areas that drive your business performance and found a way to measure them, then a natural next step is to start setting performance targets to give everyone in your business a clear sense of what they should be aiming for.

Strategic visions can be difficult to communicate, but by breaking your top level objectives down into smaller concrete targets you'll make it easier to manage the process of delivering them. In this way, targets form a crucial link between strategy and day-to-day operations.

USERS OF FINANCIAL STATEMENTS AND THEIR INFORMATIONAL NEEDS

The following are the different users of accounting information and their specific information needs.

1. **Managers** require Financial Statements to manage the affairs of the company by assessing its financial performance and position and taking important business decisions.
2. **Shareholders** use Financial Statements to assess the risk and return of their investment in the company and take investment decisions based on their analysis.
3. **Prospective Investors** need Financial Statements to assess the viability of investing in a company. Investors may predict future dividends based on the profits disclosed in the Financial Statements. Furthermore, risks associated with the investment may be gauged from the Financial Statements. For instance, fluctuating profits indicate higher risk. Therefore, Financial Statements provide a basis for the investment decisions of potential investors.
4. **Financial Institutions (e.g. banks)** use Financial Statements to decide whether to grant a loan or credit to a business. Financial institutions assess the financial health of a business to determine the probability of a bad loan. Any decision to lend must be supported by a sufficient asset base and liquidity.
5. **Suppliers** need Financial Statements to assess the credit worthiness of a business and ascertain whether to supply goods on credit. Suppliers need to know if they will be repaid. Terms of credit are set according to the assessment of their customers' financial health.
6. **Customers** use Financial Statements to assess whether a supplier has the resources to ensure the steady supply of goods in the future. This is especially vital where a customer is dependant on a supplier for a specialized component.
7. **Employees** use Financial Statements for assessing the company's profitability and its consequence on their future remuneration and job security.
8. **Competitors** compare their performance with rival companies to learn and develop strategies to improve their competitiveness.
9. **General Public** may be interested in the effects of a company on the economy, environment and the local community.
10. **Governments** require Financial Statements to determine the correctness of tax declared in the tax returns. Government also keeps track of economic progress through analysis of Financial Statements of businesses from different sectors of the economy.

Internal and External Users

The users may be classified into **internal** and **external** users.

Internal users refer to managers who use accounting information in making decisions related to the company's operations.

External users, on the other hand, are not involved in the operations of the company but hold some financial interest. The external users may be classified further into users with *direct* financial interest – owners, investors, creditors; and users with *indirect* financial interest – government, employees, customers and the others.

NATURE OF FINANCIAL RATIO ANALYSIS

In financial analysis, ratio is used as an index of yardstick for evaluating the financial position and performance of the firm. It is a technique of analysis and interpretation of financial statements. Ratio analysis helps in making decisions as it helps establishing relationship between various ratios and interpret thereon. Ratio analysis helps analysts to make quantitative judgement about the financial position and performance of the firm. Ratio analysis involves following steps:

1. Relevant data selection from the financial statements related to the objectives of the analysis.
2. Calculation of required ratios from the data and presenting them either in pure ratio form or in percentage.
3. Comparison of derived different ratios with:
   - The ratio of the same concern over a period of years to know upward or downward trend or static position to help in estimating the future, or
   - The ratios of another firm in same line, or
   - The ratios of projected financial statements, or
   - The ratios of industry average, or
   - The predetermined standards, or
   - The ratios between the departments of the same concern assessing either the financial position or the profitability or both.
4. Interpretation of the ratio

   Ratio analysis uses financial report and data and summarizes the key relationship in order to appraise financial performance. The effectiveness will be greatly improved when trends are identified, comparative ratios are available and inter-related ratios are prepared.

Users of ratios

There are a vast number of parties interested in analyzing financial statements including shareholders, lenders, customers, employees, government, and competitors. In many occasions, they will be interested in different things therefore there is no any definite, all-encompassing list of points for analysis that would be useful to all these stakeholders. However, it is possible to construct a series of ratios that together will provide all of them with something that they find relevant and from which they can investigate further if necessary.

Ratio category	Examples of interested parties
Profitability	Shareholders, management, employees, creditors, potential investors
Liquidity	Shareholders, suppliers, creditors, competitors
Efficiency	Shareholders, potential purchasers, competitors
Shareholder	Shareholders, potential investors
Capital structure	Shareholders, lenders, creditors, potential investors

TYPES OF FINANCIAL RATIOS

Ratios can be classified into:

a) Liquidity ratios.
b) Leverage or gearing ratios.
c) Activity ratios.
d) Profitability ratios.

1. **Liquidity ratios**

These measure firm's ability to meet its short-term maturing obligations as and when they fall due. The lower the ratio, the higher the liquidity risk and vice versa. Failure to meet short term liabilities due to lack of liquidity may lead to poor credit worthiness, litigation by creditors and insolvency.

2. **Leverage or gearing ratios**

These measure extent to which a company uses its assets which have been financed by non owner supplied funds. They measure financial risk of the company. The higher the ratio, the higher the financial risk. Gearing refers to the amount of debt finance a company uses relative to its equity finance.

3. **Activity ratios**

These measure the efficiency with which a firm uses its assets to generate sales. They are also called turnover ratios as they indicate the rate at which assets are converted into sales.

4. **Profitability ratios**

They measure the management's effectiveness as shown by returns generated on sales and investment. They indicate how successful management has been in generating profits of the company.

5. **Investment or equity ratios**

These are used to evaluate the overall performance of a company. E.g. in determining company's dividend policy, determining theoretical value of company's securities and predicting effects of rights issue.

1. LIQUIDITY RATIOS

Current ratio

This is computed by dividing total current assets by total current liabilities:

$$Current\ ratio = \frac{Current\ assets}{Current\ liabilities}$$

Current ratio of more than one means that a company has more current assets than current liabilities.

Acid test or quick ratio

This is calculated by dividing total current liabilities excluding stock by current liabilities. A firm with a satisfactory current ratio may actually be in a poor liquidity position when inventories form most of the total current assets.

$$Acid\ test\ ratio\ = \frac{Current\ assets - stock}{Current\ liabilities}$$

2. GEARING OR LEVERAGE RATIOS

Debt ratio or capital gearing ratio
This measures the proportion of debt finance to capital employed by a company. A company is highly geared if the ratio is greater than 50%.

$$Debt\ ratio = \frac{Total\ long\ term\ debt}{Capital\ employed} x100$$

Debt equity ratio
This measures the proportion of non owner supplied funds to owner's contribution to the company. A company is highly geared if the debt equity ratio is greater than 100%.

$$Debt\ Equity\ ratio = \frac{long\ term\ debt}{equity\ or\ networth}$$

Times interest cover

This shows number of times earnings by a company cover its current payments. The higher the ratio, the lower the gearing position and thus the lower the financial risk.

$$\text{Times interest cover}\ = \frac{\text{Earnings before interest and tax}\ +\ \text{Depreciation}}{Interest\ charged}$$

3. PROFITABILITY RATIOS

Return on capital employed (ROCE)
This measures the efficiency with which a company uses long term funds or permanent assets to generate returns to shareholders.

$$\text{ROCE} = \frac{\text{Profit before interest and tax or operating profit}}{Total\ Capital\ employed}$$

Capital employed consists of shareholders funds (ordinary share capital, preference share capital, share premium and retained earnings) and long term debts. Capital employed can also be calculated as fixed assets plus net working capital.

Gross profit margin
This ratio shows how well cost of production has been controlled in relation to distribution and administration costs.

$$Gross\ profit\ margin = \frac{Gross\ profit}{Sales} x100$$

Net profit margin

This measures firm's ability to control its production, operating and financing costs

$$Net\ profit\ margin = \frac{Net\ profit}{Sales} x100$$

Net assets turnover

This gives a guide to productive efficiency i.e. how well assets have been used in generating sales.

$$Net\ assets\ turnover = \frac{sales}{Capital\ employed}$$

Operating profit/margin ratio

This indicates efficiency with which costs have been controlled in generating profit from sales.

$$Operating\ profit\ ratio = \frac{Profit\ before\ interest\ and\ tax\ or\ operating\ profit}{Sales} x100$$

Operating expenses ratio

This indicates a firm's ability to control production and operating costs to generate a given level of sales.

$$Operating\ expenses\ ratio = \frac{operating\ expense}{Sales} x100$$

Return on investment

These measures the efficiency with which a company uses its total funds in capital employed to generate returns to owner's funds.

$$\text{Return on investment} = \frac{\text{Net profit after tax}}{\text{Capital employed}} x100$$

Return on equity. (ROE)

This measures the efficiency with which a company other supplier's funds to generate returns to shareholders.

$$\text{Return on equity} = \frac{\text{Earnings attributable to equity shareholders}}{\text{Equity}} x100$$

Equity comprises of ordinary share capital, share premium and reserves.

4. ACTIVITY RATIOS

Debtor's turnover

This shows the number of times debtors pay within the year. It indicates how efficient the firm is in management of credit. The higher the ratio, the more efficient management is in managing its credit policy.

$$Debtor's\ turnover\ = \frac{Credit\ sales}{Average\ debtors}$$

Debtor's days or ratio

This is also called the **average collection period**. It shows the average period of credit taken by customers who buy on credit. It is compared the company's allowed credit period by suppliers to give an indication of credit administration efficiency.

$$Debtor's\ days\ or\ ratio\ = \frac{Average\ debtors}{Credit\ sales} xNumber\ of\ days\ in\ a\ year$$

$$= \frac{Number\ of\ days\ in\ a\ year}{Debtor's\ turnover}$$

Creditor's turnover

This indicates the number of times creditors are paid by a company during a year.

$$Creditor's\ turnover\ = \frac{Credit\ Purchases}{Average\ creditors}$$

Creditor's days or ratio

This is also called the *average deferral period*. It indicates the average time that suppliers allow a company to settle its dues.

$$Creditor's\ day\ ratio\ = \frac{Average\ creditors}{credit\ purchases} xnumber\ of\ days\ in\ a\ year$$

$$= \frac{Number\ of\ days\ in\ a\ year}{Creditor's\ turnover}$$

Stock or inventory turnover

This indicates the efficiency of a firm in selling its products so as to generate sales. It shows the times stock is turned over or converted into sales within a year. It shows how rapidly stock is being turned into cash through sales.

$$\text{Stock or inventory turnover}\ = \frac{\text{Cost of sales}}{Average\ stock}$$

Stock days/inventory conversion period

This indicates the number of days it takes to convert inventory into sales. The fewer the number of days, the more efficient a company is in converting stock into sales.

$$Stockdays\ or\ inventory\ conversion\ period\ = \frac{Average\ stock}{cost\ of\ saless} x\ No.of\ days\ in\ a\ year$$

$$= \frac{Number\ of\ days\ in\ a\ year}{Inventory\ turnover}$$

Cash working cycle/Working capital cycle/Operating cycle

This is the period for which working capital financing is needed. The higher the working capital cycle, the higher the investment in working capital. It is the period of time that elapses between the point at which cash is spent on production or purchase of raw materials/stock to time stock is converted into cash or cash is collected from a customer.

Average collection period	***xxx***
Add inventory conversion period	***xxx***
Less average deferral period	***(xxx)***
Working capital cycle	***xxx***

Calculation of Operating Cycle

The length of the operating cycle of a manufacturing firm is the sum of:

i) Inventory conversion period

ii) Receivables/debtors' conversion period

The inventory conversion period is the total time needed to produce and sell the product. It includes:

1. Raw material conversion period.
2. Work-in-Process conversion period.
3. Finished goods conversion period.

The debtors' conversion period is the time required to collect the outstanding amount from customers.

A firm may acquire resources on credit and defer payments. Payables may thus arise. The payables deferral period is the length of time the firm is able to defer payments on purchase of resources. The difference between the payables deferral period and the sum of the inventory conversion period and receivable conversion period is referred to as the **operating/cash conversion cycle.**

1. Inventory conversion period.

It is the sum of raw material conversion period, working in progress conversion period and finished goods conversion period.

Raw material conversion period. - It is the average time period taken to convert raw material into work in Process.

Raw material conversion period = Raw material inventory / (Raw material consumption/ 360)

Working in process conversion period. - It is the average time taken to complete the semi-finished or work in process.

$$wip\ conversion\ period = Working\ process\ inventory\ /\ (Cost\ of\ production\ /360)$$

Finished goods conversion period.- It is the time taken to sale the finished goods .

Finished goods conversion period = Finished goods inventory/ (cost of sales/ 360)

Debtors conversion period.

It is the time taken to convert the debtors to cash. It represents the aver age collection period.

$$Debtors\ conversion\ period = Debtors\ /\ (Credit\ sales/360)$$

Payables deferral period.

It is the average time taken by the firm to pay its suppliers / creditors.

$$Creditor\ deferral\ period\ =\ Creditors\ /\ (Credit\ purchase/\ 360)$$

Summary

Inventory conversion period + Debtors conversion period – Creditors deferral period =Net operating cycle

Example

The following information relates to Mutongoi Limited.

	Sh.000
Purchase of raw material	6,700
Usage of raw material	6,500
Sale of finished goods (all on credit)	25,000
Cost of sales(Finished goods)	18,000
Average creditors	1,400
Average raw materials stock	1,200
Average work in progress	1,000
Average finished goods stock	2,100
Average debtors	4,700

Assume a 365 days year.

Required:
The length of the operating cash cycle.

Solution.

Raw material conversion period = Raw material inventory / (Raw material consumption/ 360)

= (1,200/6,500) × 365

= 67days

Work in process conversion period = Working process inventory / (Cost of production /360)

= (1000/18000) × 365

=20 days

$$Finished\ goods\ conversion\ period\ =\ Finished\ goods\ inventory/\ (cost\ of\ sales/\ 360)$$

= (2100/18000) × 365

=43 days

$$Debtors\ conversion\ period\ =\ Debtors\ /\ (Credit\ sales/360)$$

= (4700/25000) × 365

=69 days

$$Creditor\ deferral\ period\ =\ Creditors\ /\ (Credit\ purchase/\ 360)$$

= (1400/6700) × 365

= 76 days

Length of operating cycle.		
Inventory conversion period.		
Raw material conversion period	67	
Work in process conversion period	20	
Finished goods conversion period	43	130
Debtors conversion period		69
Gross working capital cycle		199
Less: Creditor deferral period		(76)
Net Cash Operating cycle		**123**

Cash turnover/Operating turnover

This shows number of times a company needs to replenish its working capital in a year.

$$Cash\ turnover\ or\ Operating\ turnover = \frac{\text{Number of days in a year}}{Working\ capital\ cycle}$$

Fixed assets turnover

This indicates level of sales generated by fixed asset base of a company. It shows the efficiency with which a company utilizes its assets to generate sales.

$$\text{Fixed assets turnover } = \frac{\text{Sales}}{Total\ fixed\ assets}$$

5. INVESTMENT OR EQUITY RATIOS

Earnings Per Share (EPS)

This indicates the amount shareholders expect to generate in form of earnings for every share invested. It shows profitability of a company on a per share basis.

$$EPS = \frac{\text{Earnings attributable to equity shareholders}}{Number\ of\ ordinary\ share}$$

Dividend per Share (DPS)

This represents the amount of cash dividend that shareholders expect to receive for every share invested in the company.

$$\text{Dividend Per Share} = \frac{\text{Total ordinary dividends}}{Number\ of\ ordinary\ share}$$

Dividend pay out ratio

This indicates proportion of earnings attributable to equity shareholders that are paid out to common shareholders as dividends. It is used in analysis of dividend policy of the firm.

$$Dividend\ Pay\ out\ Ratio = \frac{\text{Total common dividends}}{Earnings\ attributed\ to\ equity\ shareholders} x100$$

$$= \frac{\text{Dividend per share}}{Earnins\ per\ share} x100$$

Dividend retention ratio

$$Dividend\ Retention\ Ratio = \frac{Retained\ earnings}{Earnings\ attributed\ to\ equity\ shareholders} x100$$

Dividend cover

$$Dividend\ cover = \frac{\text{Earnings per share (EPS)}}{Dividends\ per\ share\ (DPS)}$$

Earnings yield

This measures the potential return that shareholders expect to earn for every share invested in a company. It evaluates the shareholders returns in relation to the market value of a share.

$$Earningd\ Yield = \frac{\text{Earnings per share (EPS)}}{Market\ price\ per\ share\ (MPS)} x100$$

Dividend yield

This ratio measures how much an investor expects to receive from cash dividends for every share purchased or invested in a company.

$$Dividend\ Yield = \frac{\text{Dividend per share (DPS)}}{Market\ price\ per\ share\ (MPS)} x100$$

Price earnings ratio

This indicates how much an investor is prepared to pay for a company's share given its current earnings per share. The higher the price earnings ratio, the more confident investors are that the company will perform well in future.

$$Price\ earnings\ ratio\ = \frac{Market\ price\ per\ share\ (MPS)}{Earnins\ per\ share\ (EPS)}$$

1. Short term solvency or liquidity measure

Here the primary concern is the firm's ability to pay its bills over the short term without undue stress. Consequently this ratios focus on current assets and liabilities.

Illustration for business performance analysis

The following two financial statements will be used in calculation of ration to determine business performance. The figures are in millions.

BRIDGEVIEW COMPANY LTD
STATEMENT OF FINANCIAL POSITION AS AT 31st DECEMBER

	2010	2011
Non-current Assets		
Net plan and equipment	2731	2880
Current assets		
Cash	84	98
Accounts receivables	165	188
Inventory	393	422
Total	642	708
Total assets	**3373**	**3588**
Liabilities and owners equity		
Current liabilities		
Accounts payable	312	344
Notes payable	231	196
Total	543	540
Long term debt	531	457
Owners equity		
Common stock and paid-in surplus	500	550
Retained earnings	1799	2041
Total	2299	2591
Total liabilities and equity	**3373**	**3588**

Income statement for 2011

Sales	2311
Cost of goods sold	1344
Depreciation	276
Earnings before interest and Tax	691
Interest paid	141
Taxable income	550
Taxes (34%)	187
Net income	363
Dividends	121
Retained earnings	**242**

Assume also that 33 million shares were outstanding at the end of 2010 and 2011. Market price per share is ksh 88.

Required: calculate the key ratios the financial statements above and state the importance of the ratios calculated.

Solution:

a) Current ratio.

$$current\ ratio = \frac{current\ assets}{current\ liabilities}$$

$$\frac{708}{540} = 1.31\ times$$

The higher the current ratio, the better the company is in covering current liabilities. But at the same time it may mean an inefficient use of assets such as having excess inventory.

b) Quick (acid test ratio)

Base inventory is the least record of current assets, the acid test ratio doesn't take consideration of inventory and therefore this ratio is written as

$$\frac{current\ assets - inventory}{current\ liabilities}$$

$$\frac{708 - 422}{540} = 0.53\ times$$

In this case the company has fewer current assets covering current liabilities.

c) Cash ratio

A very short term creditor may be interested in the cash inventory.

$$\frac{cash}{current\ liabilities}$$

$$\frac{98}{540} = 0.18\ times$$

d)

e) Net working capital to total assets

$$\frac{net\ working\ capital}{total\ assets}$$

$$\frac{708 - 540}{3588} \times 100 = 4.7\%$$

Since net working capital is frequently viewed as a ratio of short term liquidity of a firm, it is measured relative to total assets. A relatively low value may indicate relatively low liquidity levels.

f) Interval measure

This assumes operations were disrupted but the company is still compelled to pay some short-term obligations. It tries to find out how much will current assets cover daily operating costs.

$$interval\ measure = \frac{current\ assets}{average\ daily\ operating\ cost}$$

Average daily operating cost from our illustration assumed to be

$$\frac{cost\ of\ goods\ sold}{365} = \frac{1344}{365} = 3.68$$

Therefore IM

$$interval\ measure = \frac{708}{3.68} = 192\ days$$

2. Long term solvency measures

This group of ratios is intended to measure the firm's long run ability to meet its obligations or more generally it's financial. These are sometimes called financial leverage ratios or leverage ratios.

i. Total debt ratio

It takes into account all debts of all maturities to all creditors.

$$Total\ debt\ ratio = \frac{Total\ assets - Total\ equity}{Total\ assets}$$

$$\frac{3588 - 2591}{3588} = 0.28\ times$$

ii. Debt-equity ratio

$$= \frac{Total\ debt}{Total\ equityt}$$

$$\frac{540 + 457}{2591} = 0.38\ times$$

iii. Equity multiplier

$$= \frac{Total\ assets}{Total\ equityt}$$

$$= \frac{3588}{2591} = 1.38\ times$$

iv. Long term debt ratio

This ratio takes into account only long term debt and not short term obligation. The formula is

$$= \frac{Long\ term\ debt}{Long\ term\ debt + equity}$$

$$= \frac{457}{457 + 2591} = 0.15\ times$$

The long term debt + equity is sometimes called firms capitalization.

v. Times interest earned

This ratio measures how well a company has its interest obligation covered.

$$Times\ interest\ earned = \frac{EBIT}{Interest\ expense}$$

$$= \frac{691}{141} = 4.9\ times$$

vi. Cash coverage

The difference between cash coverage and times interest earned is that depreciation not being an item involving movement of cash is added back to EBIT.

$$cash\ coverage\ ratio = \frac{EBIT + depreciation}{interest\ expense}$$

$$= \frac{691 + 276}{141} = 6.9\ times$$

3. Asset management/turnover ratio

Sometimes called **asset neutralization ratios**, the ratios in this category are intended to describe how efficiently or intensely a firm uses its assets to generate sales.

a) Inventory turnover and Day sales in inventory

$$Inventory\ turnover = \frac{Cost\ of\ goods\ sold}{Closing\ inventory}$$

$$= \frac{1344}{422} = 3.2\ times$$

Inventory was turned 3.2 times. It may also be imperative to use average inventory figures if they are available.

b) Day sales inventory

$$= \frac{365}{Inventory\ turnover}$$

$$= \frac{365}{32} = 114\ times$$

It tells that on average inventory sits in store for 114 days before it is sold.

c) Receivables turn over

This measures how fast receivables are collected.

$$\frac{sales}{Accounts\ receivables}$$

$$\frac{2311}{188} = 12.3\ times$$

This means that outstanding credit were collected and reloaded 12.3 times during the years.

d) Day sales and receivables/ average collection period

$$= \frac{365}{Receivables\ turnover}$$

$$= \frac{365}{12.3} = 29.67\ times$$

On average credit sales were collected in 30 days.

e) Networking capital ratio or sales

Ratios measures how much would we get out of our working capital.

$$\frac{sales}{Net\ working\ capital}$$

$$\frac{2311}{(708 - 540)} = 13.8\ times$$

f) Fixed asset turnover

$$\frac{sales}{Fixed\ assets}$$

$$\frac{2311}{2880} = 0.80\ times$$

g) Total asset turnover

$$\frac{sales}{Total\ assets}$$

$$\frac{2311}{3588} = 0.64\ times$$

For every shilling invested in assets we generate sh.0.64 sales

4. Profitability measures

These measures are intended to measure how efficiently the firm uses its assets and how efficiently the firm manages its operations. The focus in the group is on the bottom line i.e. income

a. Profit margin

$$\frac{Net\ income}{Sales}$$

$$\frac{363}{2311} = 15.7\%$$

b. Return on assets

$$\frac{Net\ income}{Total\ assets}$$

$$\frac{363}{3588} = 10.12\%$$

c. Return on equity

$$\frac{Net\ income}{Total\ equity}$$

$$\frac{363}{2591} = 14\%$$

5. Market value measures

These ratios are crucial when comparing the earning power of an organization and its distribution (of dividend) policy with other organizations.

i. Price Earnings ratio

$$P/E\ ratio = \frac{MPS}{EPS}$$

$$EPS = \frac{Net\ income}{No\ of\ shares\ outstanding} = \frac{363}{33} = 11$$

$$P/E\ ratio = \frac{88}{11}$$

$$= 8\ times$$

We can interprete this to mean that Bridgeview's shares sell for 8 times to earning.

ii. Market-Book ratio

$$= \frac{MPS}{BPS}$$

$$= \frac{88}{2591/33} = 1.2\ times$$

Book value in this case is total equity, not just common stock divided by no. of shares outstanding. The better if the ratio is more than one meaning share is doing well in the market.

iii. Dividend payout ratio

This measures amount of cash paid out to shareholders

$$= \frac{Cash\ dividend}{Net\ income}$$

$$= \frac{121}{363} = 0.33$$

iv. Retention/plough back ratio

$$= 1 - dividend\ payout\ ratio$$

Because everything paid is retained.

v. Capital intensity ratio

$$= \frac{firms\ total\ assets}{sales}$$

It's the reciprocal of assets turnover ratio .

Du-Pont identity

This was developed by du-Pont Company of USA. Du-Pont identity asserts that R.O.E is affected by 3 things

- Operating efficiency (as measured by profit margin)
- Assets use efficiency (as measured by total assets turn over)
- Financial leverage (as measured by equity multiplier)

$$ROE = \frac{Net\ income}{Sales} \times \frac{Sales}{Total\ assets} \times \frac{Total\ assets}{total\ equity} = \frac{Net\ income}{Total\ equity}$$

Decomposing Du-Point multiplier further (5way Du-Point multiplier)

The 5 way Du-Point decomposition is the one found in financial data bases such as Bloomberg. According to this formula

$$ROE = \frac{Net\ income}{EBT} \times \frac{EBT}{EBIT} \times \frac{EBIT}{Revenue} \times \frac{Revenue}{Total\ assets} \times \frac{Total\ assets}{Equity} = \frac{Net\ income}{Equity}$$

a.

$$\frac{Net\ income}{EBT} = tax\ burden$$

It measures how much of a company's pre-tax profit it gets to keep.

b.

$$\frac{EBT}{EBIT} = interest\ burden$$

It captures the effects of interest on ROE

c.

$$\frac{EBIT}{Revenue} = operating\ margin$$

Measures effect of operating profitability on ROE

d.

$$\frac{Revenue}{Total\ assets} = asset\ turn\ over\ ratio$$

Indication of overall efficiency of the company

e.

$$\frac{Total\ assets}{Equity} = financial\ leverage\ ratio$$

It's the total amount of a company's assets relative to its equity capital.

Simply put the decomposition of Du-Point identity into 5 components expresses a company's ROE as a function of its tax rate, interest burden, operating profitability efficiency, efficiency and leverage. An analyst uses this framework to determine what factors are driving the companies ROE.

LIMITATIONS OF RATIOS ANALYSIS

1. **Subjectivity**
   Ratios are subjective to accounting information that depends on the accounting policies adopted by a particular organization hence making it impossible for cross sectional analysis if a company uses different accounting policies. It is difficult to categorize firms due to diversifications i.e. some companies have more than one line of business and thus will fall into several industries thus difficult in ratio comparison.

2. **Irrelevance**
   Ratios are historical figures which may irrelevant in making future decisions.

3. **Qualitative aspects are ignored**
   Qualitative aspects such competent management, experience and motivation of employees are not captured in computation of ratios.

4. **Ambiguity**
   Different people will use different stances to describe financial information e.g. including preference share capital in equity or return on capital being referred to as gross capital employed.

5. **Usefulness**
   Ratios are computed at a specific point in time. By the time they are analyzed for decision making, circumstances may have changed thus ratios are only useful in the short term

6. **Monopoly**
   For a company without competitor, it may not be .possible to analyze its performance with other companies in the same industry.

COMMON SIZE STATEMENTS

Common size financial statement analysis is analyzing the balance sheet and income statement using percentages. All income statement line items are stated as a percentage of sales. All balance sheet line items are stated as a percentage of total assets. For example, on the income statement, every line item is divided by sales and on the statement of financial position every line item is divided by total assets.

This type of analysis enables the financial manager to view the income statement and balance sheet in a percentage format which is easy to interpret.
As with financial ratio analysis, you can compare the common size income statement from one year to other years of data to see how your firm is doing. It is generally easier to make that comparison using percentages rather than absolute numbers.

Common size ratios offer simple comparisons. We have common size ratios for both the balance sheet (where you compare total assets) and the income statement (where you compare total sales):

- **To get a common size ratio from a balance sheet**, the total assets figure is assigned the percentage of 100 percent. Every other item on the balance sheet is represented as a percentage of total assets. For example, if SAM has total assets of shs.10, 000 and debt of shs.3, 000, then debt equals 30 percent (debt divided by total assets, or shs.3, 000 ÷ shs.10, 000, which equals 30 percent).

- **To get a common size ratio from an income statement (or profit and loss statement)**, you compare total sales. For example, if SAM has shs.50,000 in total sales and a net profit of shs.8,000, then you know that the profit equals 16 percent of total sales.

Common Size Statements

In order to avoid the limitations of Comparative Statement, this type of analysis is designed. Under this method, financial statements are analyzed to measure the relationship of various figures with some common base. Accordingly, while preparing the Common Size Profit and Loss Account, total sales are taken as common base and other items are expressed as a percentage of sales. Like this, in order to prepare the Common Size Balance Sheet, the total assets or total liabilities are taken as common base and all other items are expressed as a percentage of total assets and liabilities.

Here is an example of a common size analysis of an income statement and balance sheet

Illustration

From the following particulars of AVS Ltd., for the year 2002 and 2003, you are required to prepare a common size Income Statement:

Statement of Profit and Loss Account

Particulars	**2002 Sh.**	**2003 Sh.**
Net Sales	4,000	5,000
Less : Cost of Goods Sold	3,750	3,750
Gross Profit	1,000	1,250
Less : Operating Expenses :		
Office & Administrative Expenses	200	250
Selling & Distribution Expenses	225	300
Total Operating Expenses	425	550
Net Profit	575	700

Solution

Common Size Income Statement

Particulars	**2002**	**Percentage**	**2003**	**Percentage**
	Sh.	**(%)**	**Sh.**	**(%)**
Net sales	4,000	100	5,000	100
Less : Cost of Goods Sold	3,000	75	3,750	75
Gross Profit	1,000	25	1,250	25
Less: Operating Expenses:				
Office and Administrative Expenses	100	2.5	100	2
Selling and Distribution Expenses	150	3.75	200	4
Total Operating Expenses	250	6.25	300	6

Net Profit	750	18.75	950	19

Illustration

From the following statement of financial position, prepare a Common Size statement of financial position:

Statement of Financial Position

Liabilities	**2002**	**2003**	**Assets**	**2002**	**2003**
Share Capital	2,64,000	2,80,000	Cash in Hand	10,000	10,750
Current Liabilities	65,000	70,000	Cash at Bank	3,500	5,000
Long-term Debt	1,00,000	87,500	Bills Receivable	22,500	22,750
Bills Payable	12,500	-	Sundry Debtors	90,000	85,000
Sundry Creditors	10,000	16,000	Inventories	70,000	83,000
Bank Overdraft	50,000	71,500	Fixed Assets	300,000	307,500
Prepaid Expenses	5,500	10,500		-	-
	501,500	525,000		501,500	525,000

Solution

Common statement of financial position.

Particulars	**2002**	**Percentage** (%)	**2003**	**Percentage** (%)
Assets :				
Current Assets :				
Cash in Hand	10,000	1.99	10,750	2.05
Cash at Bank	3,500	0.69	5,000	0.95
Sundry Debtors	90,000	17.95	85,000	16.29
Inventories	70,000	13.96	83,000	15.81
Bills Receivable	22,500	4.48	22,750	4.3
Prepaid Expenses	5,500	1.09	10,500	2.00
Total Current Assets	201,500	40.18	17,500	41.43
Fixed Assets	300,000	59.82	307,500	58.57
Total Assets	501,500	100 %	525,000	100%
Liabilities & Capital :	65,000	12.96	70,000	13.33
Current Liabilities	12,500	2.50	-	-
Bills Payable	10,000	1.99	16,000	3.05
Sundry Creditors	50,000	9.97	71,500	13.62
Bank Overdraft	137,500	27.42	157,500	30
Total Current Liabilities	100,000	19.94	87,500	16.66

Long. Term Liabilities	264,000	52.64	280,000	53.34
Long-Term Debts	501,500	100 %	525,000	100%
Capital and Reserve : Share Capital				
Total Liabilities				

FINANCIAL PLANNING AND FORECASTING

Dimensions of financial planning

1. **Planning horizon-**it is the long range time period financial planning process. Focuses on usually the next 2-5 years.
2. **Aggregation-** it is the process by which smaller investment proposals of the firms operational units are added up and treated as one major project.

Benefits of planning

1. ***Interactions*** - The financial plan makes explicit linkages between investment proposals for the different operating activities of the firm and the financing sources available to the firm.
2. ***Options*** - The financial plan provides the opportunity for the firm to develop, analyze and compare many different scenarios and does viability of options.
3. ***Avoiding surprises*** – Financial plan identifies what may happen to the firm if different events take place, financial plan does employ anticipatory approach as a tool for risk management.
4. ***Feasibility and consistency***- To generate a coherent plan, goals and objectives will have to be modified and priorities will have to be established.

Financial Forecasting

Financial forecasting refers to determination of financial requirements of the firm in advance. This requires financial planning using budgets.

The financial planning and forecasting will also determined the activities the firm should undertake in order to achieve its financial targets.

Financial forecasting is important in the following ways:

1. Facilitate financial planning i.e. determination of cash surplus or deficit that are likely to occur in future.
2. Facilitate control of expenditure. This will minimize wastage of financial resources in order to achieve financial targets.
3. It avoids surprise to the manager's e.g any cash deficit is known well in advance thus the firm can plan for sources of short term funds such as bank drafts or short term loans.
4. Motivation to the employees – Financial forecasting using budgets and targets will enhance unity of purpose and objectives among employees who are determined to achieve the set target.

Methods/Techniques of Financial Forecasting

1. Use of Cash Budgets

A cash budget is a financial statement indicating:

a) Sources of revenue and capital cash inflows
b) How the inflows are expended to meets revenue and capital expenditure of the firm.
c) Any anticipated cash deficit/surplus at any point during forecasting period.

2. Regression Analysis

This is a statistical method which involves identification of dependant and independent variable to form a regression equation *y = a + bx) on which forecasting will be based.

3. Percentage of Sales Method

This method involves expressing various balance sheet items that are directly related to sales as a percentage of sales. It involves the following steps:

i) Identify various balance sheet items that are directly with sales this items include:
   a) Net fixed asset – If the current production capacity of the firm is full an increase in sales will require acquisition of new assets e.g. machinery to increase production.
   b) Current Asset – An increase in sales due to increased production will lead to increase in stock of raw materials, finished goods and work in progress. Increased credit sales will increase debtors while more cash will be required to buy more raw materials in cash.
   c) Current liabilities – Increased sales will lead to purchase of more raw materials
   d) Retained earnings – This will increase with sales if and only if, the firm is operating profitability and all net profits are not paid out as dividend.

Note

The increase in sales does not require an increase in ordinary share capital, preference share capital and debentures since long term capital is used to finance long term project.

ii) Express the various balance sheet items varying with sales as percentage of sales e.g. assume for year 2002 stock and net fixed assets amount to Sh.12M and 18M respectively sales amount to Sh.40M. Therefore stock as percentage of sales"

$$\text{Stock} = \frac{12M}{40M} \times 100 = 30\%$$

$$\text{Fixed asset} = \frac{18M}{40M} \times 100 = 45\%$$

iii) Determine the increase in total asset as a result of increase in sales e.g suppose sales increases from Sh.40 M to Sh.60 M during year 2003. The additional stock and net fixed asset required would be determined as follows:

Increase in stock = % of sales x increase in sales

= 30% (60 – 40) = Sh.6M

Increase in fixed asset = % of sales x increase in sales

= 45%(60 – 40) = Sh.9 M

iv) Determine the total increase in assets which will be financed by:

a) Spontaneous source of finance i.e increase in current liabilities
Where Increase = % of sales x increase in sales

b) Retained earnings for the forecasting period
Retained earnings = Net profit – Dividend paid

$$\text{Net profit margin} = \frac{\text{Net profit}}{\text{Sales}}$$

Therefore: Net profit = Net profit margin (%) x sales

Note

Generally Net profit margin is called after tax return on sales.

- Out of the total assets that are required as a result of increase in sales, the financing will come from the two sources identified. Any amount that cannot be met from the two sources will be borrowed externally on short term basis which will be a current liability.

Assumptions underlying % of sales method

The fundamental assumption underlying the use of % of sales method is that, there is no inflation in the economy i.e the increase in sales is caused by increase in production and not increase in selling price.

Other assumptions include:

1. The firm is operating at full or 100% capacity. Therefore the increase in production will require acquisition of new fixed assets.
2. The firm will not issue new ordinary shares or debenture or preference shares thus this capital will remain constant during the forecasting period.
3. The relationship between balance sheet item and sales i.e balance sheet items as % of sales will be maintained during forecasting period.
4. The after tax, profit on sale or net profit margin will be achieved and shall remain constant during the forecasting period.

Illustration

The following is the balance sheet of XYZ Ltd as at 31st December 2002:

	Sh.'000'
Net fixed asset	300
Current assets	100
	400

Financed by:	100
Ordinary share capital	70
Retained earnings	150
10% debentures	50
Trade creditors	30
Accrued expenses	400

Additional Information

1. The sales for year 2002 amounted to Sh.500,000. The sales will increase by 15% during year 2003 and 10% during year 2004.
2. The after tax return on sales is 12% which shall be maintained in future.
3. The company's dividend payout ratio is 80%. This will be maintained during forecasting period.
4. Any additional financing from external sources will be affected through the issue of commercial paper by company.

Required

a)Determine the amount of external finance for 2 years upto 31st December 2004.

b)Prepare a proforma balance as at 31 December 2004

Solution

Identify various items in balance sheet directly with sales:

- Fixed Asset
- Current Asset
- Trade creditors
- Accrued expenses

Net fixed assets = $\frac{300M}{500M} \times 100 = 60\%$

Current Assets = $\frac{100M}{500M} \times 100 = 20\%$

Trade creditors = $\frac{50}{500} \times 100 = 10\%$

Accrued expenses = $\frac{30}{500} \times 100 = 6\%$

c) Compute the increase in sales over the 2 years.

Year 2003 sales = $500 \times \frac{115}{100} = 575M$

Year 2004 sales = $575 \times \frac{115}{100} = 632.5M$

Increase in sales in 2003-2004 = 632.5 – 500 = 132.5M

d) Compute the amount of external requirement of the firm over the 2 years of forecasting period.

i)	Increase in F. Assets	=	% of sales x increase in sales		
		=	60% × 132.5	=	79.5M
ii)	Increase in C. Assets	=	% of sales × increase in sales		
		=	20% of 132.5	=	26.5M
	Total additional investment/asset required				106M

Interpretation

For the company to earn increase in sales of 132.5M it will have to acquire additional assets costing 106M.

				Sh.'000'
Additional investment/asset required				106,000
Less: Spontaneous source of finance				
Increase in creditors	= % of sales x increase in sales			
	= 132,500 x 10%		(13,250)	
Increase in accrued expenses	= % of sales x increase in sales			
	= 132,500 x 6%			(7,950)
Less: Retained earnings during 2 years of operation (initial sources)				
Net profit for 2003	= Net profit margin x sales of 2003			
	= 12% of 575,000	= 69,000		
Less: Dividend payable 80% of 69,000		=	55,200	(13,800)
Net profit for 2004	= Net profit margin x sales of 2004			
	= 12% of 632,500	= 75,900		
Less: dividend payable 80% of 75,900		=	60,720	(15,180)
External financial needs (commercial paper)			55,820	

Proforma Balance Sheet

This refers to the projected balance sheet at the end of forecasting period. The items in the proforma balance which vary with sales would be determined in any of the following two ways:

i) % of sales x sales at last year of forecasting (2004); or

ii) Balance sheet item before forecasting plus increase in balance sheet item as a result of increase in sales.

Proforma balance sheet as at 31st December 2004

	Sh.
Net fixed assets 60% x 632.5 or 300 + 79.5	379.50
Current Assets 20% x 632.5 or 100 + 26.5	126.50
	506.00
Ordinary shares (will remain constant)	100.00
Retained earnings 70 + 13.8 + 15.18	98.98
10% debenture (remain constant)	150.00
Trade creditor 10% x 632.5 or 50 + 13.25	63.25
Accrued expenses 6% x 632.5 or 30 + 7.95	37.95
External borrowing – commercial	55.82
	506.00

EXTERNAL FINANCING AND GROWTH

External financing needs and growth are obviously related. All other things are the same. The higher the growth rate in sales/assets, the greater will be the need for external financing.

Financial policy and growth

- Internal growth rate

This is the maximum growth rate that can be achieved with no extra financing of any kind.

$$internal\ growth\ rate = \frac{ROA \times b}{1 - ROA \times b}$$

$$ROA = \frac{Net\ profit}{Total\ assets}$$

Where, ROA=return on assets and
b= retention ratio.

Example:
Assume net income is sh.66M. Total assets are 500M and of the 66M, 44M was retained. Calculate internal growth rate or the maximum growth rate that can be attained with no external financing?

$$ROA = \frac{66}{500} = 0.132$$

$$b = \frac{44}{66} = 0.69$$

$$internal\ growth\ rate = \frac{0.132 \times 0.67}{1 - 0.132 \times 0.67} = 0.0097$$

$$= 9.7\%$$

Therefore the company can expand at a maximum rate of 9.7% per year without external financing

.

- Sustainable growth rate

In the previous example, if the company wishes to grow more rapidly than 9.7%, the external finance must be arranged. The sustainable growth rate is the maximum growth rate a firm can achieve without external equity financing while maintaining constant debt: equity ratio.
It is the maximum rate of growth a firm can attain without increasing its financial leverage.
No issue of equity.

$$SGR = \frac{ROE \times b}{1 - ROE \times b}$$

Example:
If net income is 66M and total equity is 250M and the plough back ratio is 0.67.

$$ROE = \frac{66}{250} = 0.264$$

$$SGR = \frac{0.264 \times 0.67}{1 - 0.264 \times 0.67}$$

$$= 21.36\%$$

The company can expand at a maximum rate of 21.36% per year without external equity financing. The company wills most likely increase its equity through retained earnings. However, if the company doesn't have sufficient R/E it will have to borrow to finance growth but still not use external equity. In the above example ROE, plough back ratio i.e. 0.67 is the same as in the earlier illustration.

Determinants of growth

1. Profit margin
   -An increase in profit margin will increase the firm's ability
2. Dividend policy
   -A decrease in the percentage of net income paid out as a dividend will increase the retention ratio. This increases the internally generated equity and therefore increases sustainability.
3. Financial policy
   -An increase in D: E ratio increases the firm's financial leverage. Since this makes additional debt financing available, it increases the sustainable growth rate.
4. Total asset turnover
   -An increase in the firms total asset turnover increases the sales generated for each dollar in asset. This increases the firms need for new assets as sales growth and thereby increases SGR

Financial distress

Financial distress indicates a condition when promises to creditors of a company are broken or honored with difficulty. Sometimes it leads to bankruptcy.

Cost of financial distress

- Bankruptcy cost

Includes audit fees, legal fees and management fees

- Reduction in management efficiency

Financial distress in companies leads to problems that can reduce efficiency of management. This is due to the shift of focus from long term to short term gains among managers, principally due to diminished commitment. Also good staff leaves the firm for better opportunities.

- Conflict of interest between shareholders and creditors

As the firms liquidation values slips below its debt, its shareholders interest that the company invests in risky projects which increases the probability of the firm's value to go below debt. Risky project are not in the interest of creditors, since they increase the probability of the firms value to decrease further, leaving them with even less. Since these projects do not necessarily have a positive NPV, costs may rise from lost profits. Management may also choose to distribute to save money from the creditors.

- High cost of capital

With financial distress of a company short term loans from creditors and banks will be given to the firm at higher interest rates because of poor credit standing.

Options for relieving financial distress

- Debt restructuring

This is a process that allows a public company or sovereign entity facing cash flow problems and financial distress to reduce and negotiate its deluges in order to improve or restore liquidity rehabilitate so that it can continue its operation.

- Bankruptcy

If promises to creditors cannot be kept,, bankruptcy becomes an option for both companies and individuals

Predicting business failure

Business failure can be predicted using linear discriminant model. Linear discriminant models divide firms into high or low bankruptcy classes based on their financial characteristics. The widely used model is the Altman's Z-score.

Altman's Z-score

It is a quantitative method of determining a company's financial health and likehood of bankruptcy.

The Z-score model is the 1960's brain child of professor Edward Altman of NYU. It uses 8 variables that are EBIT, total assets, and net sales, market value of equity, total liabilities, current assets, current liabilities and retained earnings.

The formula for the Z-score:

$$Z - score = 1.2x_1 + 1.4x_2 + 3.3x_3 + 0.6x_4 + 1.0x_5$$

$$where,\ \ x_1 = \frac{working\ capital}{Total\ assets}$$

$$x_2 = \frac{Retained\ earnings}{Total\ assets}$$

$$x_3 = \frac{EBIT}{Total\ assets}$$

$$x_4 = \frac{market\ value\ of\ equity}{Book\ value\ \ of\ debt}$$

$$x_5 = \frac{sales}{Total\ assets}$$

Interpretation of Altman's Z-score

Z-score above 3 means a company is considered safe based on financial figures only.

Z-score between 2.7 and 2.99 means this is the zone where one should exercise caution. It could mean the performance of the company is at risk.

Z-score between 1.8 and 2.7 means there is a good chance of a company going bankruptcy within 2 years of operations from the date of financial statement/figures.

Z-score below 1.8 means the probability of financial embarrassment is very high and chances of the firm surviving are minimal.

Question:

Using the financial statement of 2011 of Bridgeview Company, Calculate the Z-score for the company and interprete the results.

Solution

$$Z - score = 1.2x_1 + 1.4x_2 + 3.3x_3 + 0.6x_4 + 1.0x_5$$

$$x_1 = \frac{working\ capital}{Total\ assets} = \frac{CA - CL}{Total\ assets}$$

$$= \frac{708 - 540}{3588} = 0.047$$

$$x_2 = \frac{Retained\ earnings}{Total\ assets}$$

$$= \frac{2041}{3588} = 0.569$$

$$x_3 = \frac{EBIT}{Total\ assets}$$

$$= \frac{691}{3588} = 0.193$$

$$x_4 = \frac{market\ value\ of\ equity}{Book\ value\ \ of\ debt}$$

$$Book\ value\ of\ Debt = LDT + CL$$

$$= 457 + 540 = 997$$

$$market\ value\ of\ equity = 33 \times 88 = 2904$$

$$= \frac{2904}{997} = 2.91$$

$$x_5 = \frac{sales}{Total\ assets}$$

$$= \frac{2311}{3588} = 0.64$$

$$Z - score = 1.2x_1 + 1.4x_2 + 3.3x_3 + 0.6x_4 + 1.0x_5$$
$$Z - score = 1.2(0.047) + 1.4(0.569) + 3.3(0.193) + 0.6x_4 + 1.0(0.64)$$

$$= 3.5799$$

QUESTION

(a) Outline two types of information which could be obtained from the following sources:

i. Proxy statement (2 marks)
ii. Corporate press release (2 marks)
iii. Annual reports to regulators (2 marks)

(b) The top management of Zedrock Limited has provided you with the following financial statements relating to its two divisions, alpha and beta, for the year ended 30 June 2012

Income statement for the year ended 30 June 2012

	Alpha Division Sh."millions"		**Beta Division Sh."millions"**	
Revenue		4,000		6,000
Cost of sales		(3,000)		(4,800)
Gross profit		1,000		1,200
Expenses:				
Distribution costs	200		150	
Administrative expenses	290		250	
Interest paid	10	(500)	400	(800)
Profit before tax		500		400
Income tax expense		(120)		(90)
Profit after tax		380		310
Dividend paid		(150)		(100)
Retained profit for the year		230		210
Retained profit brought forward		220		2,480
Retained profit carried forward		**450**		**2,6900**

Statement of financial position as at 30 June 2012:

	Alpha Division Sh."millions"		**Beta Division Sh."millions"**	
Non-current assets at cost:				
Land and buildings		1,200		5,000
Furniture and motor vehicles		600		1,000
		1,800		6,000
Current assets:				
Inventory	400		800	
Trade receivables	850		750	
Financial assets	100		230	
Cash at bank	-	1,350	100	1,880
Total assets		**3,150**		**7,880**
Equity and liabilities:				
Ordinary share capital(sh.1 par value)		1,000		1,600
Retained profits		450		2,690

		1,450		4,290
Non-current liabilities:				
Bank loan		500		3,000
Current liabilities:				
Accounts payable	1,080		590	
Bank overdraft	120	1,200	-	590
		3,150		**7,880**

Additional information:

1. The two divisions sell goods on both cash and credit terms. On average, the credit sales account for 80% of the total sales while purchases account for 90%
2. The cash flow from operating activities for the two divisions are sh.750 millions and sh.800 million respectively.
3. The division deal with electronic goods.

Required:

(i) Common size income statement for the year ended 30th June 2012 (6 marks)
(ii) Common size statement of financial position as at 30th June 2012 (6 marks)
(iii)Comment on the performance of the two divisions and state which division and state is better (2 marks)

(Total: 20 marks)

Suggested solution:

a) Proxy statements

A proxy is a means whereby a shareholder authorizes another person to act for him or her at a meeting of shareholders. A proxy statement contains information necessary for shareholders in voting on matters for which the proxy is solicited.

Proxy statements contain pertinent information regarding a company including:-

i. The identity of shareholders owning 5% or more of the outstanding shares.
ii. Biography information on the BOD
iii. compensation arrangement with officers and directors
iv. Employees benefit plans and certain transactions with officers and directors related parties.
v. Voting procedures and information
vi. Background information about the company's nominated directors
vii. Executive compensation

Corporate press release

These are news that follows within the publishing requirements of a company. They includes:-

i. Recent financial statements released and key performances
ii. Any new important information like change of management, new products or strategies

Annual report to Regulators

These should include:-

i. Mergers, consolidation, acquisition and similar matters
ii. Financial statements
iii. Audited accounts and reports

b)

Zedrock Limited
Common size Income statement for the year ended 30 June 2112

	Alpha Division		Beta Division	
	%	%	%	%
sales		100		100
Cost of sales		(75)		(80)
Gross profit		25		20
Expenses:				
Distribution costs	5		2.5	
Administrative expenses	7.25		4.16	
Finance cost	0.25	(12.5)	6.67	(13.33)
Gross Profit	12.5		6.67	
Income tax expense		(3)	(1.50)	
Profit after tax		9.5	5.17	
Dividend paid		(3.75)		(1.67)
Retained profit for the year	**5.75**		**3.50**	

Zedrock Limited
Statement of financial position as at 30 June 2012:

	Alpha Division		Beta Division	
	%	%	%	%
Non-current assets at cost:				
Land and buildings		38		63.5
Furniture and motor vehicles		19		12.6
		57		76.1
Current assets:				
Inventory	12.8		10.2	
Trade receivables	27.0		9.5	
Financial assets	3.2		2.9	
Cash at bank	-	43	1.3	23.9
Total assets		**100**		**100**
Equity and liabilities:				
Ordinary share capital(sh.1 par value)		31.7		20.3
Retained profits		14.3		34.1
		46		54.4
Non-current liabilities:				
Bank loan		15.9		38.1
Current liabilities:				
Accounts payable	34.3		7.5	
Bank overdraft	3.8	38.1	-	7.5
		100		**100**

Based on the income statement, Alpha division appears to be better than Beta division in terms of gross profit, net profit margin and profits retained.
Based on the statement of financial position, Beta division seems to be better because it has more capital than alpha and its non-current asset base is better.

TOPIC 9

WORKING CAPITAL MANAGEMENT

INTRODUCTION TO WORKING CAPITAL MANAGEMENT

Introduction

Management of Working Capital is also an important part of financial manager. The main objective of the Working Capital Management is managing the Current Asset and Current Liabilities effectively and maintaining adequate amount of both Current Asset and Current Liabilities. Simply it is called Administration of Current Asset and Current Liabilities of the business concern.

Management of key components of working capital like cash, inventories and receivables assumes paramount importance due to the fact the major portion of working capital gets blocked in these assets.

Meaning

Working capital management is an act of planning, organizing and controlling the components of working capital like cash, bank balance inventory, receivables, payables, overdraft and short-term loans.

Definition

According to **Smith K.V,** "Working capital management is concerned with the problems that arise in attempting to manage the current asset, current liabilities and the inter-relationship that exist between them".

According to **Weston and Brigham,** "Working capital generally stands for excess of current assets over current liabilities. Working capital management therefore refers to all aspects of the administration of both current assets and current liabilities".

IMPORTANCE OF WORKING CAPITAL MANAGEMENT

Working capital is the life blood and nerve center of business. Working capital is very essential to maintain smooth running of a business. No business can run successfully without an adequate amount of working capital. The main advantages or importance of working capital are as follows:

1. **Strengthen The Solvency**
   Working capital helps to operate the business smoothly without any financial problem

for making the payment of short-term liabilities. Purchase of raw materials and payment of salary, wages and overhead can be made without any delay. Adequate working capital helps in maintaining solvency of the business by providing uninterrupted flow of production.

2. **Enhance Goodwill**
   Sufficient working capital enables a business concern to make prompt payments and hence helps in creating and maintaining goodwill. Goodwill is enhanced because all current liabilities and operating expenses are paid on time.
   - Financial Forecast
   - Financial Forecasting
   - Advantages of solar panels
   - Bond

3. **Easy Obtaining Loan**
   A firm having adequate working capital, high solvency and good credit rating can arrange loans from banks and financial institutions in easy and favorable terms.

4. **Regular Supply of Raw Material**
   Quick payment of credit purchase of raw materials ensures the regular supply of raw materials from suppliers. Suppliers are satisfied by the payment on time. It ensures regular supply of raw materials and continuous production.

5. **Smooth Business Operation**
   Working capital is really a life blood of any business organization which maintains the firm in well condition. Any day to day financial requirement can be met without any shortage of fund. All expenses and current liabilities are paid on time.

6. **Ability to Face Crisis**
   Adequate working capital enables a firm to face business crisis in emergencies such as depression.

FACTORS AFFECTING WORKING CAPITAL NEEDS

Requirements Of working capital depend upon various factors such as nature of business, size of business, the flow of business activities. However, small organization relatively needs lesser working capital than the big business organization. Following are the factors which affect the working capital of a firm:

1. Size of Business

Working capital requirement of a firm is directly influenced by the size of its business operation. Big business organizations require more working capital than the small business organization. Therefore, the size of organization is one of the major determinants of working capital.

2. Nature of Business

Working capital requirement depends upon the nature of business carried by the firm. Normally, manufacturing industries and trading organizations need more working capital than in the service business organizations. A service sector does not require any amount of stock of goods. In service enterprises, there are less credit transactions. But in the manufacturing or trading firm, credit sales and advance related transactions are in large amount. So, they need more working capital.

3. Storage Time or Processing Period

Time needed for keeping the stock in store is called storage period. The amount of working capital is influenced by the storage period. If storage period is high, a firm should keep more quantity of goods in store and hence requires more working capital. Similarly, if the processing time is more, then more stock of goods must be held in store as work-in-progress.

4. Credit Period

Credit period allowed to customers is also one of the major factors which influence the requirement of working capital. Longer credit period requires more investment in debtors and hence more working capital is needed. But, the firm which allows less credit period to customers' needs less working capital.

5. Seasonal Requirement

In certain business, raw material is not available throughout the year. Such business organizations have to buy raw material in bulk during the season to ensure an uninterrupted flow and process them during the entire year. Thus, a huge amount is blocked in the form of raw material inventories which gives rise to more working capital requirements.

6. Potential Growth or Expansion Of Business

If the business is to be extended in future, more working capital is required. More amount of working capital is required to meet the expansion need of business.

- Classifications
- Small business loan
- Small Business
- Small business owner

7. Changes in Price Level

Change in price level also affects the working capital requirements. Generally, the rise in price will require the firm to maintain large amount of working capital as more funds will be required to maintain the sale level of current assets.

8. Dividend Policy

The dividend policy of the firm is an important determinant of working capital. The need for working capital can be met with the retained earning. If a firm retains more profit and distributes lower amount of dividend, it needs less working capital.

9. Access to Money Market

If a firm has good access to capital market, it can raise loan from bank and financial institutions. It results in minimization of need of working capital.

10. Working Capital Cycle

when the working capital cycle of a firm is long, it will require larger amount of working capital. But, if working capital cycle is short, it will need less working capital.

11. Operating Efficiency

The operating efficiency of a firm also affects the firm's need of working capital. The operating efficiency of the firm results in optimum utilization of assets. The optimum utilization of assets in turn results in more fund release for working capital.

THE WORKING CAPITAL CYCLE

The volume of working capital depends on the amount blocked in current assets. These amounts are released over a time period and gradually changes shape from one item to another. This changing process rotates in a cyclical order.

The length of the cycle or the time taken to rotate the cycle once is known as the **working capital cycle** or the **operating cycle**.

The operating cycle of a company can be said to cover distinct stages, each stage requiring a level of supporting investment. The time gap between the firm's paying cash for materials, entering into work in process, making finished goods, selling finished goods to the debtors and the inflow of cash from debtors is known as working capital or operating cycle. According to the nature of business the duration of working capital cycle varies. It is the responsibility of the finance manager to shorten the length of working capital cycle.

For a manufacturing firm, the cycle starts with the investment made in raw materials and other components. The inventories can be bought on trade credit as a result creditors will increase. Further goods are manufactured that are sold on credit as a result debtors will increase. Finally debtors pay in the form of cash or cheque and consequently creditors are paid out. How cash makes its journey through different stages has been depicted in Figure 7.3.

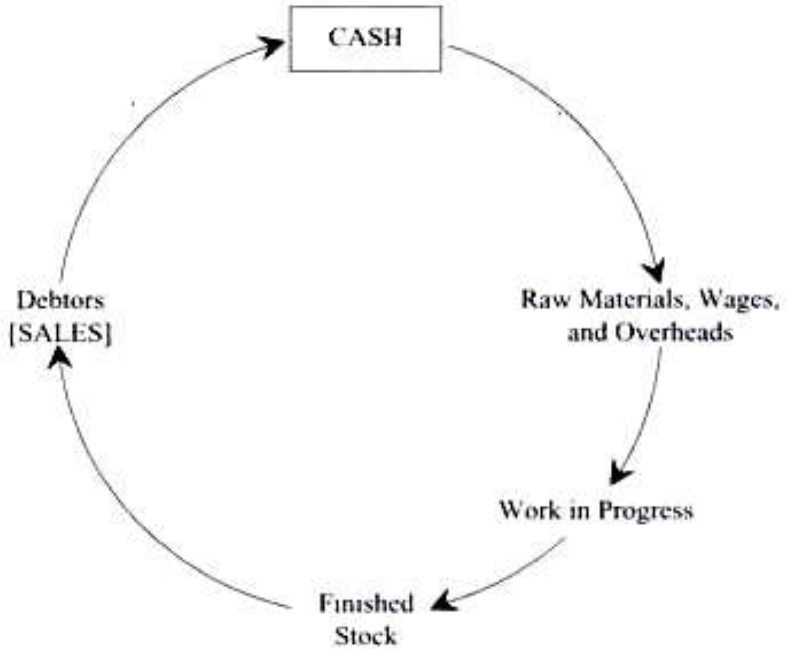


FIGURE 7.3 Working Capital Cycle

Reasons for a Longer Operating Cycle:

Working capital requirements depend on the operating cycle. It starts with payment for acquisition of raw materials and ends with the collection of receivables from debtors. The duration of the working capital cycle varies according to the nature of business.

The reasons for longer operating cycle are given below:

1. Firstly the working capital cycle may be longer if the availability of raw materials is not easy. As a result the organization will have to hold large amount of raw materials in stores.
2. Secondly the processing period may be longer. The nature of the product is such that the product passes through various departments to get finished.
3. Thirdly the product may be slow moving. In that case the time taken to deplete the finished goods stock will be longer.
4. Finally the credit policy and the inefficiency of the organization in debt collection also increase the length of operating cycle.

Measuring the Operating Cycle:

Formula

Operating Cycle = Days' Sales of Inventory + Days Sales Outstanding

Days sales of inventory equals the average number of days in which a company sells its inventory. Days sales outstanding on the other hand, is the period in which receivables are realized in cash.

An alternate expanded formula for operating income is as follows:

$$\text{Operating Cycle} = \frac{365}{\text{Purchases}} \times \text{Average Inventories} + \frac{365}{\text{Credit Sales}} \times \text{Average Accounts Receivable}$$

Example

Walmart Stores Inc. (NYSE: WMT) is all about inventories. Find its operating cycle assuming all sales are (a) cash sales and (b) credit sales. You can use cost of revenue as approximate figure for purchases (i.e. no need to adjust it for changes in inventories).

	USD in million
Revenue	469,162
Cost of revenue	352,488
Inventories as at 31 January 2013	43,803
Inventories as at 31 January 2012	40,714
Average inventories	42,259
Accounts receivable as at 31 January 2013	6,768
Accounts receivable as at 31 January 2012	5,937
Average accounts receivable	6,353

Solution

Part (a)
Days taken in converting inventories to accounts receivable = 365/352,488*42,259 = 43.75
Since there are no credit sales, time taken in recovering cash from accounts receivable is zero. Customers pay cash right away.
Operating cycle is 43.75 days and this represents the time taken in selling inventories.

Part (a)
There is no change in days taken in converting inventories to accounts receivable.
Days taken in converting receivables to cash = 365/469,162*6,353 = 4.92
Operating cycle = days taken in selling + days taken in recovering cash = 43.75 + 4.92 = 48.68
It should be compared with operating cycle of Walmart Competitors, like Amazon, Costco, Target.

WORKING CAPITAL POLICIES

Based on the attitude of the finance manager towards risk, profitability and liquidity, the working capital policies can be divided into following three types**.**

(i) Matching Approach

This approach is also known as the moderate or hedging approach. This policy aims to balance the risk and return involved in holding too much or too little working capital. Under this approach, the firm adopts a financial plan which involves the matching of the expected cash inflows (sources of funds) with the expected cash outflows the (uses of funds raised).

The firm therefore moderately balances its inventories of raw materials (work-in-progress and finished goods) to ensure that there are no down times, customer demand is adequately met and costs of holding such inventories are limited. Also, the firm holds just sufficient cash and cash equivalents sufficient to meet obligations as they fall due and be able to take advantage of investment opportunities to earn interest income from otherwise idle cash. This way, the firm is able to keep its financing costs at moderate levels. However, it should be noted that it is quite difficult to predict the working capital requirements of a firm with a lot of certainty.

(ii) Conservative Approach

An exact matching of assets life with the life of the funds may not be possible. In this approach a firm aims to reduce risks by holding high levels of working capital. To achieve this, customers are allowed generous credit terms in order to stimulate demand and finished goods inventories are kept high to ensure availability to customers. Also, raw materials and work in progress are high to avoid stock outs and downtime in manufacturing. To ensure that suppliers' goodwill is assured and hence regular supplies, the firm pays them promptly. The firm may store excess liquidity by investing in marketable securities to minimize shortages of cash.

This approach is good in that a business is assured of its working capital requirements. However, the firm holds a lot of unproductive assets such as excess inventories leading to obsolescence hence the cost of financing is very high. By holding cash and near cash equivalents, a firm will also be forgoing a lot of worthwhile investment opportunities by. The firm stands to lose since return on working capital is low.

(iii) Aggressive Approach

A firm using the aggressive policy aims to reduce the cost of financing. To achieve this, it reduces the level of inventories, speeds up collection from customers and delays payments to suppliers. This policy is enhanced by applying techniques such as just-in-time and economic order quantity. Such a policy has the disadvantage of increased chances of down time due to stock outs and loss of goodwill due to delayed payments to suppliers.

Risk-Return trade-off of the three approaches:

It should be noted that short-term funds are cheaper than long-term funds. (Some sources of short-term funds such as accruals are cost-free). However, short-term funds must be repaid within the year and therefore they are highly risky. With this in mind, we can consider the risk-return trade off of the three approaches.

The conservative approach is a low return-low risk approach. This is because the approach uses more of long-term funds which are now more expensive than short-term funds. These funds however, are not to be repaid within the year and are therefore less risky.
The aggressive approach on the other hand is a highly risky approach. However it is also a high return approach the reason being that it relies more on short-term funds that are less costly but riskier.
The matching approach is in between because it matches the life of the asset and the life of the funds financing the assets.

MANAGEMENT OF CASH, INVENTORY, DEBTORS AND CREDITORS

CASH AND MARKETABLE SECURITIES MANAGEMENT

The management of cash and marketable securities is one of the key areas of working capital management. Since cash and marketable securities are the firm's most liquid assets, they provide the firm with the ability to meet its maturing obligations.
Cash refers to cash in hand and cash on demand deposits (or current accounts). It therefore excludes cash in time deposits (which is not immediately available to meet maturing obligations).

Marketable securities are short-term investments made by the firm to obtain a return on temporary idle funds. Thus when a firm realizes that it has accumulated more cash than needed, it often puts the excess cash into an interest-earning instrument. The firm can invest the excess cash in any (or a combination) of the following marketable securities.

a) Government treasury bills
b) Agency securities such as local government's securities or parastatals securities
c) Banker's acceptances, which are securities, accepted by banks
d) Commercial paper (unsecured promissory notes)
e) Repurchase agreements
f) Negotiable certificates of deposits
g) Eurocurrencies etc.

CASH CYCLE AND CASH TURNOVERS

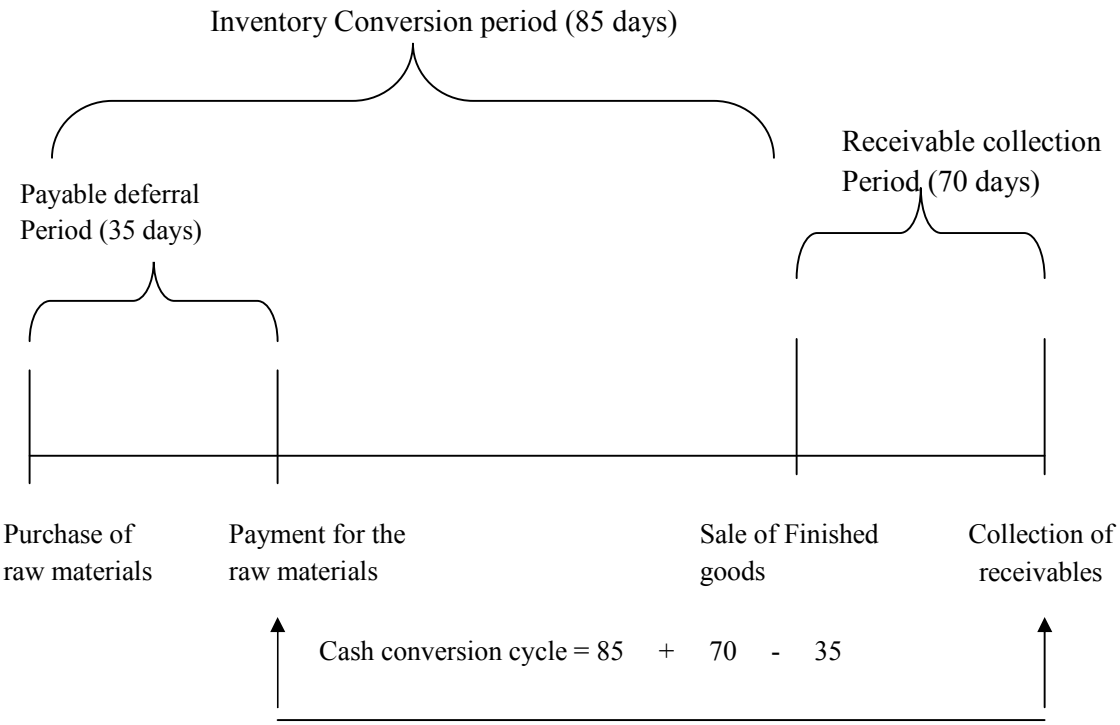
Cash Cycle refers to the amount of time that elapses from the point when the firm makes a cash outlay to purchase raw materials to the point when cash is collected from the sale of finished goods produced using those raw materials.
Cash turnover on the other hand refers to the frequency of a firm's cash cycle during a year.

Illustration
XYZ Ltd. currently purchases all its raw materials on credit and sells its merchandise on credit. The credit terms extended to the firm currently requires payment within thirty days of

a purchase while the firm currently requires its customers to pay within sixty days of a sale. However, the firm on average takes 35 days to pay its accounts payable and the average collection period is 70 days. On average, 85 days elapse between the point a raw material is purchased and the point the finished goods are sold.

Required
Determine the cash conversion cycle and the cash turnover.

SOLUTION
The following chart can help further understand the question:



The cash conversion cycle is given by the following formula:

Cash conversion = Inventory conversion + Receivable collection – Payable deferral
Cycle period period period

For our example:
Cash conversion cycle = 85 + 70 – 35 = 120 days

$$\text{Cash turnover} = \frac{360}{\text{Cash conversion cycle}}$$

$$= \frac{360}{120}$$

= 3 times

Note also that cash conversion cycle can be given by the following formulae:

$$\text{Cash conversion cycle} = 360\left[\frac{\text{inventory}}{\text{costofsales}} + \frac{\text{receivables}}{\text{sales}} - \frac{\text{Payables+ Accruals}}{\text{Cashoperatingexpenses}}\right]$$

SETTING THE OPTIMAL CASH BALANCE

Cash is often called a non-earning asset because holding cash rather than a revenue-generating asset involves a cost in form of foregone interest. The firm should therefore hold the cash balance that will enable it to meet its scheduled payments as they fall due and provide a margin for safety. There are several methods used to determine the optimal cash balance. These are:

a) The Cash Budget

The Cash Budget shows the firm's projected cash inflows and outflows over some specified period. This method has already been discussed in other earlier courses. The student should however revise the cash budget.

b) Baumol's Model

The Baumol's model is an application of the EOQ inventory model to cash management. Its assumptions are:

1. The firm uses cash at a steady predictable rate
2. The cash outflows from operations also occurs at a steady rate
3. The cash net outflows also occur at a steady rate.

Under these assumptions the following model can be stated:

$$C^* = \sqrt{\frac{2bT}{i}}$$

Where: **C*** is the optimal amount of cash to be raised by selling marketable securities or by borrowing.

b is the fixed cost of making a securities trade or of borrowing

T is the total annual cash requirements

i is the opportunity cost of holding cash (equals the interest rate on marketable securities or the cost of borrowing)

The total cost of holding the cash balance is equal to holding or carrying cost plus transaction costs and is given by the following formulae:

$$TC = \frac{1}{2}Ci + \frac{T}{C}b$$

Illustration

ABC Ltd. makes cash payments of Shs.10,000 per week. The interest rate on marketable securities is 12% and every time the company sells marketable securities, it incurs a cost of Shs.20.

Required

a) Determine the optimal amount of marketable securities to be converted into cash every time the company makes the transfer.
b) Determine the total number of transfers from marketable securities to cash per year.
c) Determine the total cost of maintaining the cash balance per year.
d) Determine the firm's average cash balance.

Solution

a) $$C^* \sqrt{\frac{2bT}{i}}$$

Where: b = Shs.20
T = 52 x 20,000 = Shs.520,000
i = 12%

$$C^* = \sqrt{\frac{2 \times 20 \times 520{,}000}{0.12}} = Sh.13{,}166$$

Therefore the optimal amount of marketable securities to be converted to cash every time a sale is made is Sh.13, 166.

b) Total no. of transfers $= \frac{T}{C^*}$

$= \frac{520{,}000}{13{,}166}$

$= 39.5$

$\approx$ 40 times

c) $TC = \frac{1}{2}Ci + \frac{T}{C}b$

$$= \frac{13{,}166 \times 0.12}{2} + \frac{520{,}000 \times 20}{13{,}166}$$

$$= 790 + 790 = \text{Shs.}1{,}580$$

Therefore the total cost of maintaining the above cash balance is Sh.1,580.

d) The firm's average cash balance = ½C

$$= \frac{13{,}166}{2}$$

$$= \underline{\text{Shs.}6{,}583}$$

c) Miller-Orr Model

Unlike the Baumol's Model, Miller-Orr Model is a stochastic (probabilistic) model which makes the more realistic assumption of uncertainty in cash flows.

Merton Miller and Daniel Orr assumed that the distribution of daily net cash flows is approximately normal. Each day, the net cash flow could be the expected value of some higher or lower value drawn from a normal distribution. Thus, the daily net cash follows a trendless random walk.

From the graph below, the Miller-Orr Model sets higher and lower control units, H and L respectively, and a target cash balance, Z. When the cash balance reaches H (such as point A) then H-Z shillings are transferred from cash to marketable securities. Similarly, when the cash balance hits L (at point B) then Z-L shillings are transferred from marketable securities cash.

The Lower Limit is usually set by management. The target balance is given by the following formula:

$$Z = \left[\frac{3B\delta^2}{4i}\right]^{1/3} + L$$

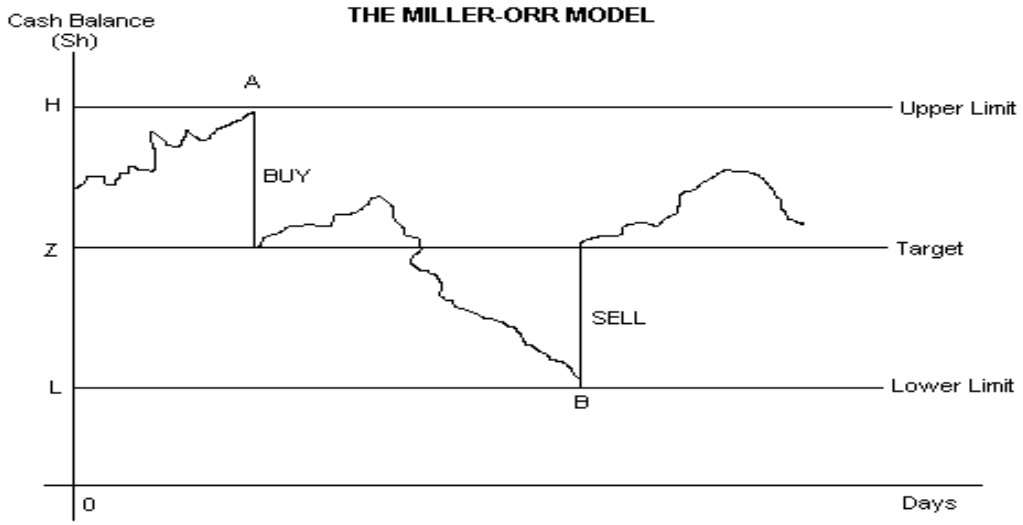
and the highest limit, H, is given by:

H = 3Z - 2L

The average cash balance = $\frac{4Z - L}{3}$

Where: Z = target cash balance
H = Upper Limit
L = Lower Limit
b = Fixed transaction costs
i = Opportunity cost on daily basis

δ^2 = variance of net daily cash flows



ILLUSTRATION

XYZ's management has set the minimum cash balance to be equal to Sh.10,000. The standard deviation of daily cash flow is Sh.2,500 and the interest rate on marketable securities is 9% p.a. The transaction cost for each sale or purchase of securities is Sh.20.

Required;-

a) Calculate the target cash balance
b) Calculate the upper limit
c) Calculate the average cash balance
d) Calculate the spread

Solution

a) $$Z = \left[\frac{3b\delta^2}{4i}\right]^{1/3} + L$$

$$= \left[\frac{3x20x(2,500)^2}{4x\frac{9\%}{360}}\right] + 10,000$$

$$= 7,211 + 10,000 = \text{Sh.}17,211$$

b) $H = 3Z - 2L$

$= 3 \times 17,211 - 2(10,000)$

$= \underline{\text{Shs.}31,633}$

c) Average cash balance = $\frac{4Z - L}{3}$

$$= \frac{4x17{,}211 - 10{,}000}{3}$$

d) The spread = H – L
= 31,633 – 10,000
= Shs.21,633

Note: If the cash balance rises to 31,633, the firm should invest Shs.14,422 (31,633 – 17,211) in marketable securities and if the balance falls to Shs.10,000, the firm should sell Shs.7,211(17,211 – 10,000) of marketable securities.

Other Methods

Other methods used to set the target cash balance are The Stone Model and Monte Carlo simulation. However, these models are beyond the scope of this book.

CASH MANAGEMENT TECHNIQUES

The basic strategies that should be employed by the business firm in managing its cash are:

i) To pay account payables as late as possible without damaging the firm's credit rating. The firm should however take advantage of any favourable cash discounts offered.
ii) Turnover inventory as quickly as possible, but avoid stock outs which might result in loss of sales or shutting down the 'production line'.
iii) Collect accounts receivable as quickly as possible without losing future sales because of high pressure collection techniques. The firm may use cash discounts to accomplish this objective.

In addition to the above strategies the firm should ensure that customer payments are converted into spendable form as quickly as possible. This may be done either through:

a) Concentration Banking
b) Lock-box system.

a) Concentration Banking

Firms with regional sales outlets can designate certain of these as regional collection centre. Customers within these areas are required to remit their payments to these sales offices, which deposit these receipts in local banks. Funds in the local bank account in excess of a specified limit are then transferred (by wire) to the firms major or concentration bank.
Concentration banking reduces the amount of time that elapses between the customer's mailing of a payment and the firm's receipt of such payment.

b) Lock-box system.

In a lock-box system, the customer sends the payments to a post office box. The post office box is emptied by the firm's bank at least once or twice each business day. The bank opens the payment envelope, deposits the cheques in the firm's account and sends a deposit slip indicating the payment received to the firm. This system reduces the customer's mailing time and the time it takes to process the cheques received.

MANAGEMENT OF INVENTORIES

Manufacturing firms have three major types of inventories:

1. Raw materials
2. Work-in-progress
3. Finished goods inventory

The firm must determine the optimal level of inventory to be held so as to minimize the inventory relevant cost.

BASIC EOQ MODEL

The basic inventory decision model is Economic Order Quantity (EOQ) model. This model is given by the following equation:

$$Q = \sqrt{\frac{2DC_o}{C_n}}$$

Where: Q is the economic order quantity

D is the annual demand in units

C_o is the cost of placing and receiving an order

C_n is the cost of holding inventories per unit per order

The total cost of operating the economic order quantity is given by total ordering cost plus total holding costs.

$$TC = \tfrac{1}{2}QCn + \frac{D}{Q}C_o$$

Where: Total holding cost = $\tfrac{1}{2}QC_n$

Total ordering cost = $\frac{D}{Q}C_o$

The holding costs include:

1. Cost of tied up capital
2. Storage costs
3. Insurance costs
4. Obsolescence costs

The ordering costs include:

1. Cost of placing orders such as telephone and clerical costs
2. Shipping and handling costs

Under this model, the firm is assumed to place an order of Q quantity and use this quantity until it reaches the reorder level (the level at which an order should be placed). The reorder level is given by the following formulae:

$$R = \frac{D}{360}L$$

Where: R is the reorder level
D is the annual demand
L is the lead time in days

EOQ Assumptions

The basic EOQ model makes the following assumptions:

i) The demand is known and constant over the year
ii) The ordering cost is constant per order and certain
iii) The holding cost is constant per unit per year
iv) The purchase cost is constant (Thus no quantity discount)
v) Back orders are not allowed.

Illustration

ABC Ltd requires 2,000 units of a component in its manufacturing process in the coming year which costs Sh.50 each. The items are available locally and the leadtime in one week. Each order costs Sh.50 to prepare and process while the holding cost is Shs.15 per unit per year for storage plus 10% opportunity cost of capital.

Required

a) How many units should be ordered each time an order is placed to minimize inventory costs?
b) What is the reorder level?
c) How many orders will be placed per year?
d) Determine the total relevant costs.

Suggested Solution:

a) $Q = \sqrt{\frac{2DC_o}{C_n}}$

Where: D = 2,000 units
C_o = Sh.50
C_n = Sh.15 + 10% x 50 = Sh.20
L = 7 days

$$Q = \sqrt{\frac{2x2,000x50}{20}} = 100 units$$

b) $R = \frac{DL}{360}$

$= \frac{2,000x7}{360}$

$=$ 39 units

c) No. of orders $= \frac{D}{Q}$

$= \frac{2,000}{100}$

$=$ 20 orders

d) $TC = \frac{1}{2}QCn + \frac{D}{Q}C_o$

$= \frac{1}{2}(100)(20) + \frac{2,000}{100}(50)$

$= 1,000 + 1,000$

$=$ Sh.2,000

Under the basic EOQ Model the inventory is allowed to fall to zero just before another order is received.

EXISTENCE OF QUANTITY DISCOUNTS

Frequently, the firm is able to take advantage of quantity discounts. Because these discounts affect the price per unit, they also influence the Economic Order Quantity.

If discounts exists, then usually the minimum amount at which discount is given may be greater than the Economic Order Quantity. If the minimum discount quantity is ordered, then the total holding cost will increase because the average inventory held increases while the total ordering costs will decrease since the number of orders decrease. However, the total purchases cost will decrease.

Illustration

Consider illustration one and assume that a quantity discount of 5% is given if a minimum of 200 units is ordered.

Required;

Determine whether the discount should be taken and the quantity to be ordered.

Solution

We need to consider the saving in purchase costs; savings in ordering costs and increase in holding costs.

Savings in purchase price:

New purchase price	=	50 x 95% = Sh.47.50 per unit
Savings in purchase price per unit	=	50 – 47.50
	=	Sh.2.50
Total units per year	=	2,000
Total savings	=	2,000 x 2.50 = Sh.5,000

Savings in Ordering Cost

Assuming an order quantity of 200 units per order, the total ordering cost will be:

$$\frac{2,000}{100}(50) = \text{Sh.}500$$

Ordering cost if 100 units is ordered

$$\frac{2,000}{100}(100) = \text{Sh.}1,000$$

Therefore savings in ordering costs = 1,000 – 500 = Sh.500

Increase in holding costs

Holding cost if 200 units are ordered

½(200)19.75 = Sh.1,975

holding costs if 100 units are ordered

½(100(20) = Sh.1,000

Increase in holding costs = 1,975 – 1,000 = Sh.975

The Net Effect therefore:

	Shs.	
Savings in purchases costs	5,000	
Savings in ordering costs	500	
Total savings	5,500	
Less increase in holding costs		975
Net savings	4,525	

$$Q_d = \sqrt{\frac{2DC_o}{C_n}}$$

$$Q_d = \sqrt{\frac{2x2,000x50}{19.75}}$$

C_n = 15 + 10% x 4.75 = Shs.19.75

The discount should be taken because the net savings is positive. To determine the number of units to order we recomputed Q with discount Q_d.

= 100.6 units

Decision rule:

If Q_d< minimum discount quantity, then order the minimum discount quantity.
If Q_d< minimum discount quantity, then order Q_d.

UNCERTAINTY AND SAFETY STOCKS

Usually demand requirements may not be certain and therefore the firm holds safety stock to safeguard stock out cases. The existence of safety stock can be illustrated by Figure 5.7.

The safety stock guards against delays in receiving orders. However, carrying a safety stock has costs (it increases the average stock).

Illustration

Consider illustration one and assume that management desires to hold a minimum stock of 10 units (this stock is in hand at the beginning of the year).

Required

a) Determine the re-order level

b) Determine the total relevant costs

Suggested solution

a) $R = \frac{DL}{360} + S$

Where: S is the safety stock

$= \frac{2,000}{360} x7 + 10$

$= \underline{49 \text{ units}}$

b) The average inventory= ½Q + S

$TC = (½Q + S)C_n + D/QC_o$

$= [½(100) + 10]20 + \frac{2,000}{100}(50)$

$= 1,200 + 1,000$

$= \underline{Shs.2,200}$

MANAGEMENT OF ACCOUNT RECEIVABLE

In order to keep current customers and attract new ones, most firms find it necessary to offer credit. Accounts receivable represents the extension of credit on an open account by a firm to its customers. Accounts receivable management begins with the decision on whether or not to grant credit.

The total amount of receivables outstanding at any given time is determined by:

a) The volume of credit sales

b) The average length of time between sales and collections.

Accounts receivables= Credit sales per day × Length of collection period

The average collection period depends on:

a) Credit standards which is the maximum risk of acceptable credit accounts
b) Credit period which is the length of time for which credit is granted
c) Discount given for early payments
d) The firm's collection policy.

a) CREDIT STANDARDS

A firm may follow a lenient or a stringent credit policy. The firm following a lenient credit policy tends to sell on credit to customers on a very liberal terms and credit is granted for a longer period.

A firm following a stringent credit policy on the other hand, sell on credit on a highly selective basis only to those customers who have proven credit worthiness and who are financially strong.

A lenient credit policy will result in increased sales and therefore increased contribution margin. However, these will also result in increased costs such as:

1. Increased bad debt losses
2. Opportunity cost of tied up capital in receivables
3. Increased cost of carrying out credit analysis
4. Increased collection cost
5. Increased discount costs to encourage early payments

The goal of the firm's credit policy is to maximise the value of the firm. To achieve this goal, the evaluation of investment in receivables should involve the following steps:

1. Estimation of incremental operating profits from increased sales
2. Estimation of incremental investment in account receivable
3. Estimation of incremental costs
4. Comparison of incremental profits with incremental costs

b) CREDIT TERMS

Credit terms involve both the length of the credit period and the discount given. The terms 2/10, n/30 means that a 2% discount is given if the bill is paid before the tenth day after the date of invoice otherwise the net amount should be paid by the 30th day.

In considering the credit terms to offer the firm should look at the profitability caused by longer credit and discount period or a higher rate of discount against increased cost.

c) DISCOUNTS

Varying the discount involves an attempt to speed up the payment of receivables. It can also result in reduced bad debt losses.

d) COLLECTION POLICY

The firm's collection policy may also affect our analysis. The higher the cost of collecting account receivables the lower the bad debt losses. The firm must therefore consider whether the reduction in bad debt is more than the increase in collection costs.

As saturation point increases expenditure in collection efforts does not result in reduced bad debt and therefore the firm should not spend more after reaching this point.

Illustration

Riffruff Ltd is considering relaxing its credit standards. The firms current credit terms is net 30 but the average debtors collection period is 45 days. Current annual credit sales amounts to Sh.6,000,000. The firm wants to extend credit period net 60. Sales are expected to increase by 20%. Bad debts will increase from 2% to 2.5% of annual credit sales. Credit analysis and debt collection costs will increase by Sh.4,000 p.a. The return on investment in debtors is 12% for Sh.100 of sales, Sh.75 is variable costs. Assume 360 days p.a. Should the firm change the credit policy?

Solution

Current sales = Sh.6,000,000

New sales = Sh.6,000,000 x 1.20 = Sh.7,200,000

Contribution margin = Sh.100 – Sh.75 = Sh.25

Therefore contribution margin ratio = $\frac{\text{Sh.25}}{\text{Sh.100}} \times 100$ = 25%

Cost benefit analysis

Contribution Margin				
New policy	25% x 7,200,000	=	1,800	
Current policy	25% x 6,000,000	=	1,500	= 300
Credit analysis and debt collection costs				(84)
Bad debts				
New bad debts	= 2.5% x 7,200,000	=	180	
Current bad debts	= 2% x 6,000,000	=	120	(60)

Debtors

New debtors = $\frac{\text{Cr.period}}{\text{360days}}$ x cr. Sales p.a.

= $\frac{60}{360} \times 7{,}200{,}000$ = 1,200

Current debtors = $\frac{45}{360} \times 6{,}000{,}000$ = 750

Increase in debtors (tied up capital) 450

Forgone profits = 12% x 450 (54)

Net benefit (cost) 102

Therefore, change the credit policy.

EVALUATION OF THE CREDIT APPLICANT

After establishing the terms of sale to be offered, the firm must evaluate individual applicants and consider the possibilities of bad debt or slow payments. This is referred to as credit analysis and can be done by using information derived from:

a) The applicant's financial statement
b) Credit ratings and reports from experts
c) Banks
d) Other firms
e) The company's own experience

Application of Discriminant Analysis to the Selection of Applicants

Discriminative analysis is a statistical model that can be used to accept or reject a prospective credit customer. The discriminant analysis is similar to regression analysis but it assumed that the observations come from two different universal sets (in credit analysis, the good and bad customers). To illustrate let us assume that two factors are important in evaluating a credit applicant the quick ratio and net worth to total assets ratio.

The discriminant function will be of the form.

$f_t = a_1(X_1) + a_2(X_2)$

Where: X_1 is quick ratio
X_2 is the network to total assets
a_1 and a_2 are parameters

The parameters can be computed by the use of the following equations:

$$a_1 = \frac{Szz\ dx - Sxzdz}{SxxSxx - Sxz^2}$$

$$a_2 = \frac{Szz\ dx - Sxzdz}{SzzSxx - Sxz^2}$$

Where: Sxx represents the variances of X_1
Szz represents the variances of X_2
Sxz is the covariance of variables of X_1 and X_2
d_x is the difference between the average of X_1's bad accounts and X_2's good accounts
d_z represents the difference between the average of X's bad accounts and X's good accounts.

The next step is to determine the minimum cut-off value of the function below at which credit will not be given. This value is referred to as the discriminant value and is denoted by f^*.

Once the discriminant function has been developed it can then be used to analyse credit applicants. The important assumption here is that new credit applicants will have the same characteristics as the ones used to develop the mode.

More than two variables can be used to determine the discriminant function. In such a case the discriminant function will be of the form.

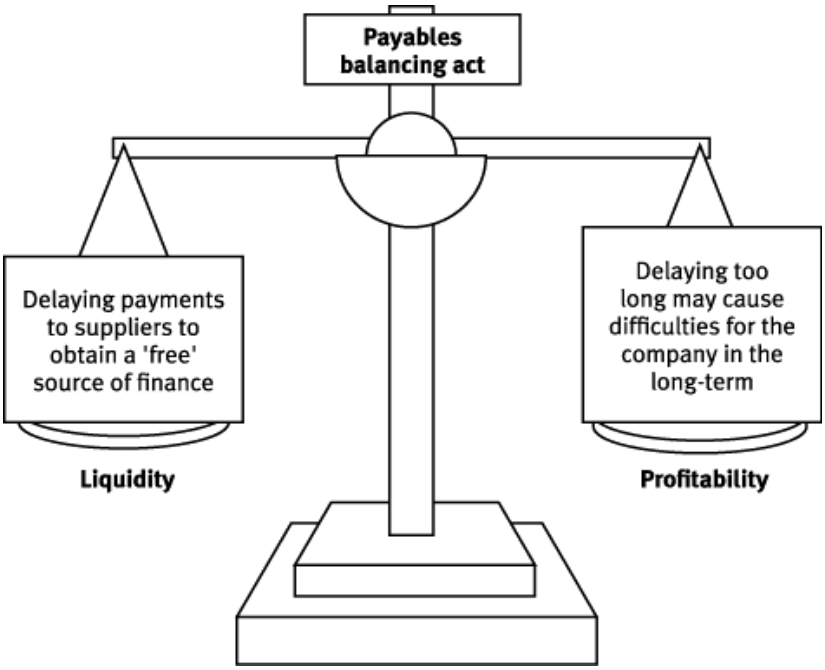
$$f_t = a_1x_1 + a_2x_2 + \ldots + a_nx_n$$

CREDITORS MANAGEMENT

Managing creditors / payables is a key part of working capital management.

Trade credit is the simplest and most important source of short-term finance for many companies. The objectives of payables management are to ascertain the optimum level of trade credit to accept from suppliers.

Deciding on the level of credit to accept is a balancing act between liquidity and profitability.



By delaying payment to suppliers companies face possible problems:

- supplier may refuse to supply in future
- supplier may only supply on a cash basis
- there may be loss of reputation
- supplier may increase price in future.

Early settlement discounts

A proportion of the firm's suppliers will normally offer early **settlement discounts** which should be taken up where possible by ensuring prompt payment within the specified terms where settlement discount is allowed. However, if the firm is short of funds, it might wish to make maximum use of the credit period allowed by suppliers regardless of the settlement discounts offered.

Annual cost of a discount

The calculation of the annual cost of a discount can be expressed as a formula:

$$\text{Annual cost of discount} = \left[1 + \frac{\text{discount}}{\text{amount left to pay}}\right]^{\text{no.of periods}} - 1$$

Notice that the annual cost calculation is always based on the amount left to pay, i.e. the amount net of discount.

If the annual cost of the discount exceeds the rate of overdraft interest then the discount should not be accepted

TOPIC 10

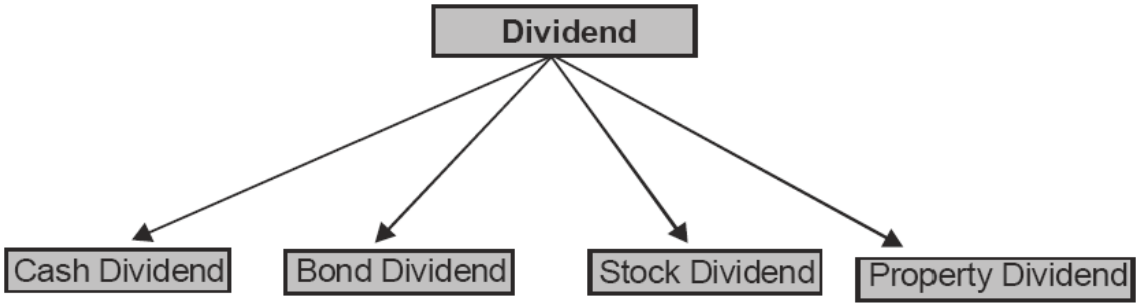
DIVIDEND POLICY

Meaning of Dividend
Dividend refers to the business concerns net profits distributed among the shareholders. It may also be termed as the part of the profit of a business concern, which is distributed among its shareholders.

FORMS OF DIVIDEND

Dividend may be distributed among the shareholders in the form of cash or stock. Hence, Dividends are classified into:

a) Cash dividend
b) Stock dividend
c) Bond dividend
d) Property dividend



Cash Dividend
If the dividend is paid in the form of cash to the shareholders, it is called cash dividend. It is paid periodically out the business concerns EAIT (Earnings after interest and tax). Cash dividends are common and popular types followed by majority of the business concerns.

Stock Dividend
Stock dividend is paid in the form of the company stock due to raising of more finance. Under this type, cash is retained by the business concern. Stock dividend may be bonus issue. This issue is given only to the existing shareholders of the business concern.

Bond Dividend

Bond dividend is also known as script dividend. If the company does not have sufficient funds to pay cash dividend, the company promises to pay the shareholder at a future specific date with the help of issue of bond or notes.

Property Dividend
Property dividends are paid in the form of some assets other than cash. It will distributed under the exceptional circumstance.

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DIVIDEND POLICY

Dividend policy determines the division of earnings between payment to shareholders and reinvestment in the firm. It therefore involves the following four aspects:

1. HOW MUCH TO PAY

It encompasses the 4 major alternative dividend policies.

a) Constant payout ratio

This is where the firm will pay a fixed dividend rate e.g. 40% of earnings. Dividends will therefore fluctuate as the earnings change. Dividends are therefore directly dependant on the firms earning ability. If no profits are made, no dividends are paid. The policy creates uncertainty in ordinary shareholders especially those who depend on dividend income thus they may demand a higher required rate of return.

b) Constant amount per share/fixed dividend per share

The dividend per share is fixed in amount irrespective of the earnings level. This creates uncertainty and is thus preferred by shareholders who have a reliance on dividend income. It protects the firm from periods of low earnings by fixing dividends per share at a low level. Thus policy treats all shareholders like preference shareholders by giving a fixed return. Dividend per share could be increased to a higher level if earnings appear relatively permanent and sustainable.

c) Constant amount plus extra

Here, a constant dividend per share is paid every year. However, extra dividends are paid in years of supernormal earnings. This policy gives firms the flexibility to increase dividends when earnings are high and shareholders are given a chance to participate in the supernormal profits of the firm. The extra dividends are given in such a way that it is not seen as a commitment to continue the extra in the future. It is applied by firms whose earnings are highly volatile e.g. the agricultural sector.

d) Residual amount

Under this policy, dividend is paid out of earnings left over after investment decisions have been financed. Dividends will therefore only be paid if there are no profitable investment opportunities available. This policy is consistent with shareholders wealth maximization.

2. WHEN TO PAY

Dividends can either be interim or final.

Interim dividends are paid in the middle of the financial year and are paid in cash.

Final dividends are paid at the year end and can be and can be in cash and stock form (bonus issue).

3. WHY PAY

a) Residue dividend theory

Under this theory, a firm will pay dividends from residue earnings ie. Earnings remaining after all suitable projects with a positive NPV have been financed. It assumes that retained earnings are the best source of long term capital since it is readily available and cheap. This is because no floatation costs are involved in the use of retained earnings to finance new investments therefore the first claim on profit after tax and preference dividend. There will be a reserve for financing investments. Dividend policy is therefore irrelevant and treated as a passive variable. It will hence not affect the value of the firm. However the investment decision will.

Advantages of residual theory

1. Savings on floatation costs
2. There is no need to raise debt or equity capital since there is a high retention of earnings which require no floatation costs.
3. Avoidance of dilution of ownership. A new equity issue will dilute ownership and control. This will be avoided if retention is high.
4. Tax position of shareholders. High income shareholders prefer low dividends to reduce their tax burden from dividend income. They prefer high retention of earnings which are reinvested. This increase the share value and they make capital gains which are not taxable.

b) MM dividends irrelevance theory.

This was proposed by Modigliani and Muller .This theory asserts that a firms divided policy has no effect on its market value and cost of capital .They argued that the firm value is primarily determined by .

(i) Ability to generate earnings from investments .
(ii) Level of business and financial risk .

According to MM dividend policy is a passive residue determined by the firms needs for investment funds. It does not matter how earnings are divided between divided and retention therefore divided policy does not exist . When investment decisions are made dividend decision is a mere detail without any effect on the value opf the firm

C) The main dividend theories are:

i. Residual dividend theory
ii. MM dividend irrelevance theory
iii. Bird in hand theory
iv. Information signaling effect theory
v. Tax differential theory
vi. Clientele effect theory
vii. Agency theory

4. HOW TO PAY DIVIDENDS/ MODE OF PAYING DIVIDENDS

a) Cash or Bonus issue

Ideally, a firm should pay cash dividends, for such a company it must ensure that it that it has enough liquid funds to make payment. Under conditions of liquidity and financial constraints, a firm can pay stock dividends (bonus issue) Bonus issue involves an issue of additional shares in addition to or instead of cash to the existing shareholders prorate to their share holding in the company. A stock dividend / bonus issue involves capitalization of retained earnings therefore does not increase the wealth of the shareholders. This is because retained earnings are converted into share capital.

Advantages of a bonus issue

i. To indicates that the form plans to retain a portion of earnings permanently in the business.
ii. To continue dividend distribution s without disbursing cash needed for operation.
iii. T o increase the trading of shares in the market.
iv. Tax advantage. Shareholders can sale the new shares to generate cash in the form of capital gains which are tax exempt unlike cash dividends which attract a 5% withholding tax which is final.
v. Indication of higher profits in the future of the company. A bonus issue is inefficient market survey is important information that the firm expects high profits in future to offset additional outstanding share so that the earnings per share is not diluted.

b) Stock Splits and reverse split.

A stock split is a change in the number of shares outstanding accompanied by an offsetting change in the par or stated value per share.

The primary purpose of a stock split is to increase the market activity of the stock.

Example

A company has 1000 ordinary shares of sh.20 each and a share split has been announced of 1:4. The effect on ordinary share capital is a s follows;

New par value = 20/4
=sh.5

Ordinary shares outstanding = 1000×4
=4000

The ordinary share capital remains the same (4000×5=sh. 20,000)

A reverse split is the opposite of a stock split as it involves consolidation of shares into bigger units thereby increasing the par value of the shares .It is meant to attract high income clientele.

Example

In the case of 20,000 shares at sh.20 par value, they can be considered into 10,000 shares at par value of sh.40 par value.

Example

Company Z has the following capital structure,

	sh.000
Ordinary shares (Sh.20 par)	8000
Share premium	3600
Retained earnings	2400
	14000

The company shares have been selling in the market for sh.60. The management has declared a share split of 4 share for every one share held. Assume that the shares are expected to sell at sh17 after the stock split.

Required,

i. Prepare the capital structure of the company after the company's stock split.
ii. Compute the capital gain for a shareholder who held 40,000 shares before the split.

Solution

i)

		shares
Number of shares before split	sh.8000,000÷20	400,000
Number of shares after split	400,000×4	1,600,000
New par value	20/4	sh.5
Capital structure	sh.000	
Ordinary shares (Sh.5 par)	8,000	
Share premium	3,600	
Retained earnings	2,400	
	14,000	

ii)

		sh.000
Shares before split	40,000×60	2400
Share after split	40,000×4×17	2750
Capital gain	2750 -2400	320

c) Stocks repurchase.

The company can also buy back some of its outstanding shares instead of paying cash dividends. This is known as a stocks repurchase and the share bought back are known as treasury stock. If some outstanding shares are repurchased, fewer share s would remain outstanding .Assuming a repurchase does not adversely affect the firm's earnings , EPS would increase .This would result in an increase in the market price per share so that a capital gain is substituted for dividends.

Advantages of stock repurchase.

1. ***Utilization of idle funds.***

   Companies which have accumulated cash balances in excess of future investments might find a share re-investment scheme a fair method of returning cash to shareholders .Continuing to carry excess cash may prompt management to invest unwisely as a means of using excess cash e.g. a firm may invest in a tendency for more mature firms to continue in investment plans even when the expected return is lower than the cost of capital.

2. ***Enhanced dividends and EPS.***

   Following a stock repurchase, the number of shares issued would decrease therefore in normal circumstances , both DPS and EPS would increase in future . However the increase in EPS is a book-keeping increase since total earnings remain constant.

3. ***Enhanced share price.***

   Companies that undertake a stock repurchase experience an increase in the market price of the share.

4. ***Capital structure.***

   A company's managers may use a share buy-back or repurchase as a means of correcting what they perceive to be an unbalanced capital structure .If shares are repurchased from cash reserves, equity would be reduced and gearing increased , assuming debt exists in the capital structural term natively , a company may raise debt to finance a repurchase . Replacing equity with debt can reduce the overall cost of capital.

5. ***Reducing takeover threat.***

   A share repurchase reduces the number of shares in operation and also the number of weak shareholders i.e. shareholders with no strong loyalty to the company since a repurchase would induce them to sell .This helps to reduce the threat of as hostile takeover as it makes it difficult for a predator company to gain control .This is also referred to as a poison pill i.e. a company's value is reduced because of huge cash outflow or borrowing huge long-term debt to increase gearing.

Disadvantages of a stock repurchase.

1. ***High price.***

   A company may find it difficult to repurchase\se at their current value or the price paid maybe too high to the detriment of the remaining shareholders.

2. ***Market signaling.***

   Despite directors efforts at trying to convince markets otherwise, a share repurchase may be taken as a signal that the company lacks suitable investment opportunities .This may be interpreted as a sign of management failure.

3. ***Loss of investment income.***

The interest that could have been earned from investment of excess cash is lost.

DIVIDEND POLICIES AND FACTORS INFLUENCING DIVIDEND POLICIES

The various types of dividend policies are discussed as follows:

1. Regular Dividend Policy

In this type of dividend policy the investors get dividend at usual rate. Here the investors are generally retired persons or weaker section of the society who want to get regular income. This type of dividend payment can be maintained only if the company has regular earning.

Payment of dividend at the usual rate is termed as regular dividend.

Advantages of regular dividend policy:

i) It establishes a profitable record of the company.
ii) It creates confidence amongst the shareholders.
iii) It aids in long-term financing and renders financing easier.
iv) It stabilizes the market value of shares.
v) The ordinary shareholders view dividends as a source of funds to meet their day-to-day living expenses.
vi) If profits are not-distributed regularly and are retained, the shareholders may have to pay a higher rate of tax in the year when accumulated profits are distributed. However, it must be remembered that regular dividends can be maintained only by companies of long standing and stable earnings.

2. Stable Dividend Policy

The term 'stability of dividends' means consistency in the stream of dividend payments. In more precise terms, it means payment of certain minimum amount of dividend regularly. A stable dividend policy may be established in any of the following three forms:

a) Constant payout ratio

This is where the firm will pay a fixed dividend rate e.g. 40% of earnings. The DPS would therefore fluctuate as the earnings per share changes.
Dividends are directly dependent on the firm's earnings ability and if no profits are made no dividend are paid.
This policy creates uncertainty to ordinary shareholders especially who rely on dividend income and they might demand a higher required rate of return.

b) Constant amount per share (fixed D.P.S.)

The DPS is fixed in amount irrespective of the earnings level. This creates certainty and is therefore preferred by shareholders who have a high reliance on dividend income.

It protects the firm from periods of low earnings by fixing DPS at a low level.
This policy treats all shareholders like preferred shareholders by giving a fixed return. The DPS could be increased to a higher level if earnings appear relatively permanent and sustainable.

c) Constant DPS plus Extra/Surplus

Under this policy a constant DPS is paid every year. However extra dividends are paid in years of supernormal earnings.

It gives the firm flexibility to increase dividends when earnings are high and the shareholders are given a chance to participate in super normal earnings

The extra dividend is given in such a way that it is not perceived as a commitment by the firm to continue the extra dividend in the future. It is applied by the firms whose earnings are highly volatile e.g agricultural sector.

d) Residual dividend policy

Under this policy dividend is paid out of earnings left over after investment decisions have been financed. Dividend will only be paid if there are no profitable investment opportunities available. The policy is consistent with shareholders wealth maximization.

Advantages of Stable Dividend Policy

(i) It is sign of continued normal operations of the company.
(ii) It stabilizes the market value of shares
(iii) It creates confidence among the investors, improves credit standing and makes financing easier.
(iv) It provides a source of livelihood to those investors who view dividends as a source of fund to meet day-to-day expenses.
(v) It meets the requirements of institutional investors who prefer companies with stable divide.

3. Irregular Dividend Policy

In this policy the firm doesn't pay fixed dividend regularly and it changes from year to year according to changes in earnings level. This is followed by the companies which have unstable earning

Some companies follow irregular dividend payments on account of the following:

(i) Uncertainty of earnings
(ii) Unsuccessful business operations
(iii) Lack of liquid resources

4. No Dividend Policy

A company can follow a policy of paying no dividends presently because of its unfavorable working capital position or on account of requirements of funds for future expansion and growth.

FACTORS INFLUENCING DIVIDENDPOLICIES

1. **Legal rules:**
   a) ***Net profit rule-*** This states that the dividends may be paid from company profits, either past or present.
   b) ***Capital impairment rule-*** This prohibits payment of dividends from capital i.e. from the sale of assets. This would be liquidating the firm.
   c) ***Insolvency rule-*** This prohibits payment of dividends when a company is insolvent .An insolvent company is one where assets are less than liabilities .In such a case all earnings and assets belong to debt holders and no dividends are paid.

2. **Profitability and liquidity.**
   A company's capacity to pay dividends will be determined primarily by its ability to generate adequate and stable profits and cashflows. If the company has liquidity problems, it may be unable to pay cash dividends and resort to paying stock dividends.

3. **Investment opportunity.**
   Lack of appropriate investment opportunities i.e. those with positive returns may encourage a firm to increase its dividend distribution. If a firm has many investments opportunities it will pay low dividends and have high retention.

4. **Tax position of share holder**
   Dividend payment is influenced by the tax regime of a country e.g. in Kenya cash dividends are taxed at source, while capital gains are tax exempt. The effect of tax differential is to discourage shareholders from wanting high dividends.

5. **Capital structure.**
   A company's management may wish to achieve or restore an optimal capital structure. E.g. If they consider gearing to be too high they may pay low dividends and allow reserves to accumulate until a more optimal capital structure is achieved or restored.

6. **Industrial practice**
   Companies will be resistant to deviate from accepted dividend or payment norms in the industry.

7. **Growth stage.**
   Dividend policy is likely to be influenced by the firms growth stage, e.g. a young rapidly growing firm is likely to have high demand for developing funds therefore may pay low dividends or differ dividend payment till the company reaches maturity. It will therefore retain high amounts.

8. **Owners hip structure.**

A dividend policy may be driven by the ownership structure in affirm e.g. in small firms where the owners and managers are the same, dividend payout is usually low. However, in large quoted public companies, dividends are significant since the owners are not the

managers. The value and preferences of a small group of owner managers would exert more direct influence on the dividend policy.

9. Access to capital markets.
Large well established firms have access to capital markets hence can get funds easily. They therefore pay high dividends unlike small firms which pay low dividends due to the limited borrowing capacity.

10. Shareholders expectation.
Shareholder s that have become accustomed to receiving stable and increasing dividends will expect a similar pattern to continue in to the future .Any sudden reduction or reversal of such a policy is likely to dissatisfy shareholders and the results in falling share prices.

11. Contractual obligations on debt covenants.
This limits the flexibility and amount of dividends to pay e.g. the cashflow based covenants.

Important ratios on dividends

Dividend pay-out ratio

This ratio reflects a company's dividend policy. It indicates the proportion of earnings per share paid out to ordinary shareholders as divided. It is computed as follows:

$$Dividend\ payout\ ratio\ = \frac{Dividends\ per\ ordinary\ share}{Earnings\ per\ share}$$

$$Where\ ordinary\ dividends\ per\ share\ = \frac{Ordinary\ dividends}{Number\ of\ ordinary\ shares}$$

Dividend Yield Ratio

This shows the dividend return being provided by the share. It is given by

$$Dividend\ yield\ = \frac{Dividends\ per\ \ share}{Market\ price\ per\ share}$$

DIVIDEND THEORIES

The main dividends theories are:

1. Residual dividend theory
Under this theory, a firm will pay dividends from residual earnings i.e. earnings remaining after all suitable projects with positive NPV has been financed.

It assumes that retained earnings are the best source of long term capital since it is readily available and cheap. This is because no floatation cash are involved in use of retained earnings to finance new investments.
Therefore, the first claim on earnings after tax and preference dividends will be a **reserve** for financing investments.
Dividend policy is irrelevant and treated as passive variable. It will not affect the value of the firm. However, investment decisions will.

Advantages of Residual Theory

1. ***Saving on floatation costs***
   No need to raise debt or equity capital since there is high retention of earnings which requires no floatation costs.
2. ***Avoidance of dilution of ownership***
   New equity issue would dilute ownership and control. This will be avoided if retention is high.
   A high retention policy may enable financing of firms with rapid and high rate of growth.
3. ***Tax position of shareholders***
   High-income shareholders prefer low dividends to reduce their tax burden on dividends income.
   They prefer high retention of earnings which are reinvested, increase share value and they can gain capital gains which are not taxable in Kenya.

2. MM Dividend Irrelevance Theory

This is the theory that a firm's dividend policy has no effect in either its value or its cost of capital. MM argued that a firm's value is determined only its basic earning power and its business risk. They argued that the value of the firm depends only on the income produced by its assets, not on how this income is split between dividends and retained earnings.

MM noted that any shareholder can in theory construct his/her own dividend policy e.g. if a firm does not pay dividends, shareholder who wants a 5% dividend can "create" it by selling 5% of his/her stock. Conversely, if a company pays a higher dividend than an investor desires, the investor can use the unwanted dividends to buy additional shares of the company's stock. If investors could buy and sell shares and thus create their own dividend policy without incurring cost, then the firm's dividend policy would truly be irrelevant.

However, it should be noted that investors who want additional dividends must incur brokerage costs to sell shares and investors who do not want dividends must first pay taxes on the unwanted dividends and then incur brokerage costs to purchase shares with the after-tax dividends. Since taxes and brokerage costs to purchase shares with the after-tax dividends. Since taxes and brokerage costs certainly exist, dividend policy may well be relevant.

Was advanced by Modigliani and Miller in 1961. The theory asserts that a firm's dividend policy has no effect on its market value and cost of capital.
They argued that the firm's value is primarily determined by:

- Ability to generate earnings from investments
- Level of business and financial risk

According to MM dividend policy is a passive residue determined by the firm's need for investment funds.

It does not matter how the earnings are divided between dividend payment to shareholders and retention. Therefore, optimal dividend policy does not exist. Since when investment decisions of the firms are given, dividend decision is a mere detail without any effect on the value of the firm.

They base on their arguments on the following assumptions:

1. No corporate or personal kites
2. No transaction cost associated with share floatation
3. A firm has an investment policy which is independent of its dividend policy (a fixed investment policy)
4. Efficient market – all investors have same set of information regarding the future of the firm
5. No uncertainty – all investors make decisions using the same discounting rate at all time i.e required rate of return (r) = cost of capital (k).

3. Bird-in-hand theory

Advanced by John Litner (1962) and furthered by Myron Gordon (1963).
Argues that shareholders are **risk averse** and prefer certainty. Dividends payments are more certain than capital gains which rely on demand and supply forces to determine share prices.

Therefore, one bird in hand (certain dividends) is better than two birds in the bush (uncertain capital gains).

Therefore, a firm paying high dividends (certain) will have **higher value** since shareholders will require to use lower discounting rate.

MM argued against the above proposition. They argued that the required rate of return is independent of dividend policy. They maintained that an investor can realize capital gains generated by reinvestment of retained earnings, if they sell shares.

If this is possible, investors would be indifferent between cash dividends and capital gains.

Gordon & Lintner argued that K decreases as the dividend pay-out is increased because investors are less certain of receiving the capital gains that are supposed to result from retaining earnings than they are of receiving dividend payments.

Gordon & Linter argued in effect that investors value a dollar or shilling of expected dividend more highly than a dollar / shilling of expected capital gains.

$$Ks = \frac{D_1}{P_o} + g$$

The bird-in-hand theory is based on the logic that what is available at present is preferable to what may be available in the future. Basing their model on this argument, Gordon and Lintner argued that the future is uncertain and the more distant the future is, the more uncertain it is likely to be. Therefore, investors would be inclined to pay a higher price for shares on which current dividends are paid.

4. Information signaling effect theory

Advanced by Stephen Ross in 1977, he argued that in an inefficient market, management can use dividend policy to signal important information to **the market which is only known to them.**

Example – If the management pays high dividends, it signals high expected profits in future to maintain the high dividend level. This would increase the share price/value and vice versa.

MM attacked this position and suggested that the change in share price following the change in dividend amount is due to **informational content of dividend policy** rather than dividend policy itself. Therefore, dividends are irrelevant if information can be given to the market to all players.

Dividend decisions are relevant in an inefficient market and the higher the dividends, the higher the value of the firm. The theory is based on the following four assumptions:

1. The sending of signals by the management should be cost effective.
2. The signals should be correlated to observable events (common trend in the market).
3. No company can imitate its competitors in sending the signals.
4. The managers can only send true signals even if they are bad signals. Sending untrue signals is financially disastrous to the survival of the firm.

5. Tax differential theory

Advanced by Litzenberger and Ramaswamy in 1979

They argued that tax rate on dividends is higher than tax rate on capital gains. Therefore, a firm that pays high dividends have lower value since shareholders pay more tax on dividends.

Dividend decisions are relevant and the lower the dividend the higher the value of the firm and vice versa.

Note
In Kenya, dividends attract a withholding tax of 5% which is final and capital gains are tax exempt.

6. Clientele effect theory
Advance by Richardson Petit in 1977

It stated that different groups of shareholders (clientele) have different preferences for dividends depending on their level of income from other sources.

Low income earners prefer high dividends to meet their daily consumption while high income earners prefer low dividends to avoid payment of more tax. Therefore, when a firm sets a dividend policy, there'll be shifting of investors into and out of the firm until an equilibrium is achieved. Low, income shareholders will shift to firms paying high dividends and high income shareholders to firms paying low dividends.
At equilibrium, dividend policy will be consistent with clientele of shareholders a firm has. Dividend decision at equilibrium is irrelevant since they cannot cause any shifting of investors.

7. Agency theory
The agency problem between shareholders and managers can be resolved by paying high dividends. If retention is low, managers are required to raise additional equity capital to finance investment. Each fresh equity issue will expose the managers financing decision to providers of capital e.g bankers, investors, suppliers etc. Managers will thus engage in activities that are consistent with maximization of shareholders wealth by making full disclosure of their activities.
This is because they know the firm will be exposed to external parties through external borrowing. Consequently, Agency costs will be reduced since the firm becomes self-regulating.
Dividend policy will have a beneficial effect on the value of the firm. This is because dividend policy can be used to reduce agency problem by **reducing agency costs**. The theory implies that firms adopting high dividend payout ratio will have a higher value due to reduced agency costs.

TOPIC 11

PERSONAL FINANCIAL DECISIONS

Introduction

Personal finance defines all financial decisions and activities of an individual or household, including budgeting, insurance, mortgage planning, savings and retirement planning.

All individual financial activities fall under the purview of personal finance; personal financial planning generally involves analyzing your current financial position, predicting short-term and long-term needs and executing a plan to fulfill those need within individual financial constraints. Personal finance is a very individual activity that depends largely on one's earnings, living requirements and individual goals and desires.

Among the most important aspects of personal finance are:

- Assessing your current financial position - looking at expected cash flow, current savings, etc.
- Buying insurance to protect yourself from risk and making sure your material standing is secure
- Calculating and filing taxes
- Savings and investment
- Retirement planning

As a specialized field, personal finance is a fairly recent development, though forms of personal finance have been taught in universities and schools as "home economics" or "consumer economics" since the early twentieth century. The field was initially disregarded by male economists, as "home economics" appeared to be the purview of home-making women. However, more recently economists have repeatedly stressed widespread education in matters of personal finance as integral to the macro-economic performance of the economy.

Market theory and practice is largely guided by assuming the presence of the invisible hand: the idea that all consumers in a market economy will act rationally, or in their own self-interest. In theory, this makes market fluctuations predictable and provides assurance that their movements have been in the interest of the consumer. However, scholars in the late twentieth and early twenty-first centuries began to question that assumption, arguing that consumers actually act irrationally as a result of under-education in a more complicated and less comprehensible economy.

Many consumers simply do not have the information to make the most rational financial decisions for themselves, or they are manipulated by circumstance or misinformation to perceive a decision as being more rational than it actually is. As such, many colleges and universities have begun to offer personal finance courses, and almost all media publications regularly produce material doling out personal finance advice to consumers.

Matters of personal finance include, but are not limited to, the purchasing of financial products for personal reasons, like credit cards, life and home insurance, mortgages and retirement products. Personal banking is also considered a part of personal finance, including checking and savings accounts and new, 21st century banking products like Venmo.

A good personal financial plan covers:

1. Goals
2. Personal risk
3. Cash flow and debt management
4. Retirement planning
5. Investment planning
6. Taxes
7. Estate planning
8. Other (like college savings planning).

INFLUENCES IN PERSONAL FINANCIAL DECISIONS

Factors that influence personal financial decisions can be grouped in to two:-

1. Individual or "Micro" Factors
2. Systemic or "Macro" Factors

Individual or "Micro" Factors

The circumstances or characteristics of your life influence your financial concerns and plans. What you want and need—and how and to what extent you want to protect the satisfaction of your wants and needs—all depend on how you live and how you'd like to live in the future. While everyone is different, there are common circumstances of life that affect personal financial concerns and thus affect everyone's financial planning.

Factors that affect personal financial concerns are:-

1. Family structure
2. Health
3. Career choices
4. Age

Family Structure

Marital status and dependents, such as children, parents, or siblings, determine whether you are planning only for yourself or for others as well. If you have a spouse or dependents, you have a financial responsibility to someone else, and that includes a responsibility to include them in your financial thinking. You may expect the dependence of a family member to end at some point, as with children or elderly parents, or you may have lifelong responsibilities to and for another person.

Partners and dependents affect your financial planning as you seek to provide for them, such as paying for children's education. Parents typically want to protect or improve the quality of life for their children and may choose to limit their own fulfillment to achieve that end.

Providing for others increases income needs. Being responsible for others also affects your attitudes toward and tolerance of risk. Typically, both the willingness and ability to assume risk diminishes with dependents, and a desire for more financial protection grows. People often seek protection for their income or assets even past their own lifetimes to ensure the continued well-being of partners and dependents. An example is a life insurance policy naming a spouse or dependents as beneficiaries.

Health

Your health is another defining circumstance that will affect your expected income needs and risk tolerance and thus your personal financial planning. Personal financial planning should include some protection against the risk of chronic illness, accident, or long-term disability and some provision for short-term events, such as pregnancy and birth. If your health limits your earnings or ability to work or adds significantly to your expenditures, your income needs may increase. The need to protect yourself against further limitations or increased costs may also increase. At the same time your tolerance for risk may decrease, further affecting your financial decisions.

Career Choice

Your career choices affect your financial planning, especially through educational requirements, income potential, and characteristics of the occupation or profession you choose. Careers have different hours, pay, benefits, risk factors, and patterns of advancement over time. Thus, your financial planning will reflect the realities of being a postal worker, professional athlete, commissioned sales representative, corporate lawyer, freelance photographer, librarian, building contractor, tax preparer, professor, Web site designer, and so on. For example, the careers of most athletes end before middle age, have higher risk of injury, and command steady, higher-than-average incomes, while the careers of most sales representatives last longer with greater risk of unpredictable income fluctuations

. Most people begin their independent financial lives by selling their labor to create an income by working. Over time they may choose to change careers, develop additional sources of concurrent income, move between employment and self-employment, or become unemployed or reemployed. Along with career choices, all these changes affect personal financial management and planning.

Age

Needs, desires, values, and priorities all change over a lifetime, and financial concerns change accordingly. Ideally, personal finance is a process of management and planning that anticipates or keeps abreast with changes. Although everyone is different, some financial concerns are common to or typical of the different stages of adult life. Analysis of life stages is part of financial planning.

At the beginning of your adult life, you are more likely to have no dependents, little if any accumulated wealth, and few assets. (Assets are resources that can be used to create income,

decrease expenses, or store wealth as an investment.) As a young adult you also are likely to have comparatively small income needs, especially if you are providing only for yourself. Your employment income is probably your primary or sole source of income. Having no one and almost nothing to protect, your willingness to assume risk is usually high. At this point in your life, you are focused on developing your career and increasing your earned income. Any investments you may have are geared toward growth.

As your career progresses, income increases but so does spending. Lifestyle expectations increase. If you now have a spouse and dependents and elderly parents to look after, you have additional needs to manage. In middle adulthood you may also be acquiring more assets, such as a house, a retirement account, or an inheritance.

As income, spending, and asset base grow, ability to assume risk grows, but willingness to do so typically decreases. Now you have things that need protection: dependents and assets. As you age, you realize that *you* require more protection. You may want to stop working one day, or you may suffer a decline in health. As an older adult you may want to create alternative sources of income, perhaps a retirement fund, as insurance against a loss of employment or income.

Early and middle adulthoods are periods of building up: building a family, building a career, increasing earned income, and accumulating assets. Spending needs increase, but so do investments and alternative sources of income.

Later adulthood is a period of spending down. There is less reliance on earned income and more on the accumulated wealth of assets and investments. You are likely to be without dependents, as your children have grown up or your parents passed on, and so without the responsibility of providing for them, your expenses are lower. You are likely to have more leisure time, especially after retirement.

Without dependents, spending needs decrease. On the other hand, you may feel free to finally indulge in those things that you've "always wanted." There are no longer dependents to protect, but assets demand even more protection as, without employment, they are your only source of income. Typically, your ability to assume risk is high because of your accumulated assets, but your willingness to assume risk is low, as you are now dependent on those assets for income. As a result, risk tolerance decreases: you are less concerned with increasing wealth than you are with protecting it.

Effective financial planning depends largely on an awareness of how your current and future stages in life may influence your financial decisions.

Systemic or "Macro" Factors

Personal financial planning is influenced by:-

- business cycles,
- changes in the economy's productivity,
- changes in the currency value,
- changes in other economic indicators.

THE PERSONAL FINANCIAL PLANNING PROCESS

Fast forward:
The Personal Financial Planning Process Identifies Financial Goals and Objectives and Creates A Plan for Achieving Them

The financial planning process is very individual and personal. Financial planning should focus on all the psychological and financial factors that may have an impact on your financial goals and objectives. In short, personal financial planning provides you with a long-term strategy for your financial future, taking into consideration every aspect of your financial situation and how each affects your ability to achieve your goals and objectives.

Personal financial planning can help you construct the foundation on which to build a secure financial future.

In general, it involves five steps:

1. **Assessment**: A person's financial situation is assessed by compiling simplified versions of financial statements including balance sheets and income statements. A personal balance sheet lists the values of personal assets (e.g., car, house, clothes, stocks, bank account), along with personal liabilities (e.g., credit card debt, bank loan, mortgage). A personal income statement lists personal income and expenses.

2. **Goal setting**: Having multiple goals is common, including a mix of short- and long-term goals. For example, a long-term goal would be to "retire at age 65 with a personal net worth of $1,000,000," while a short-term goal would be to "save up for a new computer in the next month." Setting financial goals helps to direct financial planning. Goal setting is done with an objective to meet specific financial requirements.

3. **Plan creation**: The financial plan details how to accomplish the goals. It could include, for example, reducing unnecessary expenses, increasing the employment income, or investing in the stock market.

4. **Execution**: Execution of a financial plan often requires discipline and perseverance. Many people obtain assistance from professionals such as accountants, financial planners, investment advisers, and lawyers.

5. **Monitoring and reassessment**: As time passes, the financial plan is monitored for possible adjustments or reassessments.

Typical goals that most adults and young adults have are paying off credit card/student loan/housing/car loan debt, investing for retirement, investing for college costs for children, paying medical expenses.

AREAS OF PERSONAL FINANCIAL DECISIONS

Tax planning

Typically, the income tax is the single largest expense in a household. Managing taxes is not a question whether or not taxes will be paid, but *when* and *how much*. Government gives many incentives in the form of tax deductions and credits, which can be used to reduce the lifetime tax burden. Most modern governments use a progressive tax. Typically, as one's income grows, a higher marginal rate of tax must be paid. Understanding how to take advantage of the myriad tax breaks when planning one's personal finances can make a significant impact.

Retirement planning

This is the process of understanding how much it costs to live at retirement, and coming up with a plan to distribute assets to meet any income shortfall. Methods for retirement plan include taking advantage of government allowed structures to manage tax liability including: individual (IRA) structures, or employer sponsored retirement plans.

Estate planning

It involves planning for the disposition of one's assets after death. Typically, there is a tax due to the state or federal government when one dies. Avoiding these taxes means that more of one's assets will be distributed to their heirs. One can leave their assets to family, friends or charitable groups.

Financial position

It is concerned with understanding the personal resources available by examining net worth and household cash flow. Net worth is a person's balance sheet, calculated by adding up all assets under that person's control, minus all liabilities of the household, at one point in time. Household cash flow totals up all the expected sources of income within a year, minus all expected expenses within the same year. From this analysis, the financial planner can determine to what degree and in what time the personal goals can be accomplished.

Adequate protection

Adequate protection or Insurance, the analysis of how to protect a household from unforeseen risks. These risks can be divided into liability, property, death, disability, health and long-term care. Some of these risks may be self-insurable, while most will require the purchase of an insurance contract. Determining how much insurance to get, at the most cost effective terms requires knowledge of the market for personal insurance. Business owners, professionals, athletes and entertainers require specialized insurance professionals to adequately protect themselves. Since insurance also enjoys some tax benefits, utilizing insurance investment products may be a critical piece of the overall investment planning.

Investment and accumulation goals

Planning how to accumulate enough money for large purchases and life events is what most people consider to be financial planning. Major reasons to accumulate assets include,

purchasing a house or car, starting a business, paying for education expenses, and saving for retirement.inflation investment portfolio

BENEFITS OF PROPER PERSONAL FINANCIAL PLANNING

1. Increased effectiveness in obtaining, using and protecting financial resources throughout your life
2. Increased control of your financial affairs by avoiding excessive debt, bankruptcy and dependence on others
3. Improved personal relationships resulting from well-planned and effectively communicated financial decisions.
4. A sense of freedom from financial worries obtained from looking to the future, anticipating expenses and achieving personal financial goals.

TOPIC 12

ISLAMIC FINANCE

Introduction

Islamic finance, despite its name, is not a religious product. It is however a growing series of financial products developed to meet the requirements of a specific group of people.

Conventional finance includes elements (interest and risk) which are prohibited under Shari'ah law. Developments in Islamic finance have arisen to allow Muslims to invest savings and raise finance in a way which does not compromise their religious or ethical beliefs.

It is estimated that between 1.5 and 1.8 billion people (one quarter of the world's population) are Muslim. Geographically, most Muslims live in Asia (over 60%) or the Middle East and North Africa (about 20%). Despite these figures, Islamic finance is still very much a niche market, with the vast majority of Muslims, who have access to finance, using conventional financial products. The following map shows the geographical spread of the Muslim population throughout the world as a percentage of each country's population, with the highest concentrations in the darkest shades of purple.

The meaning of Islamic finance

Islamic finance is a term that reflects financial business that is not contradictory to the principles of Shari'ah. Conventional finance, particularly conventional banking business, relies on taking deposits from, and providing loans to, the public. Therefore, the banker-customer relationship is always a debtor-creditor relationship. A key aspect of conventional banking is the giving or receiving of interest, which is specifically prohibited by Shari'ah. For example a conventional bank's fixed deposit product is based on a promise by the borrower that is the bank to repay the loan plus fixed interest to the lender that is the depositor. Essentially, money deposited will result in more money which is the basic structure of an interest.

In other non-banking businesses, conventional products and services, such as insurance and capital markets could be based on elements that are not approved by Shari'ah principles such as uncertainty (Gharar) in insurance and interest in conventional bonds or securities. In the case of insurance, the protection provided by the insurer in exchange for a premium is always uncertain as to its amount as well as its actual time of happening. A conventional bond normally pays the holder of the bond the principal and interest.

Conventional practices could also involve selling or buying goods and services that are not lawful from a Shari'ah perspective. These might be non-halal foods such as pork, non-slaughtered animals or animals not slaughtered according to Islamic principles, alcohol or services related to gambling, pornography and entertainment. In short, conventional business practices could be non-compliant from a contractual structure perspective (if they are based on interest and uncertainty) and / or from a transactional perspective when they are involved in producing, selling or distributing goods and services that are not lawful according to Shari'ah.

JUSTIFICATION FOR ISLAMIC FINANCE

HISTORY OF ISLAMIC FINANCE

The financial industry has historically played an important role in the economy of every society. Banks mobilize funds from investors and apply them to investments in trade and business. The history of banking is long and varied, with the financial system as we know it today directly descending from Florentine bankers of the 14th – 17th century. However, even before the invention of money, people used to deposit valuables such as grain, cattle and agricultural implements and, at a later stage, precious metals such as gold for safekeeping with religious temples.

Around the 5th century BC, the ancient Greeks started to include investments in their banking operations. Temples still offered safe-keeping, but other entities started to offer financial transactions including loans, deposits, exchange of currency and validation of coins. Financial services were typically offered against the payment of a flat fee or, for investments, against a share of the profit.

The views of philosophers and theologians on interest have always ranged from an absolute prohibition to the prohibition of usurious or excess interest only, with a bias towards the absolute prohibition of any form of interest. The first foreign exchange contract in 1156 AD was not just executed to facilitate the exchange of one currency for another ata forward date, but also because profits from time differences in a foreign exchange contract were not covered by canon laws against usury.
In a time when financial contracts were largely governed by Christian beliefs prohibiting interest on the basis that it would be a sin to pay back more or less than what was lent, this was a major advantage.

Islamic banking is banking or banking activity that is consistent with the principles of sharia (Islamic law) and its practical application through the development of Islamic economics. As such, a more correct term for Islamic banking is **sharia compliant finance**.

Sharia prohibits acceptance of specific interest or fees for loans of money (known as *riba*, or usury), whether the payment is fixed or floating. Investment in businesses that provide goods or services considered contrary to Islamic principles (e.g. pork or alcohol) is also *haraam*("sinful and prohibited"). Although these prohibitions have been applied historically

in varying degrees in Muslim countries/communities to prevent unIslamic practices, only in the late 20th century were a number of Islamic banks formed to apply these principles to private or semi-private commercial institutions within the Muslim community.

As of 2014, sharia compliant financial institutions represented approximately 1% of total world assets By 2009, there were over 300 banks and 250 mutual funds around the world complying with Islamic principles and as of 2014 total assets of around $2 trillion were sharia-compliant. According to Ernst & Young, although Islamic Banking still makes up only a fraction of the banking assets of Muslims, it has been growing faster than banking assets as a whole, growing at an annual rate of 17.6% between 2009 and 2013, and will grow by an average of 19.7% a year to 2018

CAPITALISM

Islamic Finance and banking is as old as the religion itself with its principles primarily derived from the Quran. An early market economy and an early form of mercantilism, sometimes called *Islamic capitalism*, was developed between the eighth and twelfth centuries. The monetary economy of the period was based on the widely circulated currency the gold dinar, and it tied together regions that were previously economically independent.

A number of economic concepts and techniques were applied in early Islamic banking, including bills of exchange, partnership (*mufawada*, including limited partnerships, or *mudaraba*), and forms of capital (*al-mal*), capital accumulation (*nama al-mal*), cheques, promissory notes, (Muslim traders are known to have used the cheque or ṣakk system since the time of Harun al-Rashid (9th century) of the Abbasid Caliphate., trusts, transactional accounts, loaning, ledgers and assignments. Organizational enterprises independent from the state also existed in the medieval Islamic world, while the agency institution was also introduced during that time. Many of these early capitalist concepts were adopted and further advanced in medieval Europe from the 13th century onwards.

HALAL

In Islam, Halal is an Arabic term meaning "lawful or permissible" and not only encompasses food and drink, but all matters of daily life.

Industry sectors that generally don't manufacture or market forbidden products are considered halal, and are acceptable for Muslim investors. Some classic examples of suitable industries are:

- Chemical manufacture
- Computers and computer software
- Energy
- Telecommunications
- Textiles
- Transportation

When considering a halal investment, you need to look deeply into a company's business to discover its core source of revenue, or how it actually makes its money. Its industry sector, or

part of the economy to which it belongs, may not always tell the clear operations or dealings of a business firm.

HARAM

Islamic law identifies business activities as haram when they generate profits in unacceptable ways. Haram business activities include the manufacture or marketing of any of these products:

- Alcohol
- Gambling or gaming activities
- Conventional financial services
- Pork and pork products
- Pornography

In addition, most Shariah scholars advise against investing in tobacco companies or those involved in weapons and other defense-industry products. And many classify the entertainment industry in general as haram.

RIBA

The literal translation of the Arabic word riba is increase, addition or growth, though it is usually translated as 'usury'. While English speakers usually understand usury as the charging of an exploitative interest rate, the word 'riba' in Arabic applies to a wider range of commercial practices.

In Islamic finance, riba is commonly translated as interest rate excess. The prohibition of riba is the cornerstone of Islamic finance.

Riba symbolizes both the earning of money via a predetermined rate on a loan and social justice.

Although making profit is allowed in Islam, earning money on money is not, because there is no productive and/or trade activity creating additional wealth.

Riba creates social injustice because lenders requiring interest on loans tend to profit from the weak position of borrowers. Thus, because social justice and fairness in business are the most important parts of economic transactions, riba is prohibited by Shariah, or Islamic law.

GHARAR(Or Uncertainty)

It is defined as to knowingly expose oneself or one's property to jeopardy, or the sale of a probable item whose existence or characteristics are not certain. An example in the context of Islamic finance is advising a customer to buy shares in a company that is the subject of a takeover bid, on the grounds that the share price is likely to increase. Gharar does not apply to business risks such as investing in a company.

Gharar can appear in a number of forms. For example, to sell a non-fungible asset (such as a horse) that one does not own (to "sell short") is widely prohibited on the grounds of gharar since only the owner of the horse has the right to sell it. In the event that the seller cannot acquire the horse before it becomes deliverable to the buyer, harm of some kind may befall

the buyer. Neither can one sell an item of uncertain quality, an unborn calf for example, since the buyer and the seller do not know the precise quality of the thing that they are trading. A third example of gharar can be seen where a contract document is not drawn up in clear terms. For example if a contract of sale states in one place that the price of the object of sale is Sh.100 and in another place Sh.200, then there is uncertainty as to the price at which the parties have agreed to trade.

PRINCIPLES UNDERLYING ISLAMIC FINANCE

There are a number of key principles and prohibitions relevant to finance and commercial transactions which distinguish Islamic finance from the conventional forms.

The key Shari'ah principles which underpin Islamic finance, and have led to the creation of a separate finance industry, are as follows:

a) Prohibition on usury and interest (*riba*)

Prohibition of riba, a term literally meaning "an excess" and interpreted as "any unjustifiable increase of capital whether in loans or sales" is the central tenet of the system. More precisely, any positive, fixed, predetermined rate tied to the maturity and the amount of principal (i.e., guaranteed regardless of the performance of the investment) is considered riba and is prohibited. The general consensus among Islamic scholars is that riba covers not only Usury but also the charging of "interest" as widely practiced.

This prohibition is based on arguments of social justice, equality, and property rights. Islam encourages the earning of profits but forbids the charging of interest because profits, determined ex post, symbolize successful entrepreneurship and creation of additional wealth whereas interest, determined ex ante, is a cost that is accrued irrespective of the outcome of business operations and may not create wealth if there are business losses. Social justice demands that borrowers and lenders share rewards as well as losses in an equitable fashion and that the process of wealth accumulation and distribution in the economy be fair and representative of true productivity.

Under the Shari'ah, it is not permissible to charge, pay or receive interest. The Shari'ah does not recognize the time value of money and it is therefore not permissible to make money by lending it. Money must be used to create real economic value and it is only permissible to earn a return from investing money in permissible commercial activities which involve the financier or investor taking some commercial risk. This prohibition is the main driving force behind the development of the modern Islamic finance industry. Riba can take one of two forms: riba al-naseeyah and riba al-fadl.

1. Riba al-naseeyah is the amount of excess received by a lender in addition to the capital amount lent. This type of riba is comparable to the traditional concept of interest in conventional lending activities.
2. The second type, riba al-fadl, is excess compensation without any form of consideration in return.

In modern finance, riba al-fadl could be applicable to several exchange of commodities contracts.
The idea is that when compensation is paid, it should be justified or be set against a specific activity and the return should also be associated with a specific risk. Therefore when parties exchange commodities of similar value and one party pays excessive compensation to the other party, this is considered riba.

b) Prohibition on realizing a gain from speculation (mayseer)
It is not permissible to earn a profit from speculation. Gambling is therefore not permitted under Shari'ah. Any contracts or arrangements which involve speculation are also not permitted. That said, it is accepted under the Shari'ah that there is an element of speculation in most commercial arrangements and, unlike the absolute prohibition of interest, it is a question of the degree of speculation involved and whether the intention behind the transaction is to realise a gain from some productive effort or purely speculation.

The distinction between prohibited speculation and legitimate commercial speculation is not always clear in practice and there are examples where it can be difficult to distinguish between the two. For example, it is generally accepted that it is permissible to make an equity investment in a company engaging in a business activity that is permissible under the Shari'ah with a view to realizing future dividends and capital gains on the investment. There is of course a degree of commercial speculation involved about the future prospects of the company when an investor makes an equity investment, but whether such speculation is permissible or not would depend on the intention of the investor, i.e. was the intention to make a quick profit by speculating in the likely movement of the share price over a very short period of time (as is arguably the case with day trading), or was the decision made on the basis of careful evaluation of the company's past results and future prospects?
At the other end of the spectrum, equity derivatives such as index-linked derivatives are generally viewed as unacceptable under Shari'ah because they involve speculation on the movement of an equity index.

c) No uncertainty (gharar) in commercial transactions
Certainty of terms in any transaction is a key requirement under the Shari'ah. Again, as with speculation, a degree of commercial uncertainty is acceptable but there must not be any uncertainty about the key terms of the transaction. For example, in a transaction for the sale of assets, the sale contract should set out a clear description of the assets being sold, the sale price and the time for delivering the assets to the purchaser. Similarly, a leasing contract needs to set out clearly the assets which are being leased, the duration of the lease and the rent payable under the lease. One of the reasons that conventional insurance contracts are not considered permissible under the Shari'ah is that there is no certainty as to when a claim will be paid, given that there is no way of knowing if and when the insured event will occur.

In the context of modern day Islamic finance, key examples of Gharar are:

(a) Advising a customer to buy shares of a particular company that is the subject of a takeover bid, on the grounds that its share price can be expected to rise;

(b) Buying a house, the price of which is to be specified in the future;
(c) When the subject matter or specifications to a contract are unknown; and
(d) Deferred payment under a contract where the deferment is for an unknown period.

d) All activity must be for permitted purposes (halal)

Muslims must not engage in (or derive any benefit from) activities which are prohibited under the Shari'ah. It is therefore not permissible for Muslims to invest in businesses which engage in prohibited activities such as casinos, breweries or factories making pork products. It is also not permissible for Islamic banks to provide any financing to such businesses. However, a very strict interpretation of these rules would mean that Muslims would only be able to invest in a very limited number of businesses internationally.

For example, it would not be permissible for Muslims to invest in a hotel that serve alcohol, a food company which also manufactures pork products as part of its product range or any business that lends or borrows money at interest.

In light of the practical considerations of international commerce and in order to enable Muslim investors to participate in it, a number of prominent Shari'ah scholars have advanced the view that it is permissible for Muslims to invest in businesses or companies which are not entirely Shari'ah compliant so long as certain conditions are met. These conditions include (among other things):

(a) The principal business activity must be permissible under Shari'ah;
(b) Any income derived from prohibited activities should only form a small percentage of the overall income of the company or business.
(c) The aggregate amount of interest-bearing debt incurred by a company or business must not exceed a certain percentage of its assets or market capitalization.
(d) The accounts receivable of the company on the business must not exceed a certain percentage of its assets or market capitalization.

e) Making Money from Money is not Permissible

One of the wrong presumptions on which all theories of interest are based is that money is a commodity. It is, therefore, argued that just as a merchant can sell his commodity for a higher price than his cost, he can also sell his money for a higher price than its face value, or just as he can lease his property and can charge a rent against it, he can also lend his money and can claim interest thereupon. Islamic principles, however, do not subscribe to this presumption. Money and commodity have different characteristics and, therefore, they are treated differently.

Islamic instruments are clearly distinguishable from the interest-based financing on the following grounds.

1. Islamic finance operates differently from conventional financing where the financier gives money to his clients as an interest-bearing loan, after which he has no concern as to how the money is used by the client. In the case of Murabahah attitude, on the contrary, no money is advanced by the financier that he wishes to purchase a commodity, therefore,

Murabahah is not possible at all unless the financier creates inventory. In this manner, financing is always backed by assets.

2. In the conventional financing system, loans may be advanced for unethical purposes. A gambling casino can borrow money from a bank to develop its gambling business. A pornographic magazine or a company making nude films is as good customers of a conventional bank as a house-builder. Thus, conventional financing is not bound by any divine or religious restrictions. But the Islamic banks and financial institutions cannot remain indifferent about the nature of the activity for which the facility is required. They cannot effect Murabahah financing system for any purpose which is either prohibited in Shari`ah or is harmful to the moral health or the society;
3. It is one of the basic requirements for the validity of Murabahah that the commodity is purchased by the commodity before selling it to the customer. The profit claimed by the financier is the reward of the risk he assumes. No such risk is assumed in an interest-based loan.
4. In an interest bearing loan, the amount to be repaid by the borrower keeps on increasing with the passage of time. In Murabahah, on the other hand, a selling price once agreed becomes and remains fixed. As a result, even if the purchaser (client of the Bank) does not pay on time, the seller (Bank) cannot ask for a higher price, due to delay in settlement of dues. This is because in Shari`ah attitude there is no concept of time due of money.
5. Leasing is ethical too because the financing is offered through providing an asset having usufruct. The risk of the leased property is assumed by the lessor / financier throughout the lease period in the sense that if the leased asset is totally destroyed without any misuse or negligence on the part of the lessee, it is the financier / lessor who will suffer the loss.

SOURCES OF FINANCE IN ISLAMIC FINANCING

Islamic banks cannot charge interest on lending, therefore, they have to find other ways of financing entrepreneurs who are not 'borrowers' as the case with traditional banks but basically stand as partners to the bank. Hence Islamic banks use the term 'investments' to denote their 'borrowing' activities. These are done in basically Islamic investment instruments which fall in two groups:

a) Sharing money with the investor (participating financing and thereby sharing in the profits or losses). This includes the contracts of Musharaka and Murabaha.
b) Acting as intermediaries through a variety of sales and rental contracts. Islamic banks acquire or 'own' the goods they acquire on behalf of would-be partners before re-selling them or renting (at a higher margin).

MURABAHA

Means trade with mark-up or cost-plus sale. It is one of the most widely used instruments for short-term financing is based on the traditional notion of purchase finance. The investor undertakes to supply specific goods or commodities, incorporating a mutually agreed contract for resale to the client and a mutually negotiated margin.

Murabaha was originally an exchange transaction in which a trader purchases items required by an end user. The trader then sells those items to the end-user at a price that is calculated using an agreed profit margin over the costs incurred by the trader.

Features of Murabahah Financing

1. Murabahah is not a loan given on interest. It is the sale of a commodity for a deferred price which includes an agreed profit added to the cost.
2. Being a sale, and not a loan, the murabahah should fulfill all the conditions necessary for a valid sale.
3. Murabahah cannot be used as a mode of financing except where the client needs funds to actually purchase some commodities. For example, if he wants funds to purchase cotton as a raw material for his ginning factory, the Bank can sell him the cotton on the basis of murabahah. But where the funds are required for some other purposes, like paying the price of commodities already purchased by him, or the bills of electricity or other utilities or for paying the salaries of his staff, murabahah cannot be effected, because murabahah requires a real sale of some commodities, and not merely advancing a loan.
4. The financier must have owned the commodity before he sells it to his client.
5. The commodity must come into the possession of the financier, whether physical or constructive, in the sense that the commodity must be in his risk, though for a short period.
6. The best way for murabahah, according to Shariah, is that the financier himself purchases the commodity and keeps it in his own possession, or purchases the commodity through a third person appointed by him as agent, before he sells it to the customer. However, in exceptional cases, where direct purchase from the supplier is not practicable for some reason, it is also allowed that he makes the customer himself his agent to buy the commodity on his behalf. In this case the client first purchases the commodity on behalf of his financier and takes its possession as such. Thereafter, he purchases the commodity from the financier for a deferred price.
   His possession over the commodity in the first instance is in the capacity of an agent of his financier. In this capacity he is only a trustee, while the ownership vests in the financier and the risk of the commodity is also borne by him as a logical consequence of the ownership. But when the client purchases the commodity from his financier, the ownership, as well as the risk, is transferred to the client.
7. As mentioned earlier, the sale cannot take place unless the commodity comes into the possession of the seller, but the seller can promise to sell even when the commodity is not in his possession. The same rule is applicable to murabahah.
8. In the light of the aforementioned principles, a financial institution can use the murabahah as a mode of finance by adopting the following procedure:
   Firstly: The client and the institution sign an over-all agreement whereby the institution promises to sell and the client promises to buy the commodities from time to time on an agreed ratio of profit added to the cost. This agreement may specify the limit upto which the facility may be availed.

Secondly: When a specific commodity is required by the customer, the institution appoints the client as his agent for purchasing the commodity on its behalf, and an agreement of agency is signed by both the parties.

Thirdly: The client purchases the commodity on behalf of the institution and takes its possession as an agent of the institution.

Fourthly: The client informs the institution that he has purchased the commodity on his behalf, and at the same time, makes an offer to purchase it from the institution.

Fifthly: The institution accepts the offer and the sale is concluded whereby the ownership as well as the risk of the commodity is transferred to the client.

All these five stages are necessary to effect a valid murabahah. If the institution purchases the commodity directly from the supplier (which is preferable) it does not need any agency agreement. In this case, the second phase will be dropped and at the third stage the institution itself will purchase the commodity from the supplier, and the fourth phase will be restricted to making an offer by the client.

The most essential element of the transaction is that the commodity must remain in the risk of the institution during the period between the third and the fifth stage. This is the only feature of murabahah which can distinguish it from an interest-based transaction. Therefore, it must be observed with due diligence at all costs, otherwise the murabahah transaction becomes invalid according to Shariah.

9. It is also a necessary condition for the validity of murabahah that the commodity is purchased from a third party. The purchase of the commodity from the client himself on 'buy back' agreement is not allowed in Shariah. Thus murabahah based on 'buy back' agreement is nothing more than an interest based transaction.

10. The above mentioned procedure of the murabahah financing is a complex transaction where the parties involved have different capacities at different stages.

(a) At the first stage, the institution and the client promise to sell and purchase a commodity in future. This is not an actual sale. It is just a promise to effect a sale in future on murabahah basis. Thus at this stage the relation between the institution and the client is that of a promisor and a promise.
(b) At the second stage, the relation between the parties is that of a principal and an agent.
(c) At the third stage, the relation between the institution and the supplier is that of a buyer and seller.
(d) At the fourth and fifth stage, the relation of buyer and seller comes into operation between the institution and the client, and since the sale is effected on deferred payment basis, the relation of a debtor and creditor also emerges between them simultaneously.

All these capacities must be kept in mind and must come into operation with all their consequential effects, each at its relevant stage, and these different capacities should never be mixed up or confused with each other.

11. The institution may ask the client to furnish a security to its satisfaction for the prompt payment of the deferred price. He may also ask him to sign a promissory note or

a bill of exchange, but it must be after the actual sale takes place, i.e. at the fifth stage mentioned above. The reason is that the promissory note is signed by a debtor in favour of his creditor, but the relation of debtor and creditor between the institution and the client begins only at the fifth stage, whereupon the actual sale takes place between them.

12. In the case of default by the buyer in the payment of price at the due date, the price cannot be increased. However, if he has undertaken, in the agreement to pay an amount for a charitable purpose, he shall be liable to pay the amount undertaken by him. But the amount so recovered from the buyer shall not form part of the income of the seller / the financier. He is bound to spend it for a charitable purpose on behalf of the buyer, as will be explained later in detail.

SUKUK

Similar characteristics to that of a conventional bond with the difference being that they are asset backed, a sukuk represents proportionate beneficial ownership in the underlying asset. The asset will be leased to the client to yield the return on the sukuk.

Since fixed-income, interest-bearing bonds are not permissible in Islam, Sukuk securities are structured to comply with the Islamic law and its investment principles, which prohibit the charging of and/or paying interest. This is generally done by involving a tangible asset in the investment. For example, giving partial ownership of a property built by the investment company to the bond owner accomplishes this purpose, since the bond owner is then able to collect his profit as a rent, which is allowed under Islamic law.

Muslim jurists subject the buying and selling of debt obligations to certain conditions in order to comply with the prohibition of riba (interest), gharar (uncertainty), and maysir (gambling). In summary, the debt must be a genuine one i.e., it must not be a subterfuge to borrow money such as an asset-linked buy-back arrangement. The debtor must acknowledge the trade and creditors must be known, accessible, and sound.

Trading must be on a spot basis and not against debt. Importantly, the price cannot be other than the face value. In line with these principles, early doctrine on interest-free finance disallowed corporate or government bonds and the discounting of bills. Pressures for innovation have resulted in finding a way out of these limitations, admitting 'financial engineering'. In particular, leasing based bonds (sukuk al-ijara) have been developed. Although other sukuk have been issued, e.g sukuk al-mudaraba, sukuk al-musharaka, sukuk al-murabaha, the ijara sukuk remains the most popular.

Sukuk al-Ijara

The most commonly used sukuk structure is sukuk al-ijara. The popularity of this structure can be attributed to a number of different factors; some commentators have described it as the classical sukuk structure from which all other sukuk structures have developed, whilst others highlight its simplicity and its favour with Shari'a scholars as the key contributing factors. In the Islamic finance industry, the term "ijara" is broadly understood to mean the 'transfer of

the usufruct of an asset to another person in exchange for a rent claimed from him' or, more literally, a "lease".

In order to generate returns for investors, all sukuk structures rely upon either the performance of an underlying asset or a contractual arrangement with respect to that asset. The ijara is particularly useful in this respect as it can be used in a manner that provides for regular payments throughout the life of a financing arrangement, together with the flexibility to tailor the payment profile - and method of calculation - in order to generate a profit. In addition, the use of a purchase undertaking is widely accepted in the context of sukuk al-ijara without Shari'a objections. These characteristics make ijara relatively straightforward to adapt for use in the underlying structure for a sukuk issuance**.**

MUSHARAKA

It is a partnership where profits are shared as per an agreed ratio whereas the losses are shared in proportion to the capital/investment of each partner. In a Musharaka, all partners to a business undertaking contribute funds and have the right, but not the obligation, to exercise executive powers in that project, which is similar to a conventional partnership structure and the holding of voting stock in a limited company. This equity financing arrangement is widely regarded as the purest form of Islamic financing.

Musharaka is a partnership, normally of limited duration, formed to carry out a specific project.

It is, therefore, similar to a Western-style joint venture, and is also regarded by some as the purest form of Islamic financial instrument, since it conforms to the underlying partnership principles of sharing in, and benefiting from, risk.

Participation in a musharakacan either be in a new project, or by providing additional funds for an existing one. Profits are divided on a pre-determined basis, and any losses shared in proportion to the capital contribution. In this case, the bank enters into a partnership with a client in which both share the equity capital- and maybe even the management -of a project or deal, and both share in the profits or losses according to their equity shareholding. There are two basic types of musharaka:

i) *Sharikah al milk*: partnership based on joint ownership. This may be voluntary e.g. in the purchase of a ship, or involuntary e.g. as a result of inheritance.
ii) *Sharikah al uqud*: partnership based on a contractual relationship.

There are five subdivisions:

1. Sharikat al Mufawadah(full authority and obligation): a limited partnership with equal capital contributions, responsibility, full authority on behalf of others, and responsibility for liabilities, incurred through the normal course of business.
2. Sharikat al Inan(restricted authority and obligation): a limited partnership with unequal capital contributions. They do not share equal responsibility, and this reflects their share of the profits.
3. Sharikat al Wujuh(goodwill /credit worthiness): companies based on the reputation of one or both parties, typically small scale business.

4. Sharikat al Abdan(labour, skill and management): a company based on the contribution of human efforts, no capital contributions, again, typically small scale business.
5. *Sharikat al Mudaraba*: a *mudaraba*

Basic Shariah rules concerning Musharakah

1. Musharaka contract must be built on the condition that capital investment is specific, existent and immediately available. A contract is void if it is built on non-existent funds or debt.
2. The partners in Musharaka contract are not necessary to have equal shares participation in capital funds.
3. The participation capital must be in form of money and tangible assets.
4. It is permissible for one partner to singly handle and control Musharaka project with the mandate of the other partners, but it is not permit to imposing any conditions that prevents one or more of the partners from work. Because, Musharaka contract empowers all partners within contract to dispose of and work with the capital.
5. It is not permissible to take security for profit return on capital but it is permissible that to take a guarantee against negligent or misbehave of working partners.
6. To valid Musharaka contract, the profit share must be determined in pro rata ratio for all partners, in order to avoid uncertainty. The profit share cannot be determined in lump sum because this contravenes the requirement of Shariah law toward partnership contract.
7. Profit share ratio of each partner must be based on the proportion of their shares in capital. However, some of the jurists permit variation in profit shares whereupon it is determined by mutual agreement
8. In case of losses, each partner bears losses according to its proportion of ratio of capital investment.
9. Since partnership principle is permissible contract, not a binding contract, thus it is permissible for any partner to leave the contract whenever he/she wishes. However, the event must occur with the knowledge of the other partners because it may prejudices his/her interest.

MUDARABA

This is identical to an investment fund in which managers handle a pool of funds. The agent-manager has relatively limited liability while having sufficient incentives to perform. The capital is invested in broadly defined activities, and the terms of profit and risk sharing are customized for each investment. The maturity structure ranges from short to medium term and is more suitable for trade activities.

Mudaraba implies a contract between two parties whereby one party, the rabbal-mal (beneficial owner or the sleeping partner), entrusts money to the other party called the mudarib (managing trustee or the labour partner). The mudarib is to utilize it in an agreed manner and then returns to the rabb al-mal the principal and the pre-agreed share of the profit. He keeps for himself what remains of such profits.

The following rules must govern all Mudaraba transactions:

- The division of profits between the two parties must necessarily be on a proportional basis and cannot be a lump sum or guaranteed return.
- The investor is not liable for losses beyond the capital he has contributed. The mudarib does not share in the losses except for the loss of his time and efforts.
- Briefly, an Islamic bank lends money to a client to finance a factory, for example, in return for which the bank will get a specified percentage of the factory's net profits every year for a designated period. This share of the profits provides for repayment of the principal and a profit for the bank to pass on to its depositors. Should the factory lose money, the bank, its depositors and the borrower all jointly absorb the losses, thereby putting into practice the pivotal Islamic principle that the providers and users of capital should share risks and rewards.

Islamic banks use this instrument to finance those seeking investments to run their own enterprises or professional units, whether they be physicians or engineers or traders or craftsmen.

The bank provides the adequate finance as a capital owner in exchange of a share in the profit to be agreed upon.

It is worth noting that this mode is a high risk for the bank because the bank delivers capital to the mudarib who undertakes the work and management and the mudarib shall only be a guarantor in case of negligence and trespass. Islamic banks usually take the necessary precautions to decrease the risk and to guarantee a better execution for the mudaraba and pursue this objective with seriousness.

However, it may be noted that, under mudarabah, the liability of the financier is limited to the extent of his contribution to the capital, and no more.

DIFFERENCE BETWEEN MUSHARAKAH AND MUDARABAH

The difference between musharakah and mudarabah can be summarized in the following points:

1. The investment in musharakah comes from all the partners, while in mudarabah; investment is the sole responsibility of rabb al-mal (beneficial owner or the sleeping partner)
2. In musharakah, all the partners can participate in the management of the business and can work for it, while in mudarabah, the rabb al-mal(beneficial owner or the sleeping partner) has no right to participate in the management which is carried out by the mudarib (managing trustee or the labour partner) only.
3. In musharakah all the partners share the loss to the extent of the ratio of their investment while in mudarabah the loss, if any, is suffered by the rabbal-mal only, because the mudarib does not invest anything. His loss is restricted to the fact that his labor has gone in vain and his work has not brought any fruit to him. However, this principle is subject to a condition that the mudarib has worked with due diligence which is normally required

for the business of that type. If he has worked with negligence or has committed dishonesty, he shall be liable for the loss caused by his negligence or misconduct.

4. The liability of the partners in musharakah is normally unlimited. Therefore, if the liabilities of the business exceed its assets and the business goes in liquidation, all the exceeding liabilities shall be borne pro rata by all the partners. However, if all the partners have agreed that no partner shall incur any debt during the course of business, then the exceeding liabilities shall be borne by that partner alone who has incurred a debt on the business in violation of the aforesaid condition. Contrary to this is the case of mudarabah. Here the liability of rabb al-mal is limited to his investment, unless he has permitted the mudarib to incur debts on his behalf.
5. In musharakah, as soon as the partners mix up their capital in a joint pool, all the assets of the musharakah become jointly owned by all of them according to the proportion of their respective investment. Therefore, each one of them can benefit from the appreciation in the value of the assets, even if profit has not accrued through sales.

TYPES OF ISLAMIC FINANCIAL PRODUCTS

Islamic financial companies have developed many different products to meet customer needs and provide sharia-compliant alternatives to widely available conventional options. In this article, you discover some common categories of Islamic financial products.

In practice, a product can be developed to serve many purposes — not only to satisfy social justice demands. However, no matter the motivation for creating a product (such as to meet market demand), every Islamic financial product must exist under the framework of sharia law.

SHARIA-COMPLIANT PRODUCTS

A Shariah compliant fund is an investment vehicle fund structured in accordance to Shariah rules. Shariah funds can be managed as mutual funds, exchange trade funds or hedge funds. They are in essence common funds with an extra layer of Islamic rules integrated in the investment policies of the fund. While the funds are required to be fully compliant with Shariah rule, the companies structuring, managing and promoting the funds do not have to be necessarily Shariah compliant.

ISLAMIC INVESTMENT FUNDS

The term "Islamic Investment Fund" means a joint pool wherein the investors contribute their surplus money for the purpose of its investment to earn halal profits in strict conformity with the precepts of Islamic Shariah. The subscribers of the Fund may receive a document certifying their subscription and entitling them to the pro-rated profits actually accrued to the Fund. These documents may be called "certificates" "units" "shares" or may be given any other name, but their validity in terms of Shariah, will always be subject to two basic conditions:

First, instead of a fixed return tied up with their face value, they must carry a pro-rated profit actually earned by the Fund. Therefore, neither the principal nor a rate of profit (tied up with

the principal) can be guaranteed. The subscribers must enter into the fund with a clear understanding that the return on their subscription is tied up with the actual profit earned or loss suffered by the Fund. If the Fund earns huge profits, the return in their subscription will increase to that proportion; however, in case the Fund suffers loss, they will have to share it also, unless the loss is caused by the negligence or mismanagement, in which case the management, and not the Fund, will be liable to compensate it.

Second, the amounts so pooled together must be invested in a business acceptable to Shariah. It means that not only the channels of investment, but also the terms agreed with them must conform to the Islamic principles.

Keeping these basic requisites in view, the Islamic Investment Funds may accommodate a variety of modes of investment which are discussed below;-

Equity Fund

In an equity fund the amounts are invested in the shares of joint stock companies. The profits are mainly achieved through the capital gains by purchasing the shares and selling them when their prices are increased. Profits are also achieved by the dividends distributed by the relevant companies.

It is obvious that if the main business of a company is not lawful in terms of Shariah, it is not allowed for an Islamic Fund to purchase, hold or sell its shares, because it will entail the direct involvement of the shareholder in that prohibited business.

Similarly the contemporary Shariah experts are almost unanimous on the point that if all the transactions of a company are not in full conformity with Shariah, which includes that the company borrows money on interest nor keeps its surplus in an interest bearing account, its shares can be purchased, held and sold without any hindrance from the Shariah side. But evidently, such companies are very rare in the contemporary stock markets. Almost all the companies quoted in the present stock market or in some way involved in an activity which violates the injunctions of Shariah.

Conditions for Investment in Shares

The dealing in equity shares can be acceptable in Shariah subject to the following conditions:

1. The main business of the company is not in violation of Shariah. Therefore, it is not permissible to acquire the shares of the companies providing financial services on interest, like conventional banks, insurance companies, or the companies involved in some other business not approved by the Shariah, such as the company's manufacturing, selling or offering liquors, pork, haram meat, or involved in gambling, night club activities, pornography etc.
2. If the main business of the companies is halal, like automobiles, textile, etc. but they deposit there surplus amounts in a interest-bearing account or borrow money on interest, the shareholder must express his disapproval against such dealings, preferably by raising his voice against such activities in the annual general meeting of the company.
3. If some income from interest-bearing accounts is included in the income of the company, the proportion of such income in the dividend paid to the share-holder must be given charity, and must not be retained by him. For example, if 5% of the whole income of a

company has come out of interest-bearing deposits, 5% of the dividend must be given in charity.

4. The shares of a company are negotiable only if the company owns some non-liquid assets. If all the assets of a company are in liquid form, i.e. in the form of money that cannot be purchased or sold, except on par value, because in this case the share represents money only and the money cannot be traded in except at par.

Commodity Fund

Another possible type of Islamic Funds may be a commodity fund. In the fund of this type the subscription amounts are used in purchasing different commodities for the purpose of the resale. The profits generated by the sale are the income of the fund which is distributed pro-rated among the subscribers. In order to make this fund acceptable to Shariah, it is necessary that all the rules governing the transactions and fully complied with. For example:

1. The commodity must be owned by the seller at the time of sale, therefore, short sales where a person sells a commodity before he owns it are not allowed in Shariah.
2. Forward sales are not allowed except in the case of salam and istisna' (For their full details my book "Islamic Finance" may be consulted).
3. The commodities must be halal; therefore, it is not allowed to deal in wines, pork, or other prohibited materials.
4. The seller must have physical or constructive possession or the commodity he wants to sell. (Constructive possession includes any act by which the risk of the commodity is passed on to the purchaser).
5. The price of the commodity must be fixed and known to the parties. Any price which is uncertain or is tied up with an uncertain event renders the sale invalid.

Mixed Fund

Another type of Islamic Fund maybe of a nature where the subscription amounts are employed in different types of investments, like equities, leasing, commodities, etc. This may be called a Mixed Islamic Fund. In this case if the tangible assets of the Fund are more than 51% while the liquidity and debts are less than 50% the units of the fund may be negotiable. However, if the proportion of liquidity and debts exceeds 50%, its units cannot be traded in according to the majority of the contemporary scholars. In this case the Fund must be a closed-end Fund.

OTHER FORMS OF FUNDS

Ijarah Fund

Ijarah means leasing. In this fund the subscription amounts are used to purchase assets like real estate, motor vehicles, or other equipment for the purpose of leasing them out to their ultimate users

Murabahah Fund

Murabahah is a specific kind of sale where the commodities are sold on a cost-plus basis. This kind of sale has been adopted by the contemporary Islamic banks and financial institutions as a mode of financing. They purchase the commodity for the benefit of their

clients, then sell it to them on the basis of deferred payment at an agreed margin of profit added to the cost. If a fund is created to undertake this kind of sale, it should be a closed-end fund and its units cannot be negotiable in a secondary market.

TAKAFUL- THE ISLAMIC VERSION OF INSURANCE

The word takaful is derived from the Arabic verb kafala which simply means to take care of one's need. In other words "A" for example, guarantees to take over the liability of "B" in the event of a calamity afflicted upon the latter. Under this simple illustration it is only a one-sided relationship in the sense that only "A" would be the party that assumes the responsibility. However, following the above example, if "B" were at the same time would reciprocate to take care of the needs of "A" then a kind of joint guarantee between them is established. Therefore the pact between at least two parties agreeing to jointly guarantee one another in the event of a loss, as a consequent of being afflicted by a calamity defines the term Takaful.

LEASING- IJARA

Ijara is an exchange transaction in which a known benefit arising from a specified asset is made available in return for a payment, but where ownership of the asset itself is not transferred. The ijara contract is essentially of the same design as an installment leasing agreement. Where fixed assets are the subject of the lease, such can return to the lessor at the end of the lease period, in which case the lease takes on the features of an operating lease and thus only a part amortization of the leased asset's value results. In an alternative approach, the lessee can agree at the outset to buy the asset at the end of the lease period in which case the lease takes on the nature of a hire purchase known as ijara wa iqtina (literally, lease and ownership). Some jurists do not permit this latter arrangement on the basis that it represents more or less a guaranteed financial return at the outset to the lessor, in much the same way as a modern interest-based finance lease. The terms of ijara are flexible enough to be applied to the hiring of an employee by an employer in return for a rent that is actually a fixed wage.

Some generally agreed conditions for ijara are as follows:

a) The leased item should be transferred to the lessee on completion of the lease agreement and should be of a condition that is fit for performance of the required tasks. The lessor should transfer the leased items to the lessee in their completed form.
b) The usufruct of the leased item should have value.
c) The amount and timing of the lease payments should be agreed in advance, though the agreed schedule and amount of those payments need not be uniform.
d) The lease payment schedule becomes active upon complete acquisition of the usufruct of the leased goods, whether such usufruct is in fact enjoyed by the lessor or not.
e) The period of the lease must be specified.
f) The conditions of usage of the leased items must be stated.
g) The lessor must have full possession and legal ownership of the asset prior to leasing it.
h) The leased asset must continue to exist throughout the term of the lease. Items which are consumed in the process of usage, ammunition for instance, cannot be leased.

i) In contrast with most conventional finance leases, the responsibility for maintenance and insurance of the leased item under ijara remains that of the lessor throughout.
j) A price cannot be pre-determined for the sale of the asset at the expiry of the lease. However, lessor and lessee may agree the continuation of the lease or the sale of the leased asset to the lessee under a new agreement at the end of the initial lease period.
k) In the event of late payment of rental, the ijara may be terminated immediately.
l) The lessor may claim compensation for any damage caused to the leased assets as a result of negligence on the part of the lessee.

Three types of ijara arrangements can exist according to sharia principles:

- Lease-ending ownership/lease with ownership (ijara *wa iqtina*/ ijara *muntahia bitamleek*);- In this ijara contract, the lessee owns the leased asset at the end of the lease period. This lease contract doesn't contain any promise to buy or sell the assets, but the bank may offer a (verbal) unilateral promise of transfer of ownership or offer a purchase schedule for the asset.
- The lessee also is allowed to make a (verbal) unilateral promise to purchase the asset. The purchase price is ultimately decided by the market value of the asset or a negotiated price.
- Operating lease (operating ijara); - This type of ijara contract doesn't include the promise to purchase the asset at the end of the contract. Basically, this setup is a hire arrangement with the lessor.
- Forward lease (ijara *mawsoofa bil thimma*);- This contract is a combination of construction finance (istisna) and a redeemable leasing agreement. Because this lease is executed for a future date, its called forward leasing. The forward leasing contract buys out the project (generally a construction project) as a whole at its completion or intranches (portions) of the project.

SAFEKEEPING-WADIAH

Wadiah is safekeeping of a deposit. Such a deposit is hold in trust (Amanah). If the the depositor pays for this favour, the depositary needs to replace it in case of lost. The usage of the deposit is subject to permission of the depositor.

In practical terms the bank client accepts the usage of the deposit by the bank but is not entitled to participate in the profits or losses. The deposit is guaranteed.

Deposit in Arabic is called wadiah. The term wadiah is derived from the verb wada'a, which means to leave, lodge or deposit.

Basic rules and conditions of Wadiah (deposit)

1. Contracting parties: the depositor and the custodian must be person of sound mind.
2. The depositor is able to the take the property whenever he wants.
3. Offer (ijab) and acceptance (qabul): the majority of jurists are the view there is must be a valid offer and acceptance made in wadiah contract
4. Deposited property: it must be owned and deliverable. The item must be also form of property that can be physically possessed.

Types of Wadiah (Deposit)

Wadiah can be classified into two types:

1. Safe custody based on trust (Wadiah yad Amanah)
Originally term of deposit is amanah (trust) where it is charitable and divinely rewarded. It is basically a trust to keep. So, the custodian shall keep the deposit as his keeping and taking care of his own property. He is not responsible for any damages except due his negligence. He does not gain any profit from the contract. The permission will be required of the utility of the property. Lastly is that he is must return the property at any time upon demand of the owner.

2. Guaranteed Safe Custody (Wadiah yad Damanah)
This is the combination between safe-keeping (al wadiah) and guarantee (daman). This type deposit facilitates wider application in the Islamic banks system, particularly where the deposits are the sources of funds for banks. Some of the features are the custodian is entitled to use the deposit property for trading or any other purposes. So, has right to gain some profit derived from the utilisation of the property and the sometime he is fully responsible for the damage.

APPLICATION OF WADIAH IN ISLAMIC BANK
Saving deposit
All Islamic bank operate savings deposit account, however, the operation of these accounts vary at different banks. Generally, a saving deposit permits costumer to deposit and withdraw their money at any time and does not require a minimum balance in deposit account. It does not have maturity date; therefore the cash can be withdrawn at any time based on the costumer's demand

Current deposit
Current deposit account is a form of demand deposit that offers users safe keeping of their cash deposit, and the choice to be paid in full upon demand. Current account deposit facilities are usually offered the either individuals or companies. It also shares similar features with saving deposit as it permits for the cash to be withdrawn at any time. The main point of departure between current deposit and s saving deposit is the presence of cheque book and multi-functional card used in the former. If the account holders were to withdraw more than what is sufficient in their balance, there will also be no charges incurred.

Term deposit
A term deposit is a type of arrangement where the customer's deposits are held at a bank for fixed terms. There deposits will be then deposited to a number of investment pools where it will be invested in business activities which are accordance to the sharia. The money deposited in a term deposit can only be withdrawn at the end of the terms as stated in the

contract or by giving a predetermined number of days as notice. Usually, term deposits are short-term deposits where the maturities are within a period of one month to a few years. Islamic term deposit are commonly structured based on the commodity murabahah, wakalah unrestricted investment and mudarabah general investment

Investment deposit

The investment deposit is usually known as profit and loss sharing (PLS) account or simply, the investment account. The ratio of profit distribution between the bank and depositor shall be agreed at time of accounting opening subject to the sharia that a partner may agree on ration of profit and losses have to be shared strictly in the ratio of capital .The main point of departure between the investment deposit and both saving and current deposit is the former is normally structured based on either the mudarabah and wakalah bi istismar principle which do not entail a guarantee of either principal or the return of profit. Nevertheless, the investment account holders have an opportunity to earn more attractive returns although there is also likely hood having to bear the risk of capital losses.

ISLAMIC BANKING

The most important services offered by Islamic banks:

- Current Accounts Performed in the normal banking traditions; the only difference is that Islamic banks obtain the explicit consent of the depositors to use their funds in its other investment oriented activities. These accounts are guaranteed by the Bank.
- Saving Accounts This banking service is offered free of charge. No interest or profit is paid, but in return, some banks may give special privileges which may be given to depositors e.g. financing of small projects and sale of consumer durables or productive goods by instalment and gifts etc. This is regarded as incentive to regular savers to encourage deposits.
- Investment deposits This type of account is peculiar to Islamic banks. It is the counterpart of fixed or term deposits in traditional banking. However, there are some basic differences:
    1. Theoretically it is not a ‘deposit’ but money advanced or offered by the ‘depositor’ for the bank to invest on his behalf — on the basis of Mudaraba — the depositor being the financier (Rabul Mai) and the bank in this case being the manager (Mudarib) — or agent.
    2. It is given with the explicit approval of the depositor that it will be subject to profit and loss. (Risk-sharing being the basic characteristic of Islamic financing).
    3. The investment account holder is entitled — in the case of profit — to all the profit actually realised by the investment account (minus the banks percentage share of the profit in consideration for its managerial effort). Therefore, Islamic banks cannot determine in advance what level of return it may give to investment account holders (depositors).

Correspondent banking services Islamic banks also offer their services in the sphere of international trade finance through correspondent banking.

To do this, they establish correspondent relationship with banks to facilitate services to be done on their behalf. In case of direct money transfers, no special relationship is needed beyond availing the correspondent bank with ready balances in the current account to meet such obligations. The correspondent bank can legitimately claim its commission on these services. There is no Sharia prohibition against this.

Islamic banks, however, may ask a correspondent bank to add their confirmation to letters of credit opened on behalf of foreign suppliers to importers. (Suppliers ask for this as an added security for their payments). Either Islamic banks keep huge surpluses in their account with the correspondent bank to cover its obligations to the third party; (i.e. the suppliers), while it seeks to replenish its account with the correspondent bank. This in fact would be 'lending' by the correspondent bank for which Islamic banks would not accept to pay any interest. How then did Islamic banks solve this problem?

Foreign banks accepted dealing with Islamic banks on the basis of mutual agreements advised and accepted by simple exchange of letters to avail Islamic banks with confirmation facilities up to an agreed ceiling without charging interest should the accounts go red. In consideration, Islamic banks undertake to abide by the following:-

- To keep a reasonable amount of cash in their current account with the confirming banks.
- Endeavour to cover any debit as soon as possible. (It is part of the understanding that the Islamic bank does not ask for any reward on any balance due to it, should the other bank utilize these funds profitably. Therefore, there is no condition set by the other party if the Islamic bank account goes in the red for some time.)

As partial security, the correspondent bank would, on adding his confirmation, debit the Islamic banks with a certain 'cash margin' which it will transfer immediately to its own account. (They are authorized to do this automatically). Thus Islamic banks need in fact, only to keep sufficient balances in their correspondent banks account to cover the cash margins of the letters of credit and not the whole value of these letters.

a. All types of money transfers Domestic as well as international bank transfers are offered.
b. Collection of bills (but not their discounting).
c. Letters of credit and guarantees; - all forms of letters of credit and letters of guarantee. Islamic banks charge fees for these services. This is permissible in Islam.
d. Safes Safe custody services are also available in some Islamic banks.

ISLAMIC CONTRACTS

Despite the various differences of interpretation that exist, three categories of Islamic contract of relevance to commercial and financial activity are widely recognized in both contemporary and classical literature.

They are:

a) Contracts of exchange;
b) Contracts of charity; and
c) Contracts of investment partnership.

Other forms of contract, contracts of guarantee for example, are not dealt with in the following outline.

It is generally agreed that commercial transactions should be concluded:

a) At a price that is agreed mutually and not under duress;
b) Between parties that are sane, and that are old enough to understand the implications of their actions (in other words who are *mumayiz*);
c) Without uncertainty or deception (*gharar*) with regard, for example, to the quality of the goods or the seller's ability to deliver them. (Hence, short selling is widely and there is a general requirement that at the time of contracting the goods transacted should be in existence, under the ownership of the seller and in the seller's physical or constructive possession);
d) The contract should not be based upon a counter value that is itself prohibited under Islamic law (alcohol for consumption) for example.

INTERNATIONAL STANDARDISATION/REGULATIONS OF ISLAMIC FINANCE

The financial crisis revealed underlying weakness in the current global financial architecture. International financial regulation seeks to promote stability by preventing systemic failure, but the crisis has severely damaged the credibility of the status quo, leading to calls by many to correct its apparent failures before new ones arise. Upon this background, a variety of alternatives are being proposed and seriously considered by those who feel wronged by the current architecture.

Islamic finance is one of these alternatives. At the 2009 World Islamic Economic Forum, "Muslim presidents, prime ministers and princes called on the world to adopt Islamic financial practices to overcome the global crisis and urged Islamic banks to undertake 'missionary work' in the west to promote sharia banking."

Proponents view Islamic finance as inherently more stable than conventional finance, bolstered by the fact that Islamic institutions appear to have largely avoided the fallout of the crisis due to lack of exposure to the subprime mortgage market and the absence of complex structured products.

The need for change is undeniable, but whether Islamic finance should replace the current system is dubious. What is relevant to policymakers in the current crisis is the experience of Islamic financial regulation in comparison to conventional regulation.

The success of any global movement requires the establishment of a universal framework to regulate and stabilize activities —in the case of Islamic finance, the establishment of an Islamic financial architecture. This paper will briefly explain Islamic finance, and then consider the framework for conventional banks, highlighting the requirements of the Basel II

agreement and the proposed changes under the Basel III amendments. It will consider the Islamic Financial Services Board (IFSB), the current Islamic regulatory body, compared to the Basel II agreement, and examine the need for certain countries, specifically Bahrain, to adopt both regulatory systems. It will conclude by considering the ramifications for the future of international financial regulation

Unique Characteristics of the Regulation of Islamic Finance Institutions

- Regulation of IFIs necessitates recognition of their unique characteristics and requirements:
  - Shari'ah compliance risk, investment equity risk, displaced commercial risk
  - Need to address gaps in Basel Standards with respect to the treatment of capital.

- Need to set prudent capital adequacy requirements reflecting inherent IF risks.
  - Equity-like IF investment transactions cannot be regulated as debt-creditor conventional relationships.
  - IAHs should more appropriately be aligned somehow with shareholders.
  - This should be reflected in the risk weights assigned to individual asset components of IFIs.
  - IFIs have to allocate more resources to support the identification, assessment and management of risks

CASE FOR STANDARDISATION USING RELIGIOUS AND PRUDENTIAL GUIDANCE

Standardization means establishing universal Shari'ah standards possibly through a flexible "codification" of the Shari`ah principles and precepts, which would eliminate the need for individual decisions by Shari'ah scholars, thus reducing the problems of the shortage of Shari'ah scholars and the divergence of Shari'ah interpretation.

The Islamic finance industry is not currently codified and individual transactions need approval by Shari'ah scholars. This means that a globally recognized Islamic manuscriptis needed to help consolidate interpretations of Islamic law in order to speed up product development and reduce the risk of noncompliance with Shari'ah.

The absence of standardization has resulted in un-unified Islamic governance models, consequently 'demonstrating compliance with Shari'ah can be difficult as different institutions have different governance models by which they set, measure, and monitor their compliance.

Three organizations have been spearheading the effort to set standards followed by Islamic financial institutions (IFI's), namely the Islamic Financial Services Board (IFSB) and the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), as well as the International Islamic Financial Market (IIFM).

Benefits of standardization

Most observers of the Islamic finance industry agree that the standardization of both regulation and Shari'ah interpretation would facilitate the industry's growth.

The benefits of standardizing Shari'ah interpretation include time and cost savings, financial stability, greater transparency and consistency in financial reporting, as well as improved public confidence.

Most importantly, standardization would take the compliance burden off of product developers' shoulders. Another benefit is increasing cross-border marketability; currently a product that is considered to be compliant in Malaysia, which is reputed to be rather liberal, may be rejected by GCC scholars and/or customers.

Greater harmonization of practices among Islamic financial institutions would help the consolidation and further expansion of the industry.

Standardization could eventually eliminate the need for a Shari'ah board at every single Islamic financial institution

The lack of standardization has been forcing Islamic banks to enter into derivatives transactions with international financial institutions in order to avoid the complexities of dealing with two Shari'ah boards if they were to deal with another Islamic bank.

Challenges that face standardization

Challenges that face standardization include different interpretations of Shari'ah, diverse stages of maturity of Islamic financial markets; country-specific laws and regulatory practices, and the absence of consensus among scholars.

Concerns have also been voiced that standardization of the product development process could reduce returns, thus rendering the industry less attractive to new entrants, which would hinder innovation and competition.

ISLAMIC FINANCIAL SERVICES BOARD

The Islamic Financial Services Board is an international body based in Kuala Lumpur, Malaysia, and it began its operations in March 2003. The institution is working as international standard setting body of regulatory and supervisory agencies that have their main interest in ensuring the effective performance and stability of the Islamic financial services industry covering the area of banking, capital market, and insurance. The members of IFSB include regulatory and Supervisory authorities in addition to Islamic Development Bank, Asian Development Bank, Islamic Corporation for the Development of Private Sectors, the International Monetary Fund, World Bank, and Bank for International Settlements, and several market players and professional firms operating in different countries across the world. The primary target of IFSB is to develop uniform regulatory and transparency standards to address characteristics specific to Islamic financial institutions, keeping in mind the national financial environment, international standards, core principles, and good

practices. The IFSB has also been enhancing awareness of issues that are pertinent to or have an impact on the regulation and supervision of the Islamic financial services industry. In short, the performance of IFSB is divided into three main areas:

1) **Regulatory perspective:** It has taken an effort to promote the development of a prudent and transparent Islamic financial services industry through introducing new, or adapting existing, international standards consistent with Islamic principles. It also provides guidance on the effective supervision and regulation of institutions offering Islamic financial products; by developing Islamic criteria for identifying, measuring, managing, and disclosing risks, taking into account international standards for valuation, income, and expense calculation and disclosure.
2) **Coordination and harmonization perspective:** To harmonize Islamic financial service industry, IFSB cooperates with other relevant agencies, those who are working to setup standards for stability and the soundness of the international monetary and financial systems such as Islamic Development Bank, Asian Development Bank, Islamic Corporation for the Development of Private Sectors, the International Monetary Fund, World Bank, and Bank for International Settlements. It also gives initiative support to enhance cooperation among member countries relevant to Islamic financial instrument development, better operation and risk management efficiency.
3) **Training and research perspective:** In order to support further development of Islamic financial service industry, the IFSB also provides training programme and facilitates personal development in areas that relevant to better effective regulation of Islamic financial service industry and related markets. It is also undertaking research and surveys on the industry and creating a database of Islamic bank, financial institutions and industry experts.

The IFSB has issued standards and guiding principles to regulate the Islamic financial services industry. These standards cover the areas of risk management, capital adequacy, corporate governance, the supervisory review process, market discipline and transparency, governance for the Islamic collective investment scheme, the Shariah governance system, the development of the Islamic capital market, and the conduction of business. In addition, several standards of Islamic Takaful regulations were issued.

INTERNATIONAL ISLAMIC FINANCIAL MARKET

IIFM is the International Islamic Financial Services Industry's standard setting organization focused on the Islamic Capital & Money Market (ICMM) segment of the industry. Its primary focus lies in the standardization of Islamic financial products, documentation and related processes at the global level.

IIFM was founded with the collective efforts of the Central Bank of Bahrain, Islamic Development Bank, Bank Indonesia, Central Bank of Sudan and the Bank Negara Malaysia (delegated to Labuan Financial Services Authority) as a neutral and non-profit organization.

Besides the founding members, IIFM is supported by other jurisdictional members such as

State Bank of Pakistan, Dubai International Financial Centre, Indonesian Financial Services Authority as well as a number of regional and international financial institutions and other market participants.

ACCOUNTING AND AUDITING ORGANIZATION FOR ISLAMIC FINANCIAL INSTITUTIONS (AAOIFI)

The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) is an Islamic international autonomous non-for-profit corporate body that prepares accounting, auditing, governance, ethics and Shari'a standards for Islamic financial institutions and the industry. Professional qualification programs (notably CIPA, the Shari'a Adviser and Auditor and the corporate compliance program) are presented now by AAOIFI in its efforts to enhance the industry's human resources base and governance structures.

Objectives of AAOIFI

The objectives of AAOIFI are:

1. To develop accounting and auditing thoughts relevant to Islamic financial institutions;
2. To disseminate accounting and auditing thoughts relevant to Islamic financial institutions and its applications through training, seminars, publication of periodical newsletters, carrying out and commissioning of research and other means;
3. To prepare, promulgate and interpret accounting and auditing standards for Islamic financial institutions; and
4. To review and amend accounting and auditing standards for Islamic financial institutions.

AAOIFI carries out these objectives in accordance with the precepts of Islamic Shari'a which represents a comprehensive system for all aspects of life, in conformity with the environment in which Islamic financial institutions have developed. This activity is intended both to enhance the confidence of users of the financial statements of Islamic financial institutions in the information that is produced about these institutions, and to encourage these users to invest or deposit their funds in Islamic financial institutions and to use their services