GENERAL INTRODUCTION

Introductionto Finance is the first course in Financial Management (Corporate Finance) and an essential part of your education in Management. Finance can be defined as an aspect of economics that deals with management of money. The course teaches some of the basic concepts of Financial Economics with emphasis on Capital Budgeting or Investment Decision and Financing Decision. Students who want to major in Accounting, management and finance should, however, find this module useful as an introduction to the main principles, which will serve as a foundation for further study.

The content of the text is divided into two modules. There are five Study Sessions in Module One and five Study Sessions in module Two.The Session focus on the basic principles, underlying concepts, technical aspects, and the ways in which financial information can be used to improve the quality of decision making. To support this practical approach, there are, throughout the text, numerous illustration extracts with commentary from company reports and other source. Therefore, you are expected to study each of the Sessions carefully as you peruse the concepts and worked examples to aid good understanding of the content of each section of the study sessions.

How to Study the Modules

You should read each study session of the modules very carefully and make sure you understand the concept(s) and the underlying principle that is presented. Write down the new things you have find in each session of the module. You should pay attention to the solved examples, and attempt all the in-text questions (ITQs) and self-assessment questions (SAQs) on your own. If you encounter any difficulty, contact your course lecturer for more explanation. You should note that all answers to the (SAQs) are at the Appendix to the course text.

Note that the following:

- The symbol used to indicate In-Text Questions

- The symbol used to indicate In-Text Question/Answer



STUDY SESSION 1:
NIGERIAN FINANCIAL SYSTEM

INTRODUCTION

Money plays two important roles in the economic system. First, as a medium ofexchange, and second, as a store of wealth, money provides the foundation for a financial system. Adeveloped financial system is a necessary part of an expanding economy as it mobilizesthe financial resources of the economy to support investment and technologicaldevelopment.According to Kayode (2011) the entire Nigerian financial system may broadly be viewed as the totality of the key and financially related factors interplaying in the entire Nigerian economy. There are various financial institutions in the economy with specific functions allotted to them by the law or Act that established them and the functions performed by these institutions represent their regulatory environment or their regulatory boundary. Secondly; money and changes in the money supply are important determinants of thestate of the economic activity. The level of prices, unemployment balance of paymentsand economic growth are influenced significantly by money supply. You will also be exposed to the regulatory environment of each of the financial institutions in the economy and how it will enable the operators or intending investors to ascertain where to approach in terms of a particular investment portfolio. In this session, you will learn the whole spectrum of the regulatory framework, financial institutions, financial markets, financial instruments, other actors and participants, including the overall financial intermediation process between them.



Learning Outcomes for study Session

At the end of the Session, you will be able to;

1.1 Define the concept of financial System, institutions and regulatory environment

1.2 Discuss the various components of the financial system andillustrate graphically the structure of the Nigerian financial system

1.3 Discuss the nature of the financial system and financial market discuss the operators in some of the institutions.

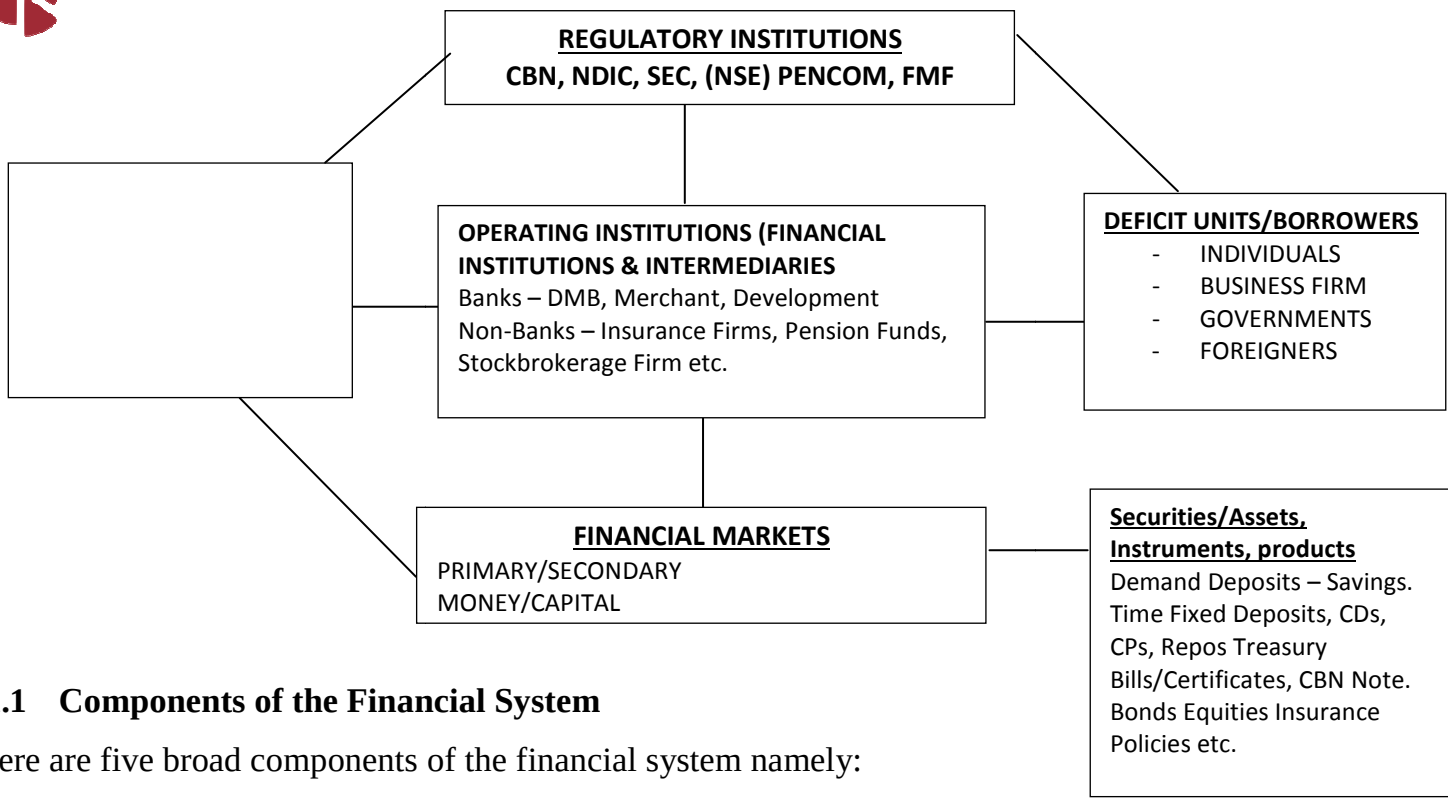
1.4 Discuss fully financial asset or securities and instruments

1.5 Distinguish between Direct and Indirect Finance.

1.1 GENERAL DEFINITION OF THE FINANCIAL SYSTEM:-

The financial system may be defined as the network of Institutions, Markets, Instruments, Savers and Borrowers, that constitute the money economy. The most basic function of the financial system is to facilitate the flow of payments in the economy between the Surplus economic units and the deficit economic units.

Fig 1: The structure of the financial system



1.1.1 Components of the Financial System

There are five broad components of the financial system namely:

i. Regulatory Institutions

ii. Operating Institutions (Financial Institutions and Intermediaries)

iii. Financial Markets

iv. Financial Securities

v. Savers or Surplus Spenders and Borrowers or deficit spenders

- There are……broad components the financial systemin an economy a. 2b.5 c. 3 d. 4
  - **ANS; B**

1.1.2 Regulatory Institutions:

At the Apex of the Financial System are the regulatory institutions who are responsible for the orderly and effective operations of the financial system. Financial system regulation is undertaken in order to ensure that the operating institutions are acting in accordance with the needs of society. Regulators control the commercial banking and other financial institutions are acting as regulate dealings in securities markets. There are two forms of regulation viz prudential Regulations and Economic Regulations.

The objective of prudential regulation is to ensure that financial institutions are able to honour their commitments to their customers, that people have access to relevant and accurate information before they enter into financial contracts and that dealings in securities is fair to all concerned. Economic regulation, on the other hand, is undertaken though the instrumentality of monetary and fiscal policies to promote economic management and to guard against monopolistic tendencies in the financial system: Regulatory Institutions in the Nigeria Financial tern are: The Central Bank of Nigeria (CBN), The Nigerian Deposit Insurance (NDIC), The Securities and Exchange Commission (SEC), Stock Exchange (NSE), which though a self-regulatory institution, is also regulated by SEC. The National Insurance Commission (NAICOM), Pension Commission (PENCOM) and the Federal Mortgage Finance Institution (FMFI). An institution is any structure or mechanism or social order governing the behaviour of a set of individuals or corporate body in order to achieve a particular aim or to ensure compliance with a given norm.Regulatory environment, on the other hand, consists of laws and regulations that have been developed by the federal, state or local government in order to ensure compliance with rules and subject institution to control of a body of rules.

From the foregoing, institution and regulatory environment means institution and their functions as provided by the law or Acts that established each of the institution.

- There are two types of financial system regulation namely economic regulation anda. prudential regulation b. Bank regulationc. Capital market regulationd. Investment regulation
  - **ANS; A**

THE REGULATORY FRAMEWORK

The concepts of the regulatory framework cover among others, the following:

a. **Company and Allied matters Act 2004:** This law covers the establishment, operational activities and winding up of corporate entities. This is provided for under section 7 of the Act.

The provisions of the Acts cover both private and public limited, hence the banks which must be public limited liability company by the provisions of BOFIA its activities is subjected to this Act.

b. **Banks and other financial institution Act (BOFIA) 2004:** The Act covers mainly the activities of financial institutions which could either be Banking Financial Institutions and Non-banks financial institutions.

c. Other regulations are:

i. **Insurance law:** This law governs the mode of operations of the insurance companies. It specifies the powers, right and duties of the insurers and their mode of operations. It also covers the activities of the insured, their right and duties.

ii. **Financial policies:** The financial policiesisvested with the power to make some regulations to ensure the smooth running of the banking industries and other financial institutions in the economy.

iii. Various statutes and promulgations, as long as it is related to financial issues.

- Which of the following is not part of business regulatory framework (a) CAMA (b) BOFIA (c) Financial bye-laws (d) Delegated legislation
  - ANS; D

1.1.3 Securities and Exchange Commission (Sec)

The evolution of Securities and Exchange Commission could be traced to 1962 when the capital issues committee (CIC) was established. The CIC was an adhoc body that assembled only when the need arose.Moreover, the committee handled or issued between 1962 – 1975 going by the relevance and increased activities of CIC by the Decree 1973 was promulgated for its creation and to provide for a supervisory authority for the Nigeria Capital Market, the Securities and Exchange Commission (SEC) was established in 1979. And its scope was expanded in 1988 Decree.

1.1.4 Functions of Securities and Exchange Commission (SEC)

1. To determine the time and amount of which securities are to be sold to the public either through offer for sale or subscription
2. Register all securities proposed to be offered for sale or subscription by the Public
3. To maintain surveillance over the securities market and ensure orderly, fair and equitable dealings in securities
4. To protect the integrity of the securities market against any abuses arising from the practice of inside trading.
5. Acting as regulatory apex organisation for the Nigerian Stock Exchange and its branches to which it would be at liberty to delegate powers.
6. To create the necessary atmosphere for the orderly growth and development of the capital market
7. To review, approve and regulate mergers, acquisitions and all forms of businesses combinations.

- The apex body regulating the Nigerian Stock Exchange Market is the…….

o **ANS; Securities and Exchange Commission**

1.1.5 The Second-Tier Securities Market (SSM)

It is the market which came into existence in 1985. It was established for the purpose of serving the need of small and medium scale industries which require long-term

financing but are unable to meet the stringent requirements for quotation on the Nigeria Stock Exchange, the first-tier market.

1.1.6 Issuing Houses

An issuing house is currently the corporate finance department of a Merchant Bank or a Stock broking firm that arranges the issuance and sale of securities on behalf of another company or government agencies.

1.1.6.1 Functions of Issuing Houses

1. It advertises its clients as to the optimum capital structure and the most suitable form of sourcing capital and the terms of the issue.
2. It prepares the issue documents
3. It helps to file application to the Nigeria Stock Exchange, if need be in price of interest rate determination.

1.1.7 The Central Securities Cleaning System (CSCS)

It was incorporated as a subsidiary of the Nigeria Stock Exchange in 1977. The CSCs rests on the concept which provides an integrated central securities deposition and clearing (electronic/book entry transfer of shares from sellers to buyers) and settlement (payment for securities purchased). All securities listed on the Nigerian Stock Exchange and their register of members are under the custody of CSCs limited. This arrangement enables all securities transaction.

1.1.7.1 Functions of CSCS Limited

- it helps to safe-guard the certificate of quoted securities
- it helps to maintain register of shareholders
- It serves as a clearing and custodian agency for local and foreign instruments.
- It Issues central securities identification numbers to stockholders.

- What is the full meaning of CSCS (a) Central Securities Clearing System (b) Control Securities Central System (c) Company Security Control System (d) Control System of Central Securities
  - ANS; A

1.2 OPERATING INSTITUTIONS

Operating institutions is an intermediary that mobilized fund from the surplus of the economy to the deficit of the economy. It performs a variety of functions namely; mobilizing savings, facilitating investment, transforming maturities, averaging and transforming risks, reducing information and transaction costs. They are also classified into two major components -Financial Institutions and Financial Intermediaries or Banking Institutions and Non-Bank financial institutions.As financial institutions, they stand between the opposing demands of the surplus and deficit economic units, to ensure smooth flow of funds from savers to borrowers (investors).

This could basically be divided or classified into two: these are as follows:

i. Bank financial institutions

ii. Non-banks financial institutions

1.2.1 Bank financial institutions

This is a component of the financial system in Nigeria. It covers the following:

a. Commercial banks

b. Merchant banks

c. Development banks

d. Specialized banks

(a) **Commercial Banks:** These banks play major role in the Nigerian Financial intermediation system. They are commonly referred to as the retail banks. Aside their primary functions of giving out short and medium term loans, they also offer other services that include overdraft facilities, safeguarding important documents, re-entering financial advice and serves as guarantors to their customers in same cases.

(b) **Merchant Banks:** They are commonly referred to as wholesale bankers for the reason that they are mainly increased to cater for corporate customers needs. Their role in the economy is to provide medium and long-term finance by engaging in

activities such as equipment leasing, loan syndication and debt financing including project financing (Kayode 2011).

(c) **Development Banks:** They occasionally provided medium terms and long term funds. Development banks perform this function by providing long-term loans for capital projects in specific areas. In Nigeria, we have the following:

- The Nigerian Industrial Development bank (NIDB)
- The Federal Mortgage Bank of Nigeria (FMBN)
- The Nigerian Bank for Commerce and Industry (NBC)
- The Nigerian Agricultural Co-operative bank (NACB) now known as Nigerian Agricultural Co-operative and Rural Development Bank limited (NACRD)
- These banks are owned by the federal government.

Following the reconstruction of the Nigeria Industrial Development Bank Limited, NIDB in 2001, which incorporated the mandate of the Nigerian Bank for Commerce and industry (NBCI), the (NBCI) appears to have lost its identity. Today, you may discuss the BNCI without seeing it as a part of NIDB.

- Which of the following is an example of development bank (a) First bank (b) Eco bank (c) World Bank (d) Federal Mortgage Bank of Nigeria
  - ANS; D

(d) Specialized Bank: These are created by the federal government to cater mainly for the banking needs of the relatively neglected segments of the Nigerian society as petty traders, peasant farmers and suppressed communities. The three main banks established to meet these ever-going requirements are the People's Bank of Nigeria (PBN) Community Banks (now micro-finance banks) and Urban Development bank (UDB) Kayode, (2011).

- BOFIA mainly governs the activities of ____ (a) Banking institutions only (b) Non-bank financial institutions only (c) both bank and non-bank financial institutions (d) the insurance company
  - ANS; C

1.2.2 Non-Bank Financial Intermediaries/ Institutions

(a) The Nigerian Stock Exchange (NSE)

(b) The second-tier securities market (SSM)

(c) Issuing Houses

(d) The Central Securities Cleaning System (CSCS)

(e) International Stock Exchange

1.2.3 The Evolution of Nigerian Stock Exchange (NSE)

The Nigerian Stock Exchange with operating branches in Lagos, Kaduna, Ibadan, Onitsha, Kano and Port Harcourt was registered on September 15 1960 at the Lagos Stock Exchange on the initiative of private sector individuals and institutions. However, the Lagos Stock Exchange commenced operation on June 5, 1961.Official and legal incognito was provided by the enactment of the Lagos Stock Exchange Act of 1961.

Today, the organisational structure of the Nigerian Stock Exchange can be broken down into three principal parts, which are as follows;

b. Ordinary members who consist of the staff of the Nigerian Bank for Commerce and industry.

c. Dealing members: These are companies that are involved in issuing work or best described as issuing houses.

d. Council of Exchange: This comprises of the members drawn from ordinary members and dealing members. This implies that it does not involve all the members in ordinary and dealing members.

1.2.3.1 Functions of Nigerian Stock Exchange

1. It provides facilities for trading to buyers and sellers of new and existing securities like shares, stocks and debentures by acting as a meeting part.
2. It facilitates the channeling of long-term friends to commerce and industry in the country.
3. It provides investments outlets to individuals and corporate bodies with surplus investible funds.
4. It provides opportunities for continued attraction of foreign capital into Nigeria for development purposes.
5. It facilitates the maintenance of fair prices for securities funded in the capital market.

6. It helps government in implementing its indigenization programmes
7. It prescribes requirements for new listings as well as regulates secondary trading activities by dealers.
8. It provided business and economic information through the daily official list on securities and performance of participants in the capital market.

1.2.4 Operators in the Stock Market

There are various operators in the stock market based on their interest and their regulatory restrictions. The following are some of the operators in the institution of the stock market.

(i)**Stockbrokers:**

They are intermediaries who bring together both providers and users of capital for commission called broking. They are vital link and members of stock exchange who are required at all time to obey the rules and regulations set for dealing members.

Functions of Stockbrokers

- They provide advisory and investment service.
- They underwrite and handle primary distribution of securities
- Stockbrokers sponsor issue to the exchange for listing
- They serve as key operators in the secondary market by helping to facilitate the sales of second hand securities.

(ii) **INVESTMENT ADVISERS:**

Unlike the stockbrokers who are members of a recognized stock exchange, many investment advisers are not. Their functions are similar, however, to those of stockbrokers but for the fact that they cannot sponsor issues to the Exchange for listing. Consequently they cannot deal in listed securities.They can, however, provide advisory and investment management services freely without any control or regulation. Now the regulation of the Securities and Exchange Commission has become operational and

makes it illegal for any person or groups to operate as investment adviser(s) without registering with the commission.

(iii) **REGISTRARS:**

Registrars keep the register of members of companies and perform other auxiliary services. They form a very important group of experts on whom successful shares transfer, dispatch of shares/stock certificate to their respective owner, allotment, issue interest and dividend warrant and forward notice of meeting together with reports and accounts to shareholders or stockbrokers and registration of shares.

(iv)**BULLS**:

They are speculators who buy shares at lower prices in anticipation that prices will rise when they will sell and make profit. A state bull who lacks cash and does not wish to sell at a loss may be able to carry the margin over into the next account by a "cash and new" deal.

(iv) **BEARS**:

The bear is the opposite of the bull. He sells share he does not own. A bear who owns the shares he sells in anticipation of a fall is called a "covered **near**". A bullish market connotes a rising market due to optimism in the economy typified by buying. A bearish market is a falling market typified by selling due to pessimism about the economy on the part of investors who are willing to take over or take gains under the safety of cash.

1.3 FINANCIAL MARKETS:

Organized financial markets provide alternative and complementary mechanisms to financial institutions and intermediaries for meeting the needs of savers and borrowers. They provide liquidity, facilitate savings mobilization, disseminate information and reduce transaction cost.Financial markets are classified into primary or New Issue Market which helps companies and governments to raise new

capital, Secondary market such as the Stock Exchange is where trading in existing securities takes place.Also we can classify the market as the money market which facilitates short-term deposit and borrowings and capital markets for long-term capital transactions

1.4 FINANCIAL ASSETS

These are the products traded in the financial markets through which the financial institutions meet the variety of conflicting needs of savers and borrowers either for safe custody, yield and investment capital. The terms financial assets, financial securities, financial instruments, and financial products can therefore be used synonymously.

1.4.1 Financial Instruments

Debt instrument is defined as a particular type of security that requires the borrower to pay the lender certain fixed Naira amounts at regular intervals until a specified time is reached. A debt instrument is an acknowledgement of debt in written agreed to pay a certain coupon on the value of the debt instruments. Therefore, debt instrument can be decomposed to captures the following as thus;

- Short term instrument
- Long term instrument

1.4.2 Short Term Debt Instrument

A short term debt instrument is one that has a maturity of less than one year from the date of issue. The four short term investment instruments available to investor in Nigeria are Treasury bills (and other short term issues of governmental bodies both domestic and foreign), Commercial paper, certificates of deposit, and bankers acceptances. They are generally highly liquid and are typically used to employ temporarily idle cash balance when better long term instruments normally offer a higher yield, but the more distant maturity date subjects the investor to a price risk (selling for less

money than was committed to acquire the instrument) if interest rates rise after purchase and the funds are needed.

1.4.3 Long Term Debt Instrument

The major forms of long term debt instruments used by corporations are bonds, notes, equipment obligation and commercial bank term loans. The major short term debt instrument issued by corporations which is available to individual investors, is commercial paper, promissory notes, simple IOUs of the issuer are typically exchange between institutions on the basis of personal agreement and are generally available to individual investors.

1.4.4 The Classification of Long Term Debt Instrument

The classifications of all financial assets and liabilities, is based primarily on the degree of liquidity and the legal characteristics of the instruments that describe the underlying creditor-debtor relationships. The liquidity of a financial instrument embraces characteristics such as negotiability, transferability, marketability, and convertibility.

In addition to classifying debt instruments by the characteristics of the financial instrument, they are also classified according to the residence of the other party to the instrument (the debtors for financial assets and the creditors for liabilities). Classification of Debt Instruments based on the definition of debt and the following are debt instruments:

- Debt securities
- Bond;
- Loans;
- Nonparticipating preferred stocks or shares
- Stripped securities
- Securities lending
- A MORTGAGE BOND

- Asset-backed securities and collateralized debt obligations; and

DEBT SECURITIES

Debt securities are negotiable financial instruments serving as evidence of a debt and it is a government securities (government bonds, government bills, central bank bonds), corporate bonds (issued by industrial entities, local governments or commercial banks), mortgage bonds and certificates of deposit. The holder of debt securities is usually entitled to payment of principal and interest, together with other contractual rights under the terms of the issue, such as the right to receive certain information. Debt securities are generally issued for a fixed term and are redeemable by the issuer at the end of that term. Debt securities may be protected by collateral or may be unsecured.

The security normally specifies a schedule for interest payments and principal repayments. Examples of debt securities are:

- Bills;
- Banker's acceptances;
- Commercial paper;
- Negotiable certificates of deposit;
- Bonds and debentures, including bonds that are convertible into shares;
- Loans that have become negotiable from one holder to another;
- Similar instruments normally traded in the financial markets.

BONDS

A bond is an interest-bearing debt security/instrument issued by corporate bodies, governments and government agencies for the financing of infrastructure or for expansion purposes. It involves a promise to make periodic investment payment to the subscribers and also the repayment or the initial amount borrowed at maturity of the bond. Repayment of the principal is usually on a steady and regular stream of payments. This is done by means of a sinking fund. Each year, certain sum of money is kept in the sinking fund, which is used to repay the debt at maturity (A

financial system usually has units with surplus funds at its disposal and deficit units with insufficient funds). Bond investment belongs to the unit with surplus funds and would include **insurance companies**, **investment and fund managers, pension fund administers, etc.)**

General Features of a Bond

- It is an IOU for a fixed amount.
- It is a debt instrument with a par/face value printed on the face of the selling document.
- It usually has a redemption / maturity date.
- It is a negotiable instrument. This means that it can be transferred to a third party either through sale at the stock exchange or through a nominal transfer to a blood relation.
- It has a market price which may be different from its face value. The initial market price is the price at which the bond was sold in the primary market, while the subsequent market price at which it is sold on a stock exchange (which is dependent on the forces of demand and supply).

THE INTEREST PAYMENT IS USUALLY TWICE A YEAR.

Bonds and debentures are securities that give the holders the unconditional right to fixed payments or contractually determined variable payments on a specified date or dates. The earning of interest is not dependent on earnings of the debtors.

Zero-coupon bonds are long-term securities that do not involve periodic payments during the life of the bond. Similar to short-term securities, zero-cou-pon bonds are sold at a discount and a single payment, that includes accrued interest, is made at maturity. Deep-discount bonds are long-term securities that require periodic coupon payments during the life of the instrument, but the amount is substantially below the market rate of interest at issuance.

Therefore, instruments with embedded derivatives are not classified as financial derivatives. If a primary instrument, such as a security or loan, contains an embedded derivative,

the instrument is valued and classified according to its primary characteristics—even though the value of that security or loan may well differ from the values of comparable securities and loans because of the embedded derivative. Examples are corporate bonds that are convertible into shares of the same corporation at the option of the bondholder. If the conversion option is traded separately, then the option is treated as a separate instrument, classified as a financial derivative, and it is not debt.

STRIPPED SECURITIES

These are securities that have been transformed from a principal amount with coupon payments into a series of zero-coupon bonds, with a range of maturities matching the coupon payment date(s) and the redemption date of the principal amount(s). The function of stripping is that investor preferences for particular cash flows can be met in ways different from the mix of cash flows of the original security.

There are **two cases of stripped securities**:

- When a third party acquires the original securities and uses them to back the issue of the stripped securities. Then, new funds have been raised and there is a new financial instrument.
- When no new funds are raised and the payments on the original securities are stripped and marketed separately by the issuer or through agents (such as strip dealers) acting with the issuer's consent. In this case, there is no new instrument.

COMMON STOCKS SECURITIES

Common stocks, which offer a potential return bounded only by company profit expectations, have generally been of greater appeal to individual investors than bonds or other fixed-income securities. Thus, individual holdings of corporate debt issues represented only 2.6 percent of their total financial assets and 26 percent of their holdings of all debt securities. The interest of individual investors in bonds increased markedly in the late 1960s and early 1970 because;

(1) Stock market price behave in an erratic fashion and rates of return on stocks were often disappointing after 1966; and

(2) A security is a fungible, negotiable instrument representing financial value. Securities have made good progress up to now. Securities may represent the largest proportion of the financial instruments. For debtors, securities are financing alternatives. Several types of securities have been created through financial innovation. We can classify securities into various categories, according to the right that the security represents: debt, equity or goods. Securities are broadly categorized into three main groups:

GOVERNMENT SECURITIES

These are securities issued by the government of a given sovereign country, and come with a guarantee for the payment of capital and interest. Government securities represent the government debt of the country. The Hungarian government has frequently issued government securities to finance the budget and refinance its expired securities. These securities may be bought by players in the economy, e.g. households. Government securities can be classified by their maturity. International methodology distinguishes two main types of government securities: Government bills with maturity of less than one year, and Government bonds with maturity of more than one year.

ASSET-BACKED SECURITIES

Asset-backed securities and collateralized debt obligations are arrangements under which payments of interest and principal are backed by payments on specified assets or income streams. This process is also described as “securitization”. Asset-backed securities are backed by various types of financial assets, for example, mortgages and credit card loans, government’s future revenue streams. First, the legal and institutional requirements to exercise creditor rights are simpler because the assets are backed by collateral—such as a property or a vehicle—and foreclosing should be less complicated than going through bankruptcy proceedings, as would be

required in the case of unsecured corporate bonds. Second, the problem of small size of the firms can be circumvented by pooling a large number of firms in a structured security. Banks can use their superior expertise in selecting credits and can avoid carrying an excessive volume of correlated risk credits in their books, especially in cases where banks have been very conservative in lending, asset-backed securities can be an effective instrument for increasing financial intermediation and investment

A MORTGAGE BOND

A mortgage bond is secured by the assets of the corporation. In the case of bankruptcy, mortgage bondholders have first claim for repayment from either liquidation or organisation proceeds mortgage bond developed from the practice of making secured loans on homes and business properties, with the loans secured by pledges of real estate. Mortgage bond are widely used by utility and railroad corporations, but Industrial Corporation generally unsecured bonds, known as debentures. Therefore, mortgage may be either open, closed, open-end mortgage.

1.5.1 Savers and Borrowers (Surplus and Deficit Economic Units)

The most important components of the Financial System are the savers and the borrowers, referred to as the ultimate users of the system. The savers are those who have money in the excess of their current need - the surplus unit. These could be individuals, business firms, governments or foreigners. The borrowers on the other hand are those who want to spend in excess of their current income - the deficit unit. Again, these could be individuals, business firms, governments or foreigners. There is a lack of correspondence between the needs of borrowers and the demands of savers. While savers emphasize safety, liquidity and marketability of their asset/securities, investors/borrowers prefer issuing long-term liabilities. The separation of the act of saving from investment as well as the differing and conflicting requirements of the surplus and deficit economic units creates opportunities for financial intermediation.

- Economic units are classified into how many groups a.2b.3c.5d.4

- ANS; B

1.5.1 The Nature of the Financial System:

The nature of the financial system can be illustrated by considering the economy composed of following economic units:

(i) Households

(ii) Business Firms and

(iii) Governments (Local, State andFederal).

Each group and the units within each group can be evaluated in terms of a budget framework i.e. the relationship between receipts and payments of the groupings above, effect the differentreceipt and payments characteristics of each group, nature of incomes and payments for each group differs. For example - households receiveincome, in the form of wages and salaries and make expenditures on food, shelters and ices. Business forms receive income from sale of goods to households, governments and other businesses while their expenditure is on cost of production, and additions to capital stockbuildings, equipment and machinery. Government income is derived through taxation, duties and fees, and expands money on social infrastructure and economic development projects.The budget position of any unit within a group as well as the entire group itself has three possible outcomes namely: BALANCED Budget position, where receipts equal expenditure, Surplus Budget where receipts exceed expenditure and DEFICIT Budget where expenditure exceeds receipts. The financial System is concerned and is relevant in an economy with surplus or deficit units. In an economy where economic units balance that Budgets the financial system has no relevance, there is, however, a grid-pro-quo between the surplus and the deficit economic units and the financial system is the mechanism" that allows the two units to engage in a financial transfer or exchange of IOUS for money.

- The level of prices, unemployment, balances of payments and economic growth are influenced by-a. Economic activity b.Money Supplyc. Exchange rate d.evaluation

- ANS; B

1.6 DIRECT VERSUS INDIRECT FINANCE

The direct versus indirect finance can be inferred from the concept of financial intermediationin which financial resources are mobilized from the surplus of the economy to the deficit of the economy. Therefore, in order to have in-depth understanding of this concepts and relationship, we define the concept of direct versus indirect finance separately as thus;

1.6.1 Direct Finance:

Direct Finance occurs when the deficit unit and the surplus unit exchange money and IOUs directly. The surplus unit and deficit unit in this case deal directly with each other "eyeball" to Eyeball" or as is often the case, through the services of specialized brokers and agents. The brokers and agents, merely act as "matchmakers" between the surplus units and the deficit it's and charge a commission fee for their services. They do not take a position in the IOUs being traded nor do they assume the risk of the deficit unit.

3. of a financial institutions, markets and institutions comprises the Financial Systema. Networkb. Totalc.Majorityd. Category

- **ANS; A**

1.6.2 Indirect Finance:

Indirect Finance involves the introduction of a financial intermediary between the surplus unit and the deficit unit. The Intermediary assumes the risk of the deficit unit and relaxes the requirement of a successful transfer of fund between surplus and deficit.

- The basic function of any financial system is to facilitate in an Economy

a.Money Supply b. Transfersc. Flow of paymentsd. Balance of Payments

- **ANS; C**

SUMMARY:

Money is of paramount importance in the economic system, the financial systems is a necessary component of a developed economy and consists of a network of institutions, markets and instruments designed to facilitate payments in an economy.The financial system is relevant only in an economy in which economic units have surplus or deficit budgets. The financial system will be irrelevant in an economy of balanced budget. There are four basic components of a financial system comprising - regulatory institutions, operating institutions, financial markets and instruments, savers and borrowers.You have learnt that legal framework is peculiar to the nature or composition of the business. For instance corporate entities are governed by the company and Allied matters Act of 2004, and the provisions of Bank and other financial institutions. Act (BOFIA). The Bank financial institutions include commercial banks, merchant banks, development banks and specialized banks. The non-bank financial institutions include the finance house, insurance companies, bureau de change, national economic reconstruction fund, natural provident fund etc. Now that you have done so well to have completed this study session, attempt both the multiple choice questions (MCQs) and the essay questions below. Find time to discuss any area that is not very clear to you with your friends and Tutor.

SELF-ASSESSMENT QUESTIONS:

Select the most appropriate option from A-D to complete each of the following statements.

1. As medium of exchange and store of value, money provides the foundation for (a)-Monetary System, (b) Exchange economy (c) Financial System (d)Barta System
2. _____ was established for the purpose of serving the need of small and medium scale industries which require long term financing but unable to meet the stringent requirement for quotation on the Nigeria stock exchanging (a) SSM (b) First tier market (c) issuing houses (d) discount houses
3. Mobilizing savings, facilitating investments and transforming maturities are the functions ofa.Financial investmentsb.Banksc.Stockbrokersd. Markets

4. Savers and Borrowers are referred to as the a.Economic unitsb.Surplus unitsc.Deficit unitsd. Ultimate users of the financial system

5. There are two types of financial system regulation namely economic regulation anda.prudential regulationb.Bank regulationc.Capitalmarket regulationd. Investment regulation

6. The financial system is not relevant in an economy where there isa. Deficit budgetb. Balanced budgetc. Surplus budgetd. Improper budget

7. Which of the following laws govern the activities of limited liability companies

(a) BOFIA (b) CAMA (c) Minister policy (d) Insurance law

8. The Ministry of finance is also vested with the power of regulating the activities of the financial system in Nigeria apart from the legislative provisions (a) true(b) false (c) indifference

9. A bank established mainly to give short term loan and accept deposit from members of the public is _____ (a) merchant banks (b) Micro finance banks (c) commercial bank (d) specialized bank

10. Security and exchange commission was established in _____ (a) 1979 (b) 1980 (c) 1988 (d) 1978

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STUDY SESSION 2

SCOPE AND METHODOLOGY IN FINANCE

INTRODUCTION

Financial managers and investors donot operate in a vacuum they make decision within a large and complex financial environment. This environment includes financial market and institutions, tax and regulatory policies, and the state of the economy. This study session is in line with the study session 1 because both environments define the financial alternativesavailable as well asfactors affecting the outcomes of various decisions. Therefore, good financial decisions require an understanding of the current direction of the economy, interest rates, and the stock market.Thus, it is crucial forthe financial managers and investors to have a good understanding of the environment in which they operate. Financial management as an area of study in finance is concerned with three central and related issues –investment, financing and dividend decisions in firms. These three decisions are worthwhile if they lead to the

maximization of the corporate value and in turn give the best streams of returns to the owners as reflected by the various valuations of their firm

In this study session, we shall dwell on the definition of finance and you should able to learn the characteristics of finance, definition of financial management, the scope of strategic financial management, identify the steps that need to be taken in strategic financial decision making and also highlight other related activities in which the financial manager is involved.



LEARNING OUTCOMES

After studying this study session, you should be able to;

2.1 define and explain thecharacteristics of finance

2.2 define financial management and state its responsibilities

2.3 highlight the steps in strategic financial decision making

2.4 identify and explain the types of financial decision in finance

2.5 statethe activities in an organisation in which financial managers are involved

2.1DEFINITION OF FINANCE

Finance is a branch of economics that deals with management of money in an organisation. Most organisation cannot exist without the involvement or availability of funds which implies money and thus, its serves as a link that makes business inter-relationship possible. Finance implies cash inflows and outflows of funds within the firm which are usually handled by financial managers. Therefore, it is germane to know the available finances for different types of investment in an organisation.

2.1.1 Characteristics of Finance in a Business Firm

- Finance enhances business growth

- It serves as a stand upon which business can be measured
- Finance is a new discipline which has grown so rapidly
- Finance links all other activities together in marketing, purchasing, production, selling and distribution towards the achievement of the corporate values.
- Finance involves the sources and allocation of funds to the productive sectors of the economy.

- The size and importance of the finance function in a business firms depend primarily on the…….. (a) firm's size (b) custom and practice of particular country (c) firm's financial structure (d) firm's profitability

o ANS; A

2.2 DEFINITIONOF FINANCIAL MANAGEMENT

Financial management may be defined as management process of planning, provision and effective utilization of funds as well as management of finances in a reporting entity. The financial management captures both **financial planning** and **control** in order to achieve the financial objectives of a firm. Financial objective will be discussedextensively in the next study session. It is one of the management functions that deal with actual and effective's sources, as well as the use of firm's financial resources. Thus, financial management helps firms to achieve itsoptimum utilization of available scare resources and the objectives of the firm.

Financial management is concerned with making decisions about the provisions and use of a firm's finances. A rational approach to decision-making necessitates a fairly clear idea of what the objectives of a decision maker are or, more importantly, of what is the objectives of those on behalf of whom the decisions are being made. We can therefore infer two issues from this definition:the source of funds and utilization,where the two key officials that are responsible for these are the treasurerandcontroller. The treasurer keeps the money, while the controller's duty extends to planning, analysis and improvements of every face of the company's operation which are measured with a financial yardstick.

2.2.1 Roles of Financial Manager

The Financial managers are faced with the following roles and responsibility expected of them. Therefore, most organisation must have the information below as the prerequisite for the objective of a financial manager.

1. **Investment Decision**: This involves profitable utilization of company's money most especially in long-term project i.e. a finance manager will advise the organisation where to invest and how much they should invested.
2. **Financing Decision**: Advising the company of the alternative source funds available to them, the relative cost, the inter-dependence of the cost and the relative risk associated with the funds.
3. **Dividend Decision:** Finance manager will advise the division of profit between dividend or re-investment of the profit into the business.
4. **Acquisition Decision:** This covers acquiring of new company or companies or merging with other companies. A decision must be taken on whether or not to acquire for the shares of the company to be valued appropriately.
5. **Working capital management:** This involves the efficient management of stocks, debtors, cash and liabilities.
6. **Financial control and reporting:** A manager must have a plan of what he wishes to achieve and works towards achieving them. He must exercise control i.e. where things are not going according to his plans, he must take prompt action to correct the variance. To aid the planning and control processes, the finance manager must supply management with regular financial reports.

- The role finance manager in the firm is principally to…….(a) provide financial information to managers and other interested parties (b) prepare periodic financial reports, statements and analysis (c) ensure the quality, relevance and timeliness of financial information (d) make decisions involving finance.

o ANS; D

2.3 STEPS IN STRATEGIC FINANCIAL DECISION MAKING

The following are the steps involved in the strategic financial decision making in the organization and this will be arrangedto establish the standard of performance in an organisation as thus;

- Determine the objectives of the company
- Identify all possible courses of action
- Collect, collate and record data in respect of each alternative course of action
- Analyze, summarize and present data in a form suitable for decision making
- Arrive at a decision taking into account quantitative, non-quantitative, social culture normative psychology factor
- Execute the decision through pragmatic and coordinated action to actualize the plan.
- Highlight the difference between planned results and actual results
- Take necessary corrective action that will improve performance or lead to the adjustment of the original plan.

- Which among these steps is not in the correct sequence in financial decision making process? (a) defining objectives which the subject of decision is intended to achieve (b) identifying the possible or alternative course of action necessary to attain the defined goals. (c) monitoring the effects of the decision (d) assembling and assessing data relevant to the decision

o ANS; C

2.4FINANCIAL MANAGEMENT DECISIONS

The financial managers also become involved in strategic planning and control of the company and make decisions relating to the following areas.

i.Investment Decision

ii,Financing Decision

iii.Dividend Decision

2.4.1 Investment Decisions

This is the process of evaluating or appraising investment criterion for all various alternative investment opportunities in terms of cost, risk and expected return to be recommended to company management. The investment decision involves determining the size and composition of company assets. We can see the results of previous investment decisions by looking at the left-hand side of a balance sheetwhich consists of current and non-current asset. Therefore, investment decision is greatly complicated where the probability of an outcome is not estimable. However, some useful techniques have been devised and developed by economists, statisticians and management experts to facilitate business decision making under the conditions of risk and uncertainty. Many of such techniques are applied to investment decision-making. The techniques and methods are many and are applied under different business conditions and for evaluating investment projects. Thus, the financial managers must invest in new assets, as needed, and remove assets that are no longer productive as well as estimate the extent of risk and uncertainty in investment decisions when it arises because financial manager should be able to forecast the possible future events of the projects with certainty.

Examples of different types of investments decisions are as follows.

a) Internal Decisions to the business enterprise

- whether to undertake new projects
- Whether to invest in new plant and machinery
- Research and development decisions
- Investment in a market or advertising campaign

b) External Decisions involving parties

- Whether to carry out a takeover or a merger involving another business
- Whether to engage in a joint venture with another enterprise

c) Disinvestment decisions

- Whether to sell off unprofitable segments of the business
- Whether to sell old or surplus plant and machinery

- The sale of subsidiary companies

2.4.2 Financial Decisions

Financing decision determines how a company's assets are financed. The right-hand side of a balance sheet shows the results of previous financing decisions. It involves current liability, long term debt, and stockholders' equity. Financial managers must make financing decisions that result in the best mix of debt and equity. Investments in assets must be financed somehow. Financial management is also concerned with the management of short-term funds and with how funds can be raised over the long term, for example by the following methods.

- Taking more credit
- Retention of profits for reinvestment in the business
- The issue of new shares to raise capital
- Borrowing, from banks or other lenders
- Leasing of assets, as an alternative to outright purchase

In the previous discussion,we examined in some detail the amount of funds investment in assets, the funds required in the immediate future (financial forecasting) and the amount of capital required financing long term capital expenditures. These areas wouldlargely correspond to the investment decision area of financial management.

To ensure that the projected investment plans can be carried out, it is necessary to plan the financing of these investments, i.e. the source of the money required to build the plant, finance the extra stocks, or, in some instances, pay the workers. Assuming that a firm has established decisions, such decision must be made by management on the types of finance to be used.As with investments financing, there are different types of finance which are generally classified into short, medium and long term sources. The following session examine the various sources and attempt to describe the risks, benefits and costs attached to each. In making a decision on sources of finance, management should try to put together an optimum blend which combines low costs with an acceptable level of financial risk.

Financial riskis the risk arising from mismatching sources with users. This can be best explained by reference to the commonly known concept of overtrading. It is distinct from the **commercial risk** faced by any firm. Rapidly expanding firms very often find themselves depending to a large extent on short term sources of finance such as trade credit or bank overdraft. For any of a number of reasons, management may suddenly discover that they have no cash and face liquidation. Possibly banks have had to refuse further accommodation, suppliers are becoming anxious about payments, debtors are not paying in time, etc. there are too many cases of firms failing which could have grown profitably if only their investments had been properly financed.

A firm is putting itself in obvious danger if it finances long term assets, such as buildings, from short term sources which may not be replaceable when they fall due. What might not be so obvious is that the firm is in an equally dangerous position if uses of long term finance for short term investments. This refers to the fact that loan capital has fixed charges annually, i.e. interest and capital repayments. If too much of this type of capital is used and the firm is unable to meet its obligations, the lenders will, in most cases, be entitled to foreclose on the business and liquidate the assets.

In general, it can be stated that the sources of finance used by a firm should be matched to the capital requirement of the firm. In particular, long term investment should be financed from long term sources with due regard to the cost and commitments attaching to these sources. Medium and short term investments should be matched to medium and short term sources available to the firm. It should be particularly noted that part of working capital investments are long term and should be financed from long term sources.

2.4.3 Dividend Decisions

The dividend decision determines how earnings after taxes are distributed to preferred and common shareholders or retained for investment and it shows how earnings after

taxes were determined, the amount of preferred stock dividends, and the relationship between earnings per share and dividends per share.

Therefore, the retention of profits was mentioned above as a financial decision. The other side of this decision is that if profits are retained, there is less to pay out to shareholders as dividends and this might deter investors. An appropriate balance needs to be struck in addressing the dividends decision: how much of the profits should the company pay out as dividends and how much should they retain for investments to provide for future growth and new investments opportunities?

- 'The financial manager should identify surplus assets and dispose of them'. Why?

Answer;

A surplus assetearns no returns for the business. The business is likely to be paying the cost of capital' in respect of the money tied up in the assets, i.e. the money which it can realize by selling it.If surplus assets are sold, the business may be able to invest the cash released in more productive ways, or alternatively it may be used to cut its liabilities by either way, it will enhance the return on capital employed for the business as a whole. Although selling surplus assets yields short-term benefits, the business should not jeopardize its activities in the medium or long term by disposing of productive capacity until the likelihood of it being required in the future has already been fully assessed.

In much of economic theory, it is assumed that the firm behaves in such a way as to maximize profits, where profit is viewed in an economist's sense. To the economist, profit is the difference between the total revenue received by the firm and the total cost which it incurs. Unlike the accountant's concept of cost, total costs by its economist's definition includes an element of reward for the risk taking of the entrepreneur, called 'normal profits'. This is because entrepreneurship is viewed by the economist as one of the factors of production which the firm makes use of. Like the other factors of productions – land, labour, and capital- entrepreneurship requires the prospects of a reward if it is to be prevented from being used elsewhere (in another firm) instead.

2.5OTHERRELATED ACTIVITIES INVOLVEDBY FINANCIALMANAGERS

The other related activities in which financial managers are involved include;

- Financial manager works with other mangers within the organisation in the preparation of the various plans with a view to producing the projected financial statements of the company.
- Financial managers match each aspect of the business plan with the financial resources available and ensure that each plan, in financial terms, falls within the total funds available. This entire overall strategic plan must be financially feasible
- Financial managers concern themselves with the events in the legal, political and socio-economic environment, since it may affect the organisation cash flow. Financial mangers work hand -in -hand with capital market operators, particularly the issuing houses and the stockbrokers. They are concerned with the effect of their decisions on the share price
- Financial managers, along with other managers, are involved in monitoring and controlling the activities of the organisation. Therefore, actual resources should be compared with the planned resources, deviations are highlighted and appropriate corrective action is taken in each case.

- The importance of business finance to the business firm as an area of study is because….(a) decisions on financing and investment are at the heart of a business firm's success or failure and once made, are not easily reversible (b) it draws from aspects of accounting economics, law, behavioral science and quantitative methods which also play important roles in business activities (c) it is relatively new subject area that is displacing accounting (d) it deals with only long-term financing and investment decisions of the business firm

o ANS; A



SUMMARY

The two major activities in which financial managers are primarily involved are investments in assets of the organisation and the financing of those assets. Thereare of course, many management decisions which fall within these two broad categories. After privatization, strategic and tactical decisions will be on the company's share and market valuation. Investment decisions, financial decisions and dividend decision are all likely to affect share price. The financial manager will need to decide upon an appropriate dividend policy and should have a larger choice of sources of financing. The choice of investments, sourcing of raw materials and components, pricing, marketing, production and staffing decisions should no longer be subjected to any government imposed constraints that previously existed. The company's capital structure will become more important and gearing levels should reflect what the market considers to be acceptable. There are also other activities of an organisation in which financial managers are involved. These are, stock market activities and the external environmental activities; particularly those external limitations which financial managers should recognize when they take decisions.Financial manger must appreciate how critical certain steps are, in the decision making process. You have also been exposed to what job opportunities are available in finance as well as specifying the primary goal of management in a corporation, and describing the function of managerial finance

SELF ASSESSMENT QUESTIONS

SAQs 2.1 (Test learning outcomes of 2.1, 2.2)

When you graduate, what job opportunities will be available to you in finance? How will you take advantage of these opportunities?

SAQs 2.2(Test learning outcomes of 2.2.1, 2.3)

Highlight various steps involved in the strategic financial decision making in a corporate organisation and state the roles of a financial management

SAQs 2.3 (Test learning outcomes of 2.2.1)

Describe the duties of the financial manager in middle-size and larger private companies. How would you fit into this structure as a financial manager?

SAQs 2.4(Test learning outcomes of 2.4,)

What are the traditional functions of managerial finance? What additional responsibilities would you have as a financial manager?

SAQs 2.5(Test learning outcomes of 2.4.1, 2.4.2 and 2.4.3)

How do the investment, financing, and dividend decisions relate to a company's financial statements?

SAQs 2.6Multiple Choice Question

1. How do you assess the following two statements?

- According to the 'separation theorem', the business should be guided by the personal consumption preferences of the shareholders when making investment decisions.
- According to the 'separation theorem', shareholders' wealth is not affected by the financing method used by the business(A) false, false (b) false, true (c) true, false (d) true, true

2. The separation theorem say that two decision making areas should be considered separately, these are (a) investment and financing (b) borrowing and consumption (c) investment and consumption (d) borrowing and lending

3. All the following are the component of disinvestment decisions except

(a) Whether to sell off unprofitable segments of the business (b) Whether to sell old or surplus plant and machinery (c) The sale of subsidiary companies (d) leasing of plants

4. Financial managers are faced with the following roles and responsibility except.

(a) Investment Decision (b) Dividend Decision (c) Acquisition Decision (d) Capital requirement decision

5. Finance manager will advise the division of profit between dividends or re-investment of the profit into the business is known as…….. (a) Financing decision (b) Dividend decision (c) Investment decision (d) Acquisition decision

6. ……is a form ofadvising the company of the alternative source funds available to them, the relative cost, the inter-dependence of the cost and the relative risk associated with the funds. (a)Financing decision (b)Dividend decision (c) Investment decision (d) Acquisition decision

7. …… is the duty extends to planning, analysis and improvements of every face of the company's operation which are measured with a financial yardstick. (a) Financial controller (b) cost manager (c) financial manager (d) treasurer (e) director

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STUDY SESSION 3

OBJECTIVES OF FINANCIAL MANAGEMENT



INTRODUCTION

The objective of an organisation is the ends which the organisation intends to achieve and which investment and financing decisions encourage it to achieve as discussed in the previous study session. The decisions identified in Study Session One will help in defining good objectives of a firm and upholding the goals. If decisions were not matched with the objectives, there would be:

a. Absence of relevant information with which the decision maker will work; and

b. No basis for financial managers' decisions

These may result in decisions being taken that may not be congruent with the organisation's objectives. Every business must have an objective(s) as a basis upon which short-term targets can be established. Without clearly defined objectives, it is impossible to;

i. Develop evaluation techniques for selecting investment opportunities

ii. Devise suitable performance measures which will ensure that the company is moving in the right direction.

Therefore, in this Study Session we shall enumerate the objective of a firm to capture the financial and non-financial objectives as well as to look at commercial objectives. You will also learn the agency problems and how to overcome this problem when such is faced by a manager,creditors and shareholders.



LEARNING OBJECTIVES

After studying this Session,you should be able to:

3.1 Explain the objectives of an organisation

3.2 Identify the various financial objectives of a business organisation

3.3 Bring out the overall financial objective which the financial managers should assume;

3.4 State and briefly explain the non-financial objectives of a business organisation

3.5 State the Objectives of a commercial organisation

3.6 Identify the roles of treasury management in an organisation

3.7 Define agency theory and analyze agency relationship between the shareholders and their managers

3.8 Identify the ways of managing agency problem and how management can achieve their objectives throughdependent upon the success of managers.

3.1 DEFINITION OF OBJCTIVES OF AN ORGANISATION

Every organisation has oneobjectivesor another they intend to achieve. Theseobjectivesare clearly achievable goals and are derived from its vision and mission statement of the organisation. There is little agreement in the literature as to what objectives of firms are even what they ought to be. However, most financial management textbooks make the assumption that the objective of a limited company is to maximize the wealth of its shareholders. The reasons for this assumption and the arguments against it will now be presented.

Vision is the long term objectives of a firm and it must align to mission statement. Examples here include the pursuit of market leadership at any cost, even profitability. This may arise because management assumes that high sales equal high profits which is

not necessarily so. In practice, the goals which a company actually pursues are affected to a large extent by the management. As a last resort, the directors may always be removed by the shareholders lack of voting power and information. These companies can, therefore, be dominated by the management.

- According to the technocrat's view of the objectives of the firm, one of the objectives pursued by firms is (a) the maximization of the utility of shareholders (b) the maximization of the wealth of shareholders (c) pursed of the technical innovations as a means of securing corporate growth (d) satisficing individual interests of members of the firm.

o ANS; C

3.2 FINANCIAL OBJECTIVES OF A FIRM

There are many objectives which a firm can pursue. It is generally accepted that there should be one overall objective with all other objectives giving support for this overall objective can be achieved. However, this objective serves as the real objective of the organisation and thus, for a business organisation, a financial objective is generally taken as the overall objective.

Financial Objectives

The financial objectives of a business organisation include, among others, the following:

a. Profit maximization
b. Profitability maximization
c. Liquidity
d. Long-term stability
e. Growth
f. Corporate wealth maximization
g. Shareholders wealth maximization

These financial objectives are further discussed as follows:

3.2.1 Profit Maximization Objective

This objective refers to accounting profits and it means that financial managers should attempt to make as much profits as possible. The essence of profit is to be able to finance all viable and to meet other exogenous costs of the firms. Financial managers tend to pursue this objective because of the fact that the ordinary shareholders are, in law, the owners of the organisation. They have ultimate control of the company and take residual profits.

However, profit maximization is a good objective but it has its deficiencies.

i. A company, for the purpose of expanding its operation may raise additional capital but the additional profits generated may not justify the additional capital obtained. In this case, profits may be rising but earnings per share may be falling.

ii. A company may be earning short-term profits at the expense of long-term profitability. For example, management may be tempted to cut down say, research and development expenditure in a particular year. This may increase the profits of that year but jeopardize future sales and profitability.

iii. Profit maximization, as an objective, ignores risk. Risk, particularly business risk, is an unavoidable fact of business life as business organisation operates into the future.

3.2.2 Profitability Maximization Objectives

The economist's assumption of profit maximization would seem to be very reasonable. Then, the company can be thinking of maximization of profit and even in companies owned by shareholders but run by non-shareholding managers, where the entrepreneur is in full managerial control of the firm, as in the case of a small owner-managed company or partnership where the manager is serving the company's (i.e. the shareholders') interests, we might expect that the profit maximization assumption should be close to the truth.

However, some writers have suggested that objectives other than profit maximization might be pursued by firms. Managers are paid to make the decision about price and output, but it is the shareholders who expect to benefit from the profits. Managers, it is argued, will not necessarily make pricing decision that will maximize profits, because:

a) They have no personal interest at stake in the size of profits earned, except in so far as they are accountable to the shareholders for the profits they make; and

b) There is no competitive pressure in the market to be efficient, minimize costs and maximize profits.

Given the divorce of management from ownership, it has been suggested that price and output decisions will be taken by managers with a managerial aim rather than the aim of profit maximization, within the constraint that managers must take some account of shareholders' interest because they are formally responsible for them and so are accountable to shareholders for their decisions.

- State one reason why a business organisation should have an overall objective

o ANS; It serves as the basis for all decisions made in the company

3.2.3 Corporate Wealth Maximization

The financial objective of a company is to maximize the value of the company, and in particular the value of its ordinary shares, we need to be able to put values on a company and its shares. How do we do it**?** The financial manager's job is to maximize the market value of the companyand seeks to ensure that investments earn a return, thereby increasing the market price of share for the benefit of shareholders. Specifically, the main financial objective of a company should be to maximize the wealth of its ordinary shareholders. Within this context, how are the wealth of shareholders and the value of a company measured?

Three possible methods for the valuation of a company might occur here.

- A balance sheet valuation, with assets valued on an on-going concern basis. Certainly, investors will look at a company's balance sheet. If retained profits rise every year, the company will be a profitable one. Balance sheet values are not a measure of 'market value,' although retained profits might give some indication of what the company could pay as dividend to shareholders.
- The valuation of a company's assets on a break-up basis. This method of valuing a business is only of interest when the business is threatened with liquidation, or when

its management is thinking about selling off individual assets (rather than a complete business) to raise cash.

- Market values. The market value is the price at which buyers and sellers will trade stocks and shares in a company. This is the method of valuation which is most relevant to the financial objectives of a company.

When shares are traded on a recognized stock market, such as the Stock Exchange, the market value of a company can be measured by the price at which shares are currently being traded. When shares are in a private company, and are not traded on any stock market, there is no easy way to measure their market value. Even so, the financial objective of these companies should be to maximize the wealth of their ordinary shareholders. The wealth of the shareholders in a company comes from dividends received and the market value of the shares. A shareholder's return on investment is obtained in the form of dividends received and capital gains from increases in the market value of his or her shares.

- Which of the following is not reason why wealth maximization provides a reasonable working basis for financial decision making than profit maximization?

(a) Recognition of shareholder perception of their realizable returns (b) Explicit consideration of the inherent risks in investment (c) recognition of the important of the distribution of returns to shareholders (d) recognition of a firms short-run prospects.

- ANS: D

3.2.4 Maximization of Shareholder Wealth

Maximization of shareholder wealth is one of the primary financial objective of a firm, where organization need to make positive net present value of estimated future cash flows and thus increase the wealth of shareholders.It's also underpins much of modern financial theory in determining what constitute the financial objectives of a firm. However, there has been some recent debate as to whether this should or can be the only true objective particularly in the context of the multinational company. While the relevance of the **wealth maximization** goal is under discussion, it might also be useful to consider the way in which this type of objective is defined,sincethis

will impact upon both parallel and subsidiary objectives. It cannot be defined as a single attainable target but rather as a criterion for the continuing allocation of the company's resources. A widely adopted approach is to seek to maximize the present value of the projected cash flows. In this way, the objective is both made measurable and can be translated into a yardstick for financial decision making.

- In terms of global business activities what is that objective that is usually regarded as an alternative to shareholders wealth maximization? (a) long-term stability (b) long-term growth (c) corporate wealth maximization (d) share price maximization (e) cost minimization

o ANS:C

3.2.5 Liquidity

This is purely a short-term objective which should be pursued only in a period of temporary economic meltdown. During this period, it is the "survival instinct" that is critical. Shareholders are not likely to put their funds in a company whose management lacks the required aggressiveness for long-term profitability and growth.

3.2.6 Long-Term Stability

Here, the company does not want to grow but to maintain its present size over a relatively long period of time. This is not good enough as it shows lack of aggressiveness on the part of the managers.

3.2.7 Growth

This implies growth in profits and assets. It is a good objective as it shows that short-term profits will not be pursued at the expense of long-term financial stability. However, this objective is deficient in some way since growth can be achieved by merely raising funds in the capital markets.

- What should be the objectives of a company with respect to the local community in which it operates?

- ANS. Behave responsively and responsibly by providing welfare facilities avoiding water and air pollution oil spillage supporting sport programmes

- What is the term given to situations where managers make decisions which are not in line with the overall strategic objectives of the business?

- ANS.Goal divergence or sub-optimization

3.2.8 Arguments Against Wealth Maximization Objective

It has been proved that a company would not only achieve profit maximization objective because of the following reasons.

1. Before profit maximization can be achieved, there must be perfect market i.e. free entry and perfect information, homogeneity of products, notification etc but because of imperfection in the system.
2. Wealth maximization is only possible when ownership and control is in the hand of a single person but in the economic environment, there is separation of ownership from control.
3. The stakeholders' view of corporate objectives is that many groups of people have a stake in what the company does. Each of these groups, which include suppliers, workers, managers, customers and governments as well as shareholders, has its own objectives, and this means that a compromise is required. For example, in the case of the multinational firm with a facility in a politically unstable third world economy, the directors may at times need to place the interests of local government and economy ahead of those of its shareholders, in part at least to ensure its own continued stability there. Before profit maximization can be achieved, there should be only stakeholder.
4. Poor economic condition. Generally, there has been a global economic recession which now makes survival objective more pressing than every other objective.

- Wealth maximisation objective should make financial managers to make decisions which balance……and…….in any organisation.

- **Answer; RISK; RETURN**

3.3 OBJECTIVES OF COMMERCIAL ORGANISATION

The most basic objective of any commercial organisation is the wealth maximization objectives of its shareholders. Maximizing the wealth of the shareholder is the same as maximizing the value of the equity. Most financial management models are based on the assumption of wealth maximization and there are at least four reasons for these assumptions:

1. Managers are morally obliged to pursue the wealth maximization of the shareholders because this is what they are paid to do.
2. Increase in the share value will enable the managers to approach other investors for more capital to expand in order to achieve alternative objectives
3. If the share of a company is allowed to fall below a reasonable level, this will attract take-over bid from the public or interested individuals (predators)
4. The “invisible hand” theory of Adam Smith states that, if the wealth of maximization objective is achieved all over the company, this will translate to economic well-being of the nation as a whole i.e. it will contribute to the growth of Gross Domestic Product (GDP).

3.3.1 Other Objectives Of Commercial Organisation

1. Market share or growth: Each company may be interested in planning increase in the market share or a reasonable percentage of the market in order to be well-unknown as a competitor in the market.
2. Profitability: Making additional profits over the years i.e. a reasonable return on capital employed is another objective companies will like to achieve.
3. Survival: Since economic recession has being the general trend in the system, most companies nowadays objectives.
4. Social responsibility: Most large companies e.g. NBC, blueship companies are more interested in satisfying their immediate environment through scholarship awards, environmental protections, safety and health employee welfare etc in order to achieve a “good corporate label”

5. Quality of service: Companies usually take high interest in the quality of service they render to their customers. Nowadays, high quality service delivery, after-sales services are being employed by companies to retain the patronage of the valued customers

- State one major problem of the objective of not-for-profit organisation.
  - ANS. (i) Measurement or (ii) Normative problem

3.4 NON-FINANCIAL OBJECTIVE

Non-financial objectives are not in direct opposition to the aim of maximizing financial value, and may even contribute to it by improving the image and popularity of the firm. As discussed in the first section of this study, recent work on corporate objectives suggests that firms should take specific account of those areas which impact only indirectly, if at all, on financial performance. The firm has responsibilities towards many groups in addition to the shareholders. However, in the short term at least they are likely to act as constraints on value maximization

Non- financial objectives could include:

i. Maintaining good relationships with customers and suppliers and acting ethically as well as to give the highest quality service to customer
ii. To be technical leaders in their field through training and career development priority
iii. Acting as a responsible member of the community within which the firm operates and to acknowledge their social responsibilities
iv. Employees: To provide good working conditions and remuneration, the opportunity for personal development, out-placement help in the event of redundancy and so on;
v. To produce an adequate return for shareholders
vi. To improve productivity, be market leaders and maintain a contented workforce
vii. Customers: To provide products of good and consistent quality, good service and communication, and open fair commercial practice;
viii. The public: To ensure responsible disposal of waste products

Non-financial objectives may often work directly to the financial benefit of the firm in the long term, but in the short term they do not often appear to compromise the primary financial objectives. There are many other interest groups that should also be included in the discussion process. At the moment, some companies now act within the framework of a clearly defined environmental policy which is regulated by a separate supervisory board.

- The ideal objectives of managers in the management of business organisation should be to: (a) minimize profits (b) maximize profits (c) maximize shareholders wealth and relegate the interest of other groups (d) maximize shareholders wealth but give due attention to other interest groups.

o ANS:D

3.5 THE ROLES OF TREASURY MANAGEMENT IN AN ORGANISATION

In its official terminology, the Chartered Institute of Management Accountants, CIMA, defined treasurership as the function concerned with the provision and use of finance as distinct from the control function.Treasurership includes provision of capital, short-term borrowing, foreign currency management, banking, collections, money market investment and sometimes, insurance. Therefore, the following are the approaches implore by the treasury manager;

1. **Corporate financial objective:** Treasury manager assists the management in formulating financial aims and strategies, treasury policies and system.
2. **Liquidity management:** Making sure that the company has the liquid funds it needs and invest any surplus fund even for every short term e.g. treasury bills, treasury certificate, commercial paper etc. to generate return. Other functions under liquidity management are; (a). working capital and money transmission management (b). banking relationship and arrangement (c). money management
3. **Funding Management:** Funding policies and procedure to be followed, sources of fund and types of funds. The treasurer has to know where funds are obtainable, for how

long, at what interest rate, whether security will be required or not and whether the interest is fixed or variable.

4. **Currency Management:** He needs to know the exposure policies and procedures, international monetary economic and exchange regulations (e.g. globalization)
5. **Corporate Finance:** Corporate finance is concerned with matters such as, raising share capital, obtaining a stock exchange listing, dividend policy, financial information from management, mergers, acquisition and business sales all these are the areas of corporate finance
6. **Related Subjects:** Risk management and insurance pension funds investment management

3.6 AGENCY THEORIES

The term ‘agency relationship’ describes the relationship which exists between a principal and a person hired by the principal to act on his behalf. The relationship between shareholders and managers may clearly be descried as one of agency: shareholders appointing managers (directors) to run the company on their behalf. Also,the relationship between shareholders and creditors is not an obvious one in agency, though it could be argued that creditors purchase goods on behalf of their customers. Therefore, an agency theory is one of the key issues that must be resolved in the organisationin order to meet up with the corporate objective of firms.

3.6.1 Agency Relationship Between The Shareholders and Their Managers

A situation where the principal (owner) appoints an agent (manager) to work on his behalf. The manager will run the affairs of the company on behalf of the shareholders in a good faith or in the best interest of stakeholders. Thus, in modern day business, there is separation of control from ownership. The management of organisation is now rest in the hand of managers while ownership rests with the shareholders. There is need for proper understanding of the type of relationship that exists between these two groups of people. The form of relationship is aimed to be an agency one. This

agency rule expects the managers to disclose all information in respect of all the operation to the duty of care in all his undertakings.

However, it is noteworthy to state here that there are conflicts of interest between shareholders' expectation and managers' performance. Often time, managers are accused of pursuing objectives that are contrary to the expectation of wealth maximization. Some of the accusations leveled against them include high remuneration packages, overseas holidays, and parks (bonuses, gifts) Owners are now advised to build-in some forms of control to enable them manages this agency problem.

3.6.2 To what extent is management dependent upon the success of manager?

It is generally assured that the prime corporate objective is the maximization of shareholders wealth. However, since the day-to-day activities of the company are conducted by its management, there is no guarantee that, where the interest of managers and shareholders conflict, managers will take decision to benefit shareholders.

The way this policy could be implemented includes:

a. **Issuing shares to managers**. In the situation, the managers become shareholders and therefore should take decisions which will benefit all shareholders as well as themselves. The disadvantage are however that managerial and shareholders, managers will choose the latter. (The managers may get greater personal benefit by ignoring shareholders' interests). Furthermore, the company cannot ensure that the managers will retain their shares;

b. **Base reward upon the achievement of financial targets**, e.g. profit, and return on capital. If the achievement of those targets maximizes shareholders wealth, then shareholders will benefit as managers endeavour to meet the targets. However, such a policy could well encourage sub-optimal decision making e.g. retention of fully depreciated fixed assets (to boost profit, ROCE etc). Furthermore, concentration is placed on short-term rather than long-term achievement. Managers may hit targets by making short-term decisions and then leave: no long-term commitment to the firm is guaranteed;

c. **Issuing managers deferred equity**. This should encourage concentration on long-term maximization of the firm's wealth (as long as the date on which the equity is obtained is not too far in the future). However, the managerial reward – in the form of shares – is not directly related to the performance of the company: the share price may be depressed on the day of the reward because of factors beyond managerial control. Furthermore, such a policy will encourage managers to retain profits for future expansion whereas shareholders may wish for constant distribution of earnings as their reward for investing funds.

- State one way in which leveraged buy-out creates conflict of interest between shareholders and managers

o Answer; Managers taking actions that might drive down the price of the company

3.6.3 Ways of Managing Agency Problem

1. Institute a management audit or additional reporting requirement
2. Relating manager's compensation to achievements of company owner-oriented target. Some of them include remuneration package scheme, executive share, option scheme, performance share in incentive scheme.
3. Pledging assets as security or collateral
4. Rewarding managerial efficiency and not managerial luck

- What is the term given to the action of managers when they try to give the impression of a rosy financial condition of the company (via the balance sheet) when it is in reality not the case?

o ANS: Window dressing

- Give one reason why threat of dismissal may not reduce conflict of interest between shareholders and managers?

o ANS: Wide dispersal of shareholders



SUMMARY

You have been able to learn how firms operate within a matrix of different objectives and constraints, both financial and non-financial objectives could include targets for operating profitability. They may conflict with the aim of maximizing value in the long-terms.

It has been suggested, therefore, that to overcome this situation and to encourage good congruence that managerial remuneration should be made dependent upon the success of the firm. You have also learned the roles of treasury management in an organisation and the ways of managing agency problem, as well as agency relationship between the shareholders and their managers

In this study session, efforts have been made to identify the objectives of commercial organisation and there are various arguments put forward for why a company ought to attempt to maximize profits. Shareholders is a powerful argument provided that the shareholders are seeking wealth maximization.in order to maximize the wealth of ordinary shareholders, it appears that each company should have its own unique decisions model. The objective of maximizing the wealth of equity shareholders seems the least objectionable

SAQs(TestingOutcomes 3.1, 3.2, 3.3, 3.4, 3.5, 3.6)

1. The objective of a non-profit organisation should be: (a) cost effectiveness (b) profit maximization (c) shareholders wealth maximization (d) value for money (e) market position
2. In a business organisation, the overall corporate objective should be the company's; (a) marketing objective (b) technological objective (c) production objective (d) financial objective (e) personnel objective
3. Which of the following should NOT be the social objective of a business organisation vis-à-vis the government? (a) pay tax as at when due (b) obey laws enacted by the National Assembly (c) keep clean environment (d) encourage tax avoidance (e) encourage tax evasion

4. Which of the following provides a good example of agency relationships in a typical business organisation? (a) employees and government (b) employees and creditors (c) creditors and shareholders (d) creditors and government (e) debtors and creditors
5. In all these specific areas of gearing there are conflicts of interest between shareholders, managers EXCEPT (a) increase gearing and increase tax-deductible interest cost (b) reduce gearing and reduce tax deductible interest cost. (c) reduce gearing and reduce risk (d) do nothing (e) increase gearing and reduce tax-deductible interest cost.
6. Which of the following is NOT a way of ensuring goal congruence in connection with Agency Theory? (a) unlimiting the activities of the board (b) threat of dismissal (c) liquidation of the company (d) threat of take-over bid (e) compensation through allocation of shares
7. Which of the following is NOT included in agency costs? (a) annual salaries of top executives (b) extra payments as perquisites (c) physical monitoring costs (d) organisation re-structuring costs (e) profits lost when managers act as agent instead of as owner-managers
8. In what way might exposure to take-over bid encourage managers to pursue goal congruence? Deterrence from, (a) making large borrowing (b) paying their employees fat salaries (c) offering good welfare packages (d) diversifying the company's operation (e) suppressing the potentials of the company
9. State one shortcoming of profit maximization as an objective
10. State one factor that might not really make performance shares to be effective as an instrument of goal congruence.

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STUDY SESSION 4

FORMS OF BUSINESS ORGANISATION



INTRODUCTION

Generally,every business firmoperates with a view of making profit. This assumption was derived from capitalism where all business ownership whether individual and by a group of individual has some important characteristic as discussed in the Study Session 1. The right to own property and use it for profit making purpose is basic to a free enterprise system. However, somecorporation does not operate with the motives of making profit. For example public corporation, for instance might just aimed at breaking even since operating capital is often sourced periodical (annually, quarterly, etc) the subvention released either to local, state or federal government. Government ownership of business nevertheless also exists in a capitalist economy. Therefore, this Study Session will capture various forms of business organisation and its advantages and advantages of sole proprietorship, partnership, public corporation, corporate society and Joint Stock Company. You will also learn the classification as well as various sources of finance in terms of durations of financing short term finance medium term finance and long term finance.



LEANING OUTCOMES

After studying this Study Session, you should be able to:

4.1 Define sole *proprietorship,* state its advantages and disadvantages

4.2 Define partnership and identifyits various types

4.3 Highlight the advantages and disadvantages of partnership

4.4.1 Define Joint Stock Company and state its advantages and disadvantages

4.4.2 Explainsothersvarious types of company and it component

4.5 Define cooperatives society and statesits advantages and disadvantage

4.6 Have anin-depth knowledge of public enterprises, its characteristics and formation

4.1 SOLE PROPRIETORSHIP OR A TRADER

A S**ole Proprietorship** is an unincorporated business owned by one individual. Going into business as a sole proprietor is easy – one merely begins business operations and it serves as most common form of organisation. Thus, this is normally the type of organisation used for small businesses and enterprises; it is sometimes the legal form of medium sized business. The sole trader type of organisation is extremely easy to form and there are no legislative controls on its formation apart from the necessity to register a business name. However, in Nigeria, all the smallest business normally must be licensed by a governmental unit. Business firms are organized and structured in different ways to suit the circumstances of operation of individual businesses. Sole ownership is a useful form of organisation for small business and is extensively used by owners of small shops.

The sole trader has total independence and the advantage that the business is owned, operated and controlled by one individual who can take all the decisions regarding his business. The total responsibility for the business rests with him and his fortunes are dependent on the success or failure of the business. If the business fails the sole trader is totally responsible for the debts of the business and cannot protect any of his own assets against the creditors of the business. Such businesses find difficulty in arranging the finance for expansion as there are basically only three sources of such finance – the personal funds of the sole trader, his borrowing power and accumulated profits which he does not draw from the business. These three sources are usually very limited. A further problem in the expansion of a sole trader arises from the necessity to spread the weight of decision taking to executives who do not carry total responsibility. Difficulties also arise in this form of organisation where they share in responsibility or decision taking.

4.1.1 Advantages of Sole Proprietorship

- It is easily and inexpensively formed in term of the amount of capital required which is so minimal that no formal statement of ownership is required
- It is subject to few government regulations. The sole proprietor are free from government control to a greater extent than any form of business ownership.
- The business avoids corporate income taxes
- Ownership of all profit goes directly to one individual. In partnership at least one other person will receive a portion of the profits even though it might be a very small share
- Freedom and promptness of action is mostly applicable to the sole proprietor in terms of quick decision making process
- Personal incentives and satisfaction if their business are successful, the individual owners enjoy a sense of accomplishment that cannot be matched when the glory must be shared with others.
- Secrecy in respect of information to its rivals firms trigger profit.

4.1.2 Limitations of a Sole Proprietorship

The following are the important limitation for a sole proprietorship

- It is difficult for a sole proprietorship to obtain large sum of capital and the only sources of fund is by borrowing from friends as well as the amount one has
- The proprietor has unlimited personal liability for the business debt which can result to losses that exceed the money he or she has invested in the company
- Lack of continuity because the life of business organized as a proprietorship is limited to the life span of the individual for small business operations.
- Lack of opportunity for employees to becomes part of the management of the business even if the employer decided to increase its profit, until he becomes the partners of the firms.

- Difficulty of the management in term of assuming responsibility for managing such diverse tasks as purchasing, merchandising, extending credit, financing, and employing personnel.

However, businesses are frequently started as proprietorships and converted to corporations when their growth causes the disadvantages of being a proprietorship outweigh the advantages.

- A sole proprietorship form of business organisation has a number of advantages. Which of these is not among its advantages over a limited liability company or corporation? (a) Ownership of all profit by the owner or proprietor (b) Low organisational costs (c) tax savings (d) unlimited liability

o ANS:D

4.2 PARTNERSHIP

A partnership is an association of two or more persons carrying on a business in common with a view to profit. Legally, its membership may not be more than twenty unless in the case of Banks. Therefore, a partnership business is an unincorporated business. Also, as the case of the sole trader the liability of the partners for the debts and obligations of the partnership is unlimited and this further extends to all their private assets. Examples of a partnership form of business are a common form of business ownership for brokerage firms that sell securities, insurance brokers, accounting and auditing firms, law firms etc

4.2.1 The Partnership Contract

Partnership contract is an agreement between two or more people which is enforceable by law. Partnership contract is the most desirable agreement although usually it is not necessary that the agreement between two parties be written and signed. Such a contract is known as articles of partnership which will guard the business and among the partners at a future date. The partnership agreement must contain in the partnership deed and this agreement in term of how profit and loss will the shared,

the partners' interest on capital and on partners drawings, the salaries of each partners as well as how to admit new partner etc.

In law each partners carriers full powers to commit the partnership e.g. in the purchase of goods, and even though partners may agree that these powers might be limited, there is no way in which this could be notified validly to third parties. Since all partners are liable for the debts of the firm each partner must have complete trust in the way in which the other partner conducts business.

Partner usually are seen to have a blend of dissimilar skills and it is quite usual to find, say three partners, one a marketing man, one with production or technical skills and one with a financial background. There is a high possibility, however, of disagreement developing between partners and the possible break-up of the firm. This may be covered to some extent by the Deed of partnership but this cannot cover all possible situations.

4.2.2 Types of Partnership

The common provisions of types of partnership are discussed below:

1. General partnership where each partner contributes an agreed amount of capital is an agent of the partnership and has full liability for all debts. Shares are not transferable.
2. Limited partnerships have been widely used in recent years as an ownership form for highly speculative undertakings such as drilling for oil or operating cattle feeding lots. Where there is at least one general partner and any number of limited partners. Limited partners are only liable for the amounts of capital they have subscribed. They cannot take an active part in the business. Limited partnerships are rarely used.Members of a limited partnership who do not assume responsibility for the debts beyond the amount of their investment are limited or special partners.
3. Partners are defining as individuals who comprise a partnership and are also known as co-partners. Theirpartnership have greater access to capital than sole traders but the limitations set by the availability of additional partners' capital, borrowing powers and profit still exist. The sharing of responsibility for the firm among a number of

partners allows a larger type of firm to emerge under this form of organisation than under that of the sole trader.

- In the absence of no agreement partner, profit or loss will be shared according to...
  - ANS. The capital contributed by the partners
- The liability of a limited partner is……
  - ANS Limited to the amount of capital contributed to the partners

4.3.1 Advantages of Partnership Business

All forms of unincorporated business, including partnership share some advantages when contrasted with incorporated forms of business ownership. A partnership can be organized as easily as a sole proprietorship share some advantages when satisfy

- Larger amount of capital can easily be doubled, trebled or otherwise increased by bringing in additional owners.
- Credible credit standing is achieved since the partners would enjoy the highest credit standing
- Retention of valuable employees through the retaining the services of a valuable employee by making him a partner
- Combining the judgment and managerial skills of two or more people about the proposed actions and a wiser course of procedure may result.
- All the members put their best interest in the business, since each general partner is liable for the actions of the other partners

4.3.2 Limitation of Partnership Business

- Partnership operates under different degrees of formality, ranging from informal oral understandings to formal agreements.
- Partnership operate on a low cost and ease of formation
- The tax treatment of a partnership is similar to that for proprietorships.

Disadvantages

- Unlimited liability of the partners because all general partners is liable personally for the partnership debts.

- Lack of continuity: if a partner dies or withdraws from the business, the partnership is dissolved. Also, if a partner becomes mentally impaired or takes out bankrupt papers, the business is dissolved.
- Difficulty of raising large amount of capital as compared to incorporated business with it is registered.

- The terms and conditions of a partnership agreement are containing in……..
  - ANS: PARTNERSHIP DEED

4.4 JOINT STOCK COMPANIES

A joint stock companies was important in the early development of Nigeria but has now been almost replaced by the corporation. It was formed by article of association, not Joint stock registered company is a corporate body which can sue and be sued under its own name i.e. it is a legal entity. The companies Act provides the method of incorporation for joint stock companies. The two major divisions of registered companies under the joint stock in the sub-sessions are:

4.4.1 Private Companies

Private companies are generally family businesses. The main features of a private company are:

a. It has between two and fifty members. A minimum of two shareholders is necessary for incorporation

b. The right of transfer of shares is restricted

c. Business can commence immediately on incorporation whereas a public company has to comply with a number of formalities.

d. Copies of its accounts do not have to be filed for public inspection – publicity therefore is avoided

e. The company is prohibited from inviting the public to subscribe for its shares or debentures.

4.4.2 Public Companies

The main features of a public company are:

a. A minimum of seven persons is required to incorporate a public company. The maximum number is governed by the number of shares which the company proposes to issue.

b. Shares are, generally speaking, freely transferable

c. Though incorporated, a public company cannot commence business until the Register of Companies issues a certificate to commence business. This certificate depends on compliance with a number of formalities.

d. Accounts must be audited each year and filed with the Register of Companies. Members of the public may inspect these accounts.

e. If permission is granted by the Stock Exchange authorities shares and debentures of public companies may be quoted on the Stock Exchange.

- One of these is not an attribute of a limited liability company or corporation. (a) Ease of expansion due to access to large amount of capital (b) Longer life span (c) Ease of establishment (d) Limited liability for owner

o ANS; C

4.4.3 Formation of a Limited Company

A lawyer normally drafts the necessary documents for registration with the Registrar of Companies; the main documents required are:

1. **Memorandum of association** – governing the relationship of the company with others (covers company name, directors, number of shares plus a declaration that liability is limited).

2. **Articles of association** – governing the internal working or management of the company. The company may draw up its own or adopt the set in Table A of the Companies Act. The articles cover division of share capital, right of classes of shareholders, voting procedures, directors procedures, etc.

3. **Statutory declaration** of compliance with all the requirements of the Companies Act.

4. Statement of nominal capital
5. **List of persons** who have consented to be directors
6. Form of consent to act as director from those who have consented to be directors

4.4.4 Three kinds of company may be registered under the companies Act:

a. **Companies limited by guarantee**: This is where the liability of the members is limited to the amount which they agree to contribute to the assets in the event of liquidation. This is usually a nominal figure. This method of incorporation is infrequently used. Association, clubs and societies are the main users.

b. **Companies limited by shares**: This is where the liability of the members is limited to the amount unpaid on their shares. If the shares are fully paid up the members have no further liability, unless they have given personal guarantees for any debts, such as to a bank.

Guarantee and unlimited companies are rarely used for trading purposes and may be given permission not to include the word 'limited' in the title.

4.4.5 The Operation of Limited Companies

Limited companies have a corporate existence which is independent of its shareholders or directors and in contrast to the situation in a sole tradership or partnership the dent or bankruptcy of one of its members does not bring the firm to a cessation. Shares in a limited company can be transferred subject to certain rules in private companies and because of the effect of limited liability this form of organisation can attract significant additional capital for expansion from new shareholders.

The control of limited companies is delegated by the shareholders to an elected Board of Directors and it, in turn appoints a managing director who controls the day-to-day operation of the business. As this form of business enterprise may be used for small, medium and large businesses, there is no one structure of management which can be said to be a normal one. Responsibility for decision taking can under this form of organisation be spread throughout the management under the managing director with the ultimate control being shared by board members.

4.5 CO-OPERATIVE SOCIETIES

A co-operative society is formed by individuals who join together to carry out business and provide the capital to do so. The co-operative society has many of the advantages of the joint-stock company. If registered with the Registrar of Friendly Societies the members of a co-operative society gain the privilege of limited liability. ***Co-operative*** as they are commonly called, are incorporated under the law of a state. They are to be distinguished from corporations in the following respects;

4.5.1 Distinguishing Features of Co-Operative

a. Voting depends on the number of members, not the number of shares held, i.e. one man-one vote
b. Each member is restricted in the amount of shares that he may hold
c. Shares held are not transferable but are withdrawable, i.e. a member may withdraw what he has invested
d. A surplus at year end, after all payments may be distributed amongst members in proportion to the business carried on by the individual member with co-operative society
e. Each co-operative unit is owned by the user-members of the group
f. There is a limitation on the amount of stock that each member may own
g. The capital for the enterprise is subscribed only by its member

4.5.2 Types of Co-Ops

Denmark and Britain provide the best example of co-operative retailing. In the UK, some thirteen million people are members of retail co-ops. The Co-operative Wholesale Society is not only the biggest wholesalers in England but also services thousands of retailers and operates 200 factories. The purpose of retail co-ops was primarily to introduce bulk buying at discount prices. These discounts would then be passed on

to the customer-member in the form of lower-prices. The wholesale co-ops were formed in Ireland to regulate and stabilize distribution.

4.5.3 Advantages of Cooperatives Society

Cooperative has all of the advantages of corporation although the requirement of ownership by user-member s limits the size and ease of expansion. They also have a tax advantage on those patronage dividends are considered a refund of overpayments rather than a distribution of profits, and the federal government provides financial assistance not available to profit seeking corporation. In agricultural co-ops, members are frequently intensely loyal to their firm and support the business with zeal and enthusiasm

4.5.4 Disadvantages of Corporate Society

Cooperatives lack the profit–making incentive common to other forms of ownership which appears to be a serious handicap. Also, there is an unfortunate tendency to rely on volunteers; for example, members of the board of directors customarily are not paid for their services and the salary scales for the employees are usually on the low.

4.6 VARIOUS KINDS OF COOPREATION

The most extensive use of co-ops is in the field of agriculture. Farm products that are marketed through farmer cooperatives include citrus fruits, butter potatoes, milk, and rice. Recently, cooperative health plans have shown some growth but in other retail areas, the cooperative movement has failed to generate any enthusiasm among our general public. There is a possibility however, that the recent rise in consumerism may increase interest in the cooperative retailing of consumer goods. This is a good potential trend worth watching in the immediate years ahead.

4.6.1 Public Enterprise

Public corporation is a government establishment, basically set up to produce goods or provide essential services to the people at very low prices. A public corporation is set up by an act of parliament, run and managed with taxpayers money and expected at least to sustain itself, if it is not making profits. The following are examples of public corporations; Nigeria Railway Corporation (NRC), the Nigeria ports Authority (NPA), NationalElectricity Power Authority NEPA, and Nigerian National Petroleum Corporation NNPC.Their capital is subscribed by the government and many such companies are in receipt also of government guaranteed loans. Alternatively, state-sponsored bodies may be formed by registration under the companies act: this method is frequently used for Trading companies and their organisation and operation is the same as that of Minister for Finance and that the company is under the general policy control of a Minister of State. Therefore, public enterprises are in the hands of the people and, as such, managed or controlled by the government; or that which is open to anyone and is for the benefit directly or indirectly of all its citizens. e.g Nationalized industry.

4.6.2 Characteristics of Public Enterprises.

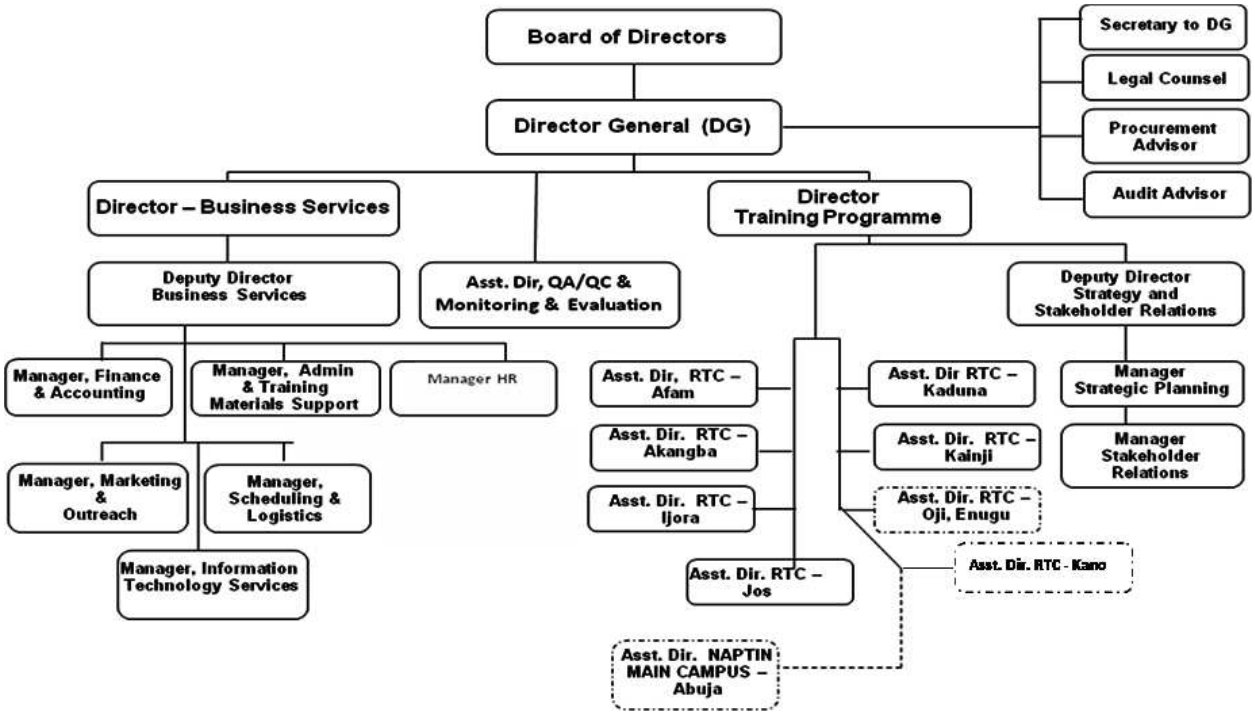
- It is owned and finance by government, this fund is generated from the people's money through the annual budget of government, although it may have some financial independence in later years.
- The capital involved in setting up a public corporation is astronomical and often beyond the reach of ordinary businessmen, so government goes into such business for the benefit of the people.
- A public corporation has a board of directors that is headed by a chairman; the board of directors managed and run the corporation on a day-to-day basis
- A public corporation is established by an act of parliament which spells out its power, functions and responsibilities.
- The main business of a public corporation is often to provide essential goods and services to the general public at an affordable prices, examples are the Nigerian National Petroleum Corporation

- The staff that controlled these types of corporation are not called civil servants, although they work indirectly for government and their services are for the benefit of all.

4.6.3 The Organisation Structure Of Public Enterprises

The organisation structure of a public enterprise can be drawn below, which shown different levels and stages headed by the Board of directors and are accountability moved from director general to the board. The Director General offices are composed of Secretary to DG, Legal Counsel, Procurement Adviser and Audit Adviser. Director of different ministering are also report directly to the DG. For example the director general gives responsibility to Director- Business services and Director training programme. Each of these directors has different sub-division offices in the ministries. The relevant Minster is the political head of corporation in the public parastatal.

ORGANISATIONAL STRUCTURE OF PUBLIC ENTERPRISES



Source: Adapted from Naptin- National Power Training Institute of Nigeria



SUMMARY

You have leant the basic forms of business organisations, such as sole trader, partnership,joint stock companies and cooperatives society. A sole trader's business is run by one person. The maximum number of partners is 20 persons except for banks, therefore, both forms are unincorporated business and they have unlimited liabilities.

You have also been exposed to the formation of relevant documents as well as Memorandum of Association and Article of Association to register companies through the corporate affairs commission. The law governing the formations and regulations of business enterprises in Nigeria is the Companies and Allied Matters Act 1990.

SELF ASSESSMENT QUESTIONS

This self-assessment question will evaluate the different types of business organisationsthat a prospective businessman can registered to in Nigeria and describe the necessary requirements for formation and regulation.

SAQs 4.1 (Testing Outcomes 4.1,)

What is sole proprietorshipbusiness;State its advantages as well as its disadvantages

SAQs 4.2 (Testing Outcomes 4.2, 4.3,)

What are the advantages of partnership forms of business over Limited Liability Company?

SAQs 4.3 (Testing Outcomes 4.1, 4.2,)

What are the advantages of partnership form of business over sole traders

SAQs 4.4 (Testing Outcomes 4.2)

What do you understand by partnership contract and is it differs from partnership deed

SAQs 4.5 (Testing Outcomes 4.46)

Differentiate between the purposes of Memorandum of Association and Article of Association

MULTIPLE CHOICE QUESTIONS

1. …… is a form of business in which the owner bear the whole risk and return of the business (a) partnership business (b) company limited company (c) sole propiertorship (d) private limited company

2. ……. is the documents containing the name of the company, address, object clause, nature of the business (a) Memorandum of association (b) article of association (c) company registrar (d) company information book

3. Without agreement among the partners profit or loss are share in accordance to …… (a) equally (b) capital contributed (c) active partners (d) aged of partners

4. …….. is the document containing the list of partnership agreement business (a) partners deed (b) partnership deed (c) partnership act (d) partnership law

5. ……. is the firm where the liabilities of the member is limited to capital contributed by the partners. (a) private limited company (b) public company (c) limited liability partnership (d) limited by guarantee

6. One of these is not an attribute of a limited liability company or corporation. (a) Ease of expansion due to access to large amount of capital (b) Longer life span (c) Ease of establishment (d) Limited liability for owner

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STUDY SESSION 5

THE NIGERIAN FINANCIAL MARKET



5.1 INTRODUCTION

A highly developed financial system is a hallmark of any modern business enterprise economy. The market, instruments, and institution that comprise this system facilitate the efficient production of goods and services. They, thereby contribute to the society's wellbeing as well as rising standard of living. The financial system performs this essential function by channeling the nation's savings into its highest and best uses. It does this by bringing together those who have funds to lend and those who wish to borrow to finance their expenditures. People and organisation wanting to borrow money are brought together with those having surplus funds in the financial markets. Therefore, this Study Session will showcase where you can source different kinds of fund for investment purposes as discussed in Study Session 2.

This study session will describe and illustrate some of the important functions of financial markets and institutions. This will help you to make decision of the technical details in later study session. The functions of financial market and institutions are introduced here.



LEARNING OUTCOMES

After studying this Study Session, you should be able to;

5.1 Define the financial markets in general

5.2 Function of the Nigeria financial market

5.3 State the major types of financial markets and the roles of money market in Nigeria as well as explain the characteristics of money market instruments

5.4 Define the capital market, state participants and instrument

5.5 Classify the Nigeria financial market in difference form of market

5.6 Justify the roles of financial manager and the markets; and

5.7 Understand the implication of financial market activities

5.1 DEFINITION OF FINANCIAL MARKET

Financial markets are markets where individual and organisation raise capital through sale of securities and invest their surplus funds through purchase of securities. Financial markets also include the institutions through which these transactions are carried out. Therefore, financial market make it possible for people to buy, sell, borrow, lend, give and exchange claims to future flow of income or wealth in an almost infinite number of ways and with the greatest speed and convenience.

Activity in financial markets involves the exchange of one financial asset for another. In most exchanges, lenders exchange money for other financial assets that provide a future return. In effect, they buy a claim against someone's money holding at a future date – they buy an IOU. These IOUs, or "securities," provide an expected return in the form of interest or dividends. In some cases, the lender may hold a security until it matures, that is, until the borrower repays the loan on the specified date. In other cases, the lender may sell the security to someone else before it matures. Thus, although the borrower continues to use loaned funds, the lender is now a different person. We say that lenders "supply loanable funds" to the market whereas borrowers "demand loanable funds."

- In which respect are the financial markets different from other markets such as commodity, real estate, automobile, etc

A. Inter-relatedness of the constituent markets

B. Allocation of scarce resources by the price system

C. Influence of price elasticity

D. Intangibility of operation

o ANS: B

5.2 FUNCTIONS OF FINANCIAL MARKETS

Financial markets perform an economic function and they facilitate the transfer of real economic resources from lenders to borrowers. Lenders have earned money income and wish to save part of their earnings for future use. They can earn interest on their savings by lending their purchasing power to someone who wishes to obtain command over real resources (by purchasing labour services, plant and equipment, land, and so on). Thus, real resources flow to borrowers and away from lenders. Lenders have reduced their present consumption and will have higher income (and a higher consumption level if required) in the future when the loan matures.

Secondly, the borrowers will source the fund from the financial market and use the borrowed funds productively – by investing in new machines, for example – they will produce a larger income, thereby raising the real standard of living not only of borrowers, but of others in the economy. Thirdly, by facilitating transfers of real resources, financial markets serve the nation's economy and the welfare of its citizens. Under a free enterprise pricing system, profit-seeking entrepreneurs provide people with commodities that are willing and able to pay for. As consumer desire change over time, it is necessary that factors of production flow readily into the hands of producers who respond to those changing desires. Because financial markets permit shifts of real resources far more efficiently than the barter agreements that would be necessary in their absence, such markets are highly productive; in a modern highly developed economy they are essential.Fourthly, financial markets also perform a financial function. They provide borrowers with funds (purchasing power) that they need to have now to carry out their plans. Also, they provide lenders with earnings assets so that a leader's wealth may be held in a productive form without the necessity of direct ownership of real assets. There is, of course, no sharp dichotomy between economic and financial function of financial market, and it is only for analytical purpose that economists draw such a distinction.In general, when real resources are affected, we refer to economic functions, but many financial transfers

have only slight effects upon real resources allocation, and in these cases economists refer to financial functions.

- Which of these descriptions does not appropriately define the value of a marketable security?

A. Current market price

B. Future monetary returns

C. Future monetary returns on the current market price as a percentage of rate of return

D. Past yield on the security

- ANS: D

5.3 THE BROAD CLASSIFICATION OF FINANCIAL MARKET

The broad classifying of financial markets can be divided into money and capital markets. "**Money markets**" refer to markets in which short term instruments are traded. Usually, we define a short term instrument as one year or less remaining until its maturityand. "**Capital markets**" are those markets for long term debt instruments and stocks. However, the dividing line is arbitrary, and in some markets the one year line may not be appropriate, but it is the most often used. **Capital market** securities are, therefore, those that mature in more than one year, or that have no maturity dates, as in the case of stocks. The securities bought and sold are known as financial assets. Therefore, these two broad categories of financial markets can be elaborated as thus;

(a) The money market; and

(b) The capital markets.

5.3.1 The Money Market

The money market is a market for mobilizing short-term securities, that is, securities with tenure of one year or less. The main institution of participant of money market is the commercial banksand therefore, the instrument traded in the money market are characterized by low level of return, that is, low level of risk, high degree of liquidity and good institutional structure. Examples of instruments traded in the

Nigerian money market include, treasury bills, Central Bank of Nigeria (CBN) certificates, commercial banks deposit, certificate of deposit (negotiable and non-negotiable), bankers acceptance (BAs) and commercial papers (CPs).

Money markets are **important for two reason**s:

- They provide a major means by which participants can adjust their liquidity position and
- The Federal Reserve System, which is responsible for controlling the money supply conduct most of its operation in the money market. Through this operation, it seeks to achieve many of our nation's economic goals.

Liquidity is important both **to individuals** and **to institutions**. Individuals and firms may have tax or other payments to make in the near future. By temporarily investing in money market instruments, they can earn interest and, when necessary, sell the money, the market assets to obtain money to make their payments. Banks and other financial institutions also buy money market instruments that mature shortly or can easily be sold to provide for withdrawals of funds by depositors or for making loans to customers

5.3.2 Money Market Instruments

Money markets: In the financial market, money market is that part of the market that is involved in short term investment. Among the participants in the money market are CBN, commercial and merchant banks, discount houses, brokers etc. Some of the instruments used in the money market will include, treasury bills, treasury certificates, negotiable certificates of deposit, commercial papers, bankers acceptance, promissory notes. Etc.The following are the characteristics of each of these instruments in major money market instruments:

(a) TREASURY BILLS

These are short-term securities issued by the Central Bank of Nigeria (CBN) on behalf of Federal Government of Nigeria (FGN). Aside from cash investments, they are the most liquid and safest of all investments as they backed by the Federal Government. They are therefore, regarded by financial managers as risk-free securities.Treasury

bills are issued in denominations of **N1, 000** and are sold on auction basis. They have 91 days, 182 days, and 365 days maturity and are sold at a discount to their face or par value.

(b) CBN Certificates

These are issued also by the CBN on behalf of the Federal Government to bridge the financing gap between treasury bills and long-term Federal Government bonds. They are sold for maturities of 180 days and 364 days. The CBN certificate is one of the instrument in money market in which it captures for long term investment opportunity in which investor cannot reduce in the underlying asset or lose the whole investment rather he makes proceeds on investment

(c) COMMERCIAL BANKS' DEPOSIT

These are usually referred to as savings accounts. They are the simplest forms of investments. The minimum required amount varies from bank to bank. There is no maximum. Deposit accounts normally pay a stated rate of interest which also varies among banks. Withdrawals can take place without penalty even when there is no notice. However, a minimum balance which varies among banks must be maintained to keep the account alive. Thus, this type of investment is a risk free investment and it's proceed is relatively small compared to the forms of money market instrument

(d) CERTIFICATE OF DEPOSIT (CDS)

These are also known as fixed deposits. A certificate of deposit is a receipt issued by a bank to a depositor who puts in an agreed sum of money for a fixed period of time ranging from one month to any period as agreed with the bank. Banks usually pay a fixed rate of interest that is higher than on the regular savings account and that increases with the period of deposit.

By issuing the certificate, a bank undertakes to pay the amount of money deposited (with interest) to the holder of the receipt on the specified date. There are negotiate and non-negotiable certificates of deposit. Negotiable certificates issued by CBN can be sold before maturity on the secondary market or discounted at CBN. Non-negotiable

certificates are held to maturity. Termination of the deposit before maturity usually attracts penalty.

(e) BANKERS ACCEPTANCES (BAS)

A banker's acceptance is a negotiable time draft belonging to a class of instrument known as bill of exchange. A bill is usually drawn on a bank and properly signed by the drawer. It is made payable to the drawer himself or to a named third party. If and when the drawee bank signs the bill across by writing "accepted", the bill becomes a "banker's acceptance". Bankers' acceptances have three parties- drawer, drawee, and payee – and maturity periods ranging from 30 days and 180 days. There is considerable safety and liquidity but not as high as those on treasury bills. Banker's acceptance is a form of guarantee by the bank and can be used to finance domestic or international trade. Bankers' acceptance are bought and sold on a discount basis.

(f)COMMERCIAL PAPERS

These are short-term negotiable unsecured promissory notes sold by big and reputable companies mostly finance companies to raise money in the money market. Commercial papers have two parties- promisor and the promissee. A bank only comes in as an agent of either party or both parties.The rates on commercial papers are higher than those on banker's acceptances and risk is also higher. Commercial papers are also traded on a discount basis.

- Which of the following is NOT an instrument of money market in Nigeria? (a) certificates of deposits (b) commercial banks deposits (c) bankers acceptances (d) state revenue bonds (e) treasury bills
  - ANS: D
- Which of the following is NOT a characteristic of money market instruments? (a) high level of liquidity (b) high level of safety (c) low maturity period (d) high degree of return (e) good institutional organisation
  - ANS: D

5.3.4 Roles of Money Market in an Economy

The role of money market is immense as an instrument that stimulates growth and development. This can be achieved through the participation of money market, in making funds available for short term investment and it's derive roles are as follows:

1. It provides short-term funds to the public and private company needing such financing for their working capital requirement
2. It provides an opportunity for banks and other institutions that have short-term surplus fund
3. The existence of a developed money market removes the idea of commercial bank borrowing from central bank.
4. The money market helps the government in borrowing short-term funds at low interest rate on the basis of treasury bills
5. Well-developed money markets helps in the successful implementation of the monetary policies of the central bank.

5.4 THE CAPITAL MARKET

The capital markets are the markets for intermediate and long term securities; that is, security that have more than one year of maturity say three years, five years, and ten years. The capital market comprises the bond market and stocks**.** As earlier defined, capital markets are markets where long term finance is raised by companies and federal, state and local governments. The capital markets comprise the primary capital market – market for new funds – and the secondary capital market- market for existing (second hand) securities. The market where long-term capital formation is made, that is, new issues of shares is used for intending companies. Participant will include security and exchange commission (sec), Nigerian stock exchange market, investors and corporate bodies. Some of the instruments will include shares, stocks, bonds and debentures

The primary purpose of the capital market is to channel savings into investments. This process, by adding to the nation's stock of capital goods, increases output per worker hour and ultimately raises our standard of living. The capital markets facilitate this process in two ways. First, savers may buy newly issued long term instrument that provide business, firms with fund to finance capital expenditures. Second, financial institutions, such as savings and loans associations, commercial banks, life insurance companies and other use the savings of individuals and business to acquire capital market securities, including mortgages. In both ways, savings are made available for investment purposes.

In Nigeria currently, three major instruments in the capital market are Federal Government Development Loans stock as well as State Government issues of loan stocks, commercial and industrial loan stocks and debentures and industrial and commercial equities. It is imperative to note that financial institutions lend short term funds when they accept demand deposit because such funds may be withdrawn within a short term period. However, when financial institutions invest these funds in capital market, the funds are usually provided for longer period of time. Thus, the short term and long term markets are connected through the operations of the financial institutions.

- In term of risk, state the main difference between money market and capital market
  - ANS; Money market instruments have lower risk when compared with capital market instrument
- State the relationship between yields and price of fixed-interest securities (a) the higher the yield the higher the price (b) the higher the yield the lower the price (c) the yield is always equals to the price (d) the yield is unrelated to the price (e) the lower the yield the lower the price.
  - ANS: B
- This is the market for longer-term funds. The key issue is the time for which the funds are provided. We "draw the line" at one year. So, if a security will pay back for a term greater than a year, it is in this market. This is called the……

- ANS: Capital market

5.5 OTHERS CLASSIFICATION OF FINANCIAL MARKET

Financial market can also be classified according to the sources of the financial asset and this can be **primary market** and **secondary market** as well as their components.

5.5.1 Primary Market

Primary markets are the markets for new issues of securities and markets for existing claims. The markets for new issues of securities are here, consumers, managers of business firms, and government units issue new securities to raise funds to finance their expenditures. These securities may be purchased directly by financial institutions or other lenders who have funds to invest. However, most new issues of private long-term securities and of state and local (but not federal obligations are initially purchased by investment bankers or underwriters. After the underwriter has purchased the securities, they are resold in the market and any profit to the underwriter will be determined by the spread between the initial purchase price and the resale price.

This market, also called "**the new issues market**" is a market for new issues of securities, principally shares and at times debentures. Funds which are raised in this market are primarily long-term funds through the issuance of long term fixed/variable-interest corporate securities and shares. These securities are bought by investing public who put down their funds in exchange for these securities. The buyers of these securities are known generally as investors. They may be lenders when they have contractual agreement with the issuing company for the receipt of periodic interest and repayment of their capital. They may also be part-owners of the issuing company when no such contractual agreement exists.

5.5.2 Methods of Making New Issues in Primary Market

There are five methods of making new issues in the primary market. These are offer for subscription, offer for sale, stock exchange introduction, rights offer and private placement.

Offer for Subscription

These are issues of shares or debentures made directly by the company to the public. The proceeds of issue go directly to the company to finance its fixed assets, other expansion programmes and working capital as stated in the prospectus. The company normally goes through an issuing House which advises on such things as pricing and timing of the issue. This method may be used by companies coming to the market for the first time or already quoted companies. Underwriting is usually necessary under this method.

Offer for Sale

This is an offer of existing securities, to the public. There are two known forms this type of offer may take. First, it might occur where the issuing company initially sells the shares to an issuing house which in turn sells the shares to the investing public at a slightly higher price. Second, it might occur where the shares were already owned by government and it decides to privatize these holdings. In both cases, the proceeds go to the vendor and not the company. Most of the Federal government parastatals that were sold under the privatization programme fall into the second category. Underwriting is, usually, not necessary in this case.

Stock Exchange Introduction

Under this method, the company already has a wide spread of shareholders and it is only seeking quotation on the stock exchange. Some Nigerian companies got listed on the stock exchange via introduction. They had already satisfied the listing requirements of the "The Exchange" regarding the member and spread of shareholders.

Rights Offer

This is an offer to the existing shareholders of the company, usually at a price lower than the current market price. Details of this offer will be discussed later in this chapter.

Private Placement

Under this method, securities are sold to a select group of investors through special direct invitation to prospective investors who can only subscribe to such offer. Shares issued under this method would not be listed on the stock market, so subsequent trading in these shares on the exchange would not take place.

5.5.3 The Secondary Market

A secondary marketisthe markets for existing claims (that is financial assets). Since the original issuers are not obligated to redeem securities until maturity, these markets allow investors to exchange securities for money before they mature. The focus of this subsection is on the secondary capital market in which equities change hands between one investor and the other. Purchase and sale of stocks and shares do take place anywhere and such transactions do not have to be on the floor of an exchange building. Thus, the secondary capital market is any place where quoted long-term securities of companies and government are traded. Nevertheless, the most important part of the secondary capital market anywhere in the world is the country's official stock exchange or stock market. Most of this official stock exchange hasprimary function as well as a secondary one. Thus, active secondary markets enhance the value of financial assets. The ease and convenience with which such assets can be sold prior to maturity without a significant loss is a measure of their "liquidity".

A second way of classifying financial markets is to divide them into **markets for loans** and **markets for securities**. A **loan** is usually negotiated directly between the borrower and the lender; they deal face to face. In contrast, **securities markets** are impersonal or open markets; buyers and sellers of securities are usually unknown to each other, and usually trade through brokers or dealers. Most consumer credit to finance the purchase of durables and of housing takes the form of loans. Business firms also obtain loans, principally from commercial banks, especially for short-term needs. Most large business firms rely on both loans and sale of securities to obtain needed funds.

Some loans, having been made by one institution may be sold to another institution in a secondary market; this is especially true for mortgage loans. On the other hand, some securities issues are negotiated directly by borrowers with lenders, as in the so-called private placement of bonds issued by a business firm and sold to an insurance company.

Therefore, whether or not borrowers and lenders are known to each other does not always provide a sufficient criterion for distinguishing between a loan market and a securities market.

Securities markets may be subdivided into other categories. For example, there are markets for debt instruments, such as bonds, and there are markets for equities, such as common stock. The former represents obligations of companies or government units to creditors. Stocks, on the other hand, are evidence of ownership of firms by stock holders. Although bondholders and stockholders have different legal status, it is often convenient to regard both bonds and stocks as securities, since capital may be obtained by firms through the issue of either type of instrument.

Securities may also be traded on the "floor" of a securities exchange or "over the counter" by personal or telephone contact with dealers and brokers. Although the New York System Exchange and the American Stock Exchange get most attention in newspaper articles, more securities are traded over the counter than on the exchanges unlike Nigerian Stock Exchange.

- Which of the following is NOT and advantage of federal government fixed interest securities? (a) risk (b) safety of capital (c) safety of income (d) liquidity (e) good institutional arrangement
  - ANS: A
- The price at which new issues are made in the primary market is determined by: (a) security and exchange commission (SEC) (b) registrars (c) Nigerian Stock Exchange (NSE) (d) Issuing House and Issuing company (e) stockbrokers
  - ANS: D

THE NIGERIAN STOCK EXCHANGE (NSE)

The Nigerian Stock Exchange (NSE) was incorporated in 1960 limited by guarantee and started operations in Lagos and it was first known as Lagos Stock Exchange.It presently has its Head-Quartersand branches in Abuja, Kaduna, Port-Harcourt, Kano, Oni Abeokuta and Yola, with each having a trading floor. The exchangestarted operation with only 9 securities (3 equities and 6 government stocks). The number of securities traded on the Nigerian Stock Exchange is about 300.

The NSE is governed by a team of shareholders elected at an AnnualGeneral Meeting. These shareholders constitute the governing council (Board) of the NSE. The Council is headed by a President (Chairman) while the National Secretariat is led by a Director General (DG) (Chief Executive 0fficer)who is responsible for the day-to-day administration of the exchange

The duties of the Council include:

- Policy making;
- Enforcing discipline among members;
- Making rules and regulations for dealing members;
- Giving approvals to quotations and listing of securities;
- Protecting the interest of the investing public; and
- Investigating and settling disputes and complaints against and among members.

Roles of the Stock Exchange

The roles of any recognized stock exchange market include the following:

1. The existence of any recognized stock exchange gives liquidity to investors who may want to sell their shares for cash as and when needed. This is its principal role.
2. Also investors would have opportunities to diversify their portfolios of securities, if they want.

3. Existence of the exchange is vital to firms that wish to raise long-term finance. It enhances the success of the new issue.
4. The absence of secondary market facilities tends to make the raising of long-term funds very expensive in terms of returns demanded by investors.
5. Economic development of a nation may be hindered by lack of established secondary capital market which may result in lack of long-term investment finance.
6. Existence of an officially recognized stock market will ensure that securities traded in such markets do not only have established prices but are also efficiently priced.
7. Accountability and transparency can be guaranteed as there are rules and regulations which dealing members must abide with in the conduct of their affairs.
8. Investors are adequately protected as securities are, normally, properly screened before they are listed on the Stock Exchange.
9. Stock Exchange transactions can now take place through computer, internet telephone, fax and are no longer limited to the trading floors of an exchange building.

The Trading System

The NSE made a dramatic change to its system of trading in stocks and shares when it introduced the Automated Trading System (ATS) e-trading in April 1999. Prior to this time, a system known as call-over system was in operation. This system involved shouting by brokers on the floor of "The Exchange" to declare their intentions to stocks/shares.

The new system, that is electronic trading system, is a computerized one under which stockbrokers interacts with one another through interconnected work stations that is across a network of computers. The main sub-systems of the Automated Trading System (ATS) are the work station (CPU, monitor and printer), the trading engine (the server) and the trading software (the horizon). The workstation is the electronic facility with which the brokers interact and each workstation is available for each broker (currently) on the trading floor of the exchange. Here brokers input their buy and sell orders on their systems. The trading engine is the computer server which

generates the actual start of the day's market transactions (Open State) and matches brokers buy/sell order, followed by continuous trading. This is done before allowing the transaction, otherwise the transaction is rejected.

After brokers have input orders, into their individual systems, the server goes into the Computer Securities Clearing System CSCS Clearing House to verify if the account numbers entered by the brokers actually exist and if the stocks are available in the clients' accounts.

Trading on the ATS starts usually at 10.00am each trading day with the Pre-Open State (situation when brokers input their buy/sell orders which are yet to be matched and, therefore, subject to partial or total variations). At about 10.40 am trading moves to the Open/Continuous State. At 12 noon trading moves to the close state, that is, market closes. The ATS is configured for remote trading. Already stockbrokers in some branches are trading on line. At present, some brokers engage in remote trading from their different offices.

Trading, Clearing and Settlement Processes of the NSE/CSCS

- The investor initiates the buy or sells order, going through stockbroker.
- He deposits his money with his stockbroker when he is buying, or deposits his certificate for verification when he is selling. When his certificate has been dematerialised (immobilized), he gives instruction to his stockbroker to sell from his shareholding account in the CSCS system.
- He completes the necessary documentation including transfer form.
- In respect of partial sale, he gives instruction to his stockbroker to sell from the stocks.
- The stockbroker receives instructions from his client and fills the certificate of deposit form and sends them with the share certificate, if any, for verification to the registrar.
- A stockbroker verifies clients' signatures with the Registrar.
- Completes a contract note and gives it to his client as evidence of the contract.
- The registrar authenticates investors claims (certificates and transfer form) as presented through the stockbroker.

- Sends verified certificates and signed transfer form to the CSCS within 48 hours.
- CSCS certifies that the shares are in its system c stockbrokers can trade in the shares.
- Transaction takes place on the exchange and transfer CSCS on real time basis via the ATS.
- Transactions obtained from the Exchange are process
- Stock brokers communicate their daily financial commitment to each other to the settlement banks (where each stockbroker maintains a trading account) via diskettes supported by hard copies.

It should be noted that all the above transactions are expected to be completed within 4 working days, that is, T + 3 (transaction day plus 3 working days)

5.6 THE ROLES OF FINANCIAL MANAGERS AND THE MARKETS

Financial managers carry out its functions of resources allocation in an organisation and sourcing for funds.In line with this, financial manager is a net user of capital resources.

- He enters the money market to invest funds temporarily and make surplus fund to the company's requirements.
- He goes to the capital market to raise long term funds for long term investment. In doing this, he has to design strategies for choosing the best and cheapest sources of funds. The rate of return he pays affects the choice and acceptability of the company's projects.
- As earlier discussed, he should be interested in the price put on the company's share on the stock market as this may ultimately affect the security of top management (including him) vis-à-vis their emoluments and their continued stay on the job.

Therefore, in earlier Study Session, we discussed what determines the best investment criterion and showed how financial managers will source the best sources of funds for the propose investment as well as know the state of their firms for suitable financial decision. In conclusion, financial manager also need to understand the environment and markets where capital is raised, securities are traded, and stock prices are established as well as the institutions that operate in these markets. In the

process, we also implore the principal factors that determine the level of interest rates.



SUMMARY

You has leant that financial markets are markets where financial assets (securities) are traded and they comprisesof money market and capital markets. Money market is a market for short term securities. Money market instruments have common characteristics which border on low risk, low return, high liquidity and good institutional structure. Money market instruments are the securities traded in this market and they include treasury bills, commercial banks' deposits, fixed deposits, bankers' acceptance and commercial papers. Capital markets are markets for intermediate and long term securities. Capital markets instruments comprise, among others, Federal Government bonds, state revenue bonds, debenture (corporate loan stocks) Preference shares and ordinary shares. Capital markets instruments have different and unique characteristics

You have been able to learn the Participants in the financial markets and how they are more active (as buyers and sellers), intermediating (as agents) in term of mobilization of resources from the surplus units to the deficit units of the economy or regulatory. Participants of the Nigeria financial market are individuals, companies, banks, non-banks financial institutions, issuing houses, stock brokers, Bureau de changes, Nigeria Stock Exchange, Securities and Exchange Commission and Central Bank of Nigeria. The activities in the financial markets have great implications for the financial managers of a company.

SELF ASSESSMENT QUESTIONS

This self-assessment question tailor to the financial market, by assessing what are instrument traded in money market and capital market and its definition. The institution for the financial markets and strategies for to obtainfinance as well as the principal factors that determine the level of interest rates.

SAQs5.1 to 5.6(Testing outcomes 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.6)

1. In terms of number of parties, what is the difference between bankers acceptance (Bas) and commercial papers (CPs)
2. State the impact of inflation on money market instruments
3. State the difference between 'par' value and 'market value' of a government fixed – interest security
4. State the primary function of stockbrokers in the capital markets.
5. This is the market for "used" securities – i.e. like the used car market. So, the securities in this market are probably not being offered for sale by their original issuers. This is the……..
6. This is the first offer of a company security to the public. These are brand spanking-new securities. This is a……..
7. Let's say a whole bunch of folk's deposit, on average, ₦100 per week in the bank. Then, the bank periodically "bundles up" the money and lends it out in ₦10 thousand or even ₦100 thousand increments (clue: think about "size" here). The bank is engaged in…….
8. With this market, time is the key characteristic of interest. Suppose a security is scheduled to be paid off in the short-term – let's say less than one year. The security is trading in the:……
9. Suppose you are a Federal Reserve economist-worrying about how money supply changes will influence the financial world, and ultimately, affect things like paychecks, inventories and inflation. You are worried about the:……..
10. Think of a general term for businesses like commercial banks, credit unions, or insurance companies…..but not including firms like Microsoft, Walmart, or Home Depot. We are talking about examples of:……

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Should you require more explanation on this study session, please do not hesitate to contact your e-tutor via the LMS.





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STUDY SESSION 6

FINANCIAL RATIOS ANALYSIS



INTRODUCTION

This session begins with the definition of financial ratios and the interpretation of final accounts. It is one of the fundamental tools of analyzing financial statement. The session will takes you one stage further and require you to look again at factors already dealt with in Study Session 3. Accounting information summarizes the economic performances and situation of a business and in order to make use of this information, the user needs to analyze as well as interpret its meaning. When confronted with information, it is useful to have a framework of analysis available to make an attempt to distill what is important from the mass of less important data. The analysis of financial ratio is largely concerned with the efficiency and effectiveness of the use of resources by a company's management, and so also with the financial stability of the company. Investors will wish to know, whether additional funds could be lent to the company with reasonable safety, whether the company would fail without additional funds. Therefore, the choice of ratio will be determined by the needs of the user of the information. In this Study Session,the ratios which are illustrated are divided into main groups which may be identified with the requirements of particular users.



LEARNING OUTCOME

After you have studied this session, you should be able to;

6.1 Explain the meaning of financial ratios and interpretation of ratios

6.2 Justify the relevant of financial ratios to stakeholder

6.3 Identify the usefulness of financial ratios

6.4 Identify the various types of financial ratios such as Profitability ratio, growth ratio, liquidity ratio, efficiency ratios, gearing or capital structure ratio.

6.5 Highlight the limitation of financial ratios

6.6 Discuss the comparisons of ratio in the same industry

6.1 FINANCIAL RATIOS

Financial ratio analysis is one of the tool uses by management to determine the financial health of any organisation. It is also used by investors to determine the financial viability of an organisation. Ratios are of use principally by the higher levels of management who are responsible for maximizing profit and planning for the future. By the use of financial ratio analysis, it is possible to facilitate the comparison of significant figures by expressing their relationship in the form of ratios or percentages. Comparison may be made with ratios for earlier periods in the same business in order to disclose trends and they may also be employed for purpose of inter-firm comparison. Therefore, financial ratios are used to examine various aspects of financial position and performance and are widely used for planning and control purposes as well as its support other information in the financial statement.

6.2 USEFULLNESS OF FINANCIAL RATIOS

Finance ratio analysis has some usefulness especially to the stakeholders to make use of the ratios in terms of decision making by investor and are as follows.

- Financial ratio provides performance measurement by indicating a firm's performance and near present financial position
- Liquidation or Reorganisation makes decisions which helps in determining whether or not to liquidate or reorganize a business in form of a business combination, merger, acquisition or internal reconstruction.
- Ratio analysis guides the Investment or Divestment decisions as to whether to further invest or divest where such investment is not performing satisfactorily
- It aids in the construction of a pattern of a firm's behavior and financial position

- Ratio helps in predicting the firm's future performance
- It facilitates the assessment of the efficiency with which the firm is utilizing assets for income generation.
- Financial ratio the helps to determine the ability of the firm to meet its current obligations as they fall due.
- It facilitates inter firm comparison.

6.3 RELEVANCE OF FINANCIAL RATIOS TO STAKEHOLDERS

The main parties interested in financial ratios include shareholders and potential shareholders, creditors' lenders, the Government for taxation and statistical purposes, potential take-over bidders, employees particularly through their trade unions, as well as management. The interests of the various parties have been summarized in Exhibit 6.1 below, which divides the types of ratio into five main categories. In this Study Session,it is not possible to show all possibly useful ratios since these can run to many hundreds, rather generally useful common ratios are illustrated. In practice, it is sensible to calculate as many ratios as appear for the required objectives.

Exhibit 6.1

Examples of parties with an immediate interest	**Type of ratio**
Potential suppliers of goods on credit; lenders e.g. bank managers and debenture holders; management.	Liquidity (credit risk): Ratios indicating how well equipped the business is to pay its way.
Shareholders (actual and potential); potential take-over bidders; lenders; management; competitive firms; tax authorities; employees.	Profitability: How successfully is the business trading?
Shareholders (actual and potential); potential take-over bidders; management competitive firms; employees	Use of assets: How effectively are the assets of the firm utilized?
Shareholders (actual and potential); potential take-over bidders; management lenders; and creditors in assessing risk.	Capital structure: How does the capital structure of the firm affect the cost of capital and the return to shareholders?

Shareholders (actual and potential); potential take-over bidders; management	Investment: Show how the market prices for a share reflect a company's performance.

Exhibit 6.2

Exhibit 6.2 shows the statement of comprehensive income and of financial position for the Bestoyin Company Ltd. Therefore, this Exhibit 6.2 will be employed in the preparation of financial ratio and reveal the financial performance as well as evaluation of Bestoyin Company Ltd.

Statements of financial position as at 31 December 2010

	2010	2009
Assets:		
	₦'000	₦'000
Non-current assets	20,211	21,141
Current assets (debtor ₦1450and₦1350 for each year)	7,214	4,976
Total assets	27,425	26,117
Equity and liabilities:		
Share capital (16,000,000 shares of N0.50 per share)	8,000	8,000
Retained earnings	7,584	7,313
Total equity	15,584	15,313
Non current liabilities	5,000	5,000
Current liabilities (including dividend payable of N1,696,000 (2009) and N1,800,000 (2010)	6,841	5,804
Total liability	11,841	10,804
Total equity and liabilities	27,425	26,117

Statement of comprehensive income for the year ended 31 December 2010

2010	2009
₦'000	₦'000

Turnover	7,500	9,500
Cost of sales (stock 1200&1600 each)	(2000)	(3,500)
Gross profit	5,500	6,000
Operating expenses	1,091	1000
Interest charge on debt	(500)	(428)
Net income	3,909	4,572
Income tax	(1,838)	(2,000)
Profit after tax	2,071	2,572
Market price per share	N5.00	N7.00

Calculate the following ratio and discuss their usefulness:

6.4 TYPES OF FINANCIAL RATIOS

1. Growth Potential Ratios
2. *Profitability Ratios,*
3. *Liquidity Ratio,*
4. *Activity or Turnover or Efficiency Ratios and*
5. *Gearing or Capital Structure Ratio.*

6.4.1 Short-Term Solvency and Liquidity Ratios

This ratios measure the ability of a business to meet its short-term financial obligations. Short-term solvency and liquidity ratios. Ratios, in this category include liquidity which is the amount of cash a company can obtain quickly to settle its obligation. Many small businesses have themselves been forced to wind up because a large customer has failed to pay its debt. It is hardly surprising that firms specializing in giving advice on credit risks should have come into existence. These firms started the consistent use of ratios to analyze company financial position. The following ratios are useful in the measurement of liquidity and short term solvency

- Current ratio
- Acid Test Ratio
- Cash Ratio

THE CURRENT RATIO

Current ratio is a form of comparing assets which will become liquid in approximately twelve months with liabilities which will be due for payment in the same period. A company should have enough current assets that a give a promise of 'cash to come' to meet its commitments to pay its current liabilities and thus, the standard test for liquidity is the current ratio. The formula is as follows

Current assets

Current liabilities

In interpreting the ratio, a commonly used rule of thumb would be 2:1, for banks ratio is 1.5. Many very good firms show a lower ratio. Referring to Exhibit 7.2 This may also conveniently; 

Current ratio =Current asset

Current liabilities

7214	4976
5145	4004
= 1.402:1	1.24:1

It shows a much higher ratio by over-valuing assets as a result of bad ones, Obviously, a ratio in excess of 1 should be expected, but what is 'comfortable' varies between different types of businesses.

THE ACID TEST RATIO

It measures the extent to which immediately realizable assets cover the current liabilities and this quick ratio will convert very quickly into cash. This will normally mean cash and debtors or current assets less stock-in-trade. Companies are not able to convert all their current assets into cash very quickly. For example, manufacturing companies, where stock turnover is slow, most stocks are not very liquid assets, because the cash cycle is so long. Therefore, the formula is as thus

The acid test ratio, is Current assets - inventory

Current liabilities

2010 2011

7214 –1200 4976 -1600

5,145 4004

= 1.17:1 0.84:1

This ratio should ideally be at least 1 for companies with a slow stock turnover. For companies with a fast stock turnover, a quick ratio can be less than 1 without suggesting that the company is in cash flow difficulties.

6.4.2Activity Ratio

This ratio is used to measure the efficiency of management in using the assets employed in carrying on its day to day activities and utilizes the assets under its control. These ratios are also called *Turnover Ratio***,** *Efficiency rati***os** and *Assetsmanagement*ratios**.** Therefore, the following are the component of Activities ratios;

- Inventory Turnover
- Payable Payment Period
- Receivables' Turnover Ratio

INVENTORY TURNOVER

This inventory turnover relates the cost of sales to the average inventory .The inventory turnover ratios gives the number of times the average inventory holding of this company could be utilized in meeting the supply of its products for sales. This ratio is significant to management and also shows how good management of inventory is. Therefore, the ratio is used to assess inventory utilization but it is well to remember that the ratio may be distorted by industry characterized e.g. a supermarket is likely to have a very high stock turnover while a jeweler may have a very low turnover.



Inventory turnover = Costs of Sales (in times)

Average Inventory

2000 = 1.67 times 3500 = 2.19 times
1200 1600

INVENTORY HOLDING PERIOD

This shows the rate at which customers are planning for credit sales. It is a measure for efficiency of credit control. The higher the ratio, the more liquid the business increases.The question is silent on cash or credit sales, the sales figure should be considered.



Holding periods = Average Inventory x 365
Cost of sales 1

1200 X 365 = 219 days 1600 X 365 = 167 days
2000 1 3500 1

Where average stock opening stock + closing stock
2

PAYABLE PAYMENT PERIOD

This is the ratio of creditor to credit purchases. The ratio shows how quickly creditors are paid. This means the velocity (the no of times) per period of time at which average stock is sold. The lower the ratio, the better for the creditors who only have to wait for a short period to get paid for the goods supplied or service rendered and it is calculated as follows;

Payable payment period = Trade payable x 365
Credit purchases 1

RECEIVABLES' TURNOVER RATIO

Receivables turnover ratio measure the effectiveness of debt collection functions and it connotes that the company is effective and efficient in cash collection. By comparison over a number of periods, management can see whether its credit policy is working or whether debtors are showing up their payments. Also, if there was a

credit squeeze in country, this may make debtors avoid paying for as long as possible.

Credit Sales (Number of times per annum)

Average Receivables

OR

Sales

Trade Receivable

7500 = 5.2 times 9500 = 7 times

1450 1350

THE AVERAGE RECEIVABLE PERIOD

This indicates a level of inefficiency in debtors' management. Management should intensify efforts in addressing this shortcoming. It is expressed as the average period for which credit is allowed to the customer and it is calculated thus;



Average receivable x 365days

Credit sales

1450 X 365 = 71 days 1350 X 365= 52 days

7500 1 9500 1

The formula indicates that when credit and cash sales are not clearly distinguished, total sales figures could be used. Furthermore, when the opening balance of receivable is not available, the closing balance could be used in the calculation of this ratio. This ratio is sometimes simply referred to as debtors' ratio and it is a measure of the collection period changes.

6.4.3 Profitability Ratios

Profitability is the end-product of the policies and decision taken by a firm and it issingle most important measure of success because it serves as the overall operative performance of a business. This ratio measures the overall performance and effectiveness of a firm. Profitability ratios are used to discover how efficiently and effectively assets have contributed to the profit of the firm because of single most

important measure of success. Therefore, the following are the measures of profitability ratios as thus;

- Return on Capital Employed
- Gross Profit Margin
- Net Profit Margin
- Total Asset Turnover
- Individual Asset Turnover

RETURN ON CAPITAL EMPLOYED

This ratio relates profit only to long term funds, made up of equity (share capital, reserves and debenture or loan stock). The ratio is used in determining rate of returns on capital employed with a view to ensuring efficient use of resources. ROCE can also be called primary ratio and investment ratios, and is perhaps the most important profitability ratio. Return on Investment relates the profit of a firm to its capital employed or total sales. It evaluates the ability of a firm to generate profit from sales as well as using capital resources to generate sales. The formula is as thus;



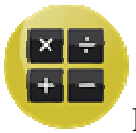
Return on capital employed= Profit before Interest and Tax x 100
Capital Employed 1

2,071	x 100	2,572	x 100
15,584	1	15,313	1
=	13%		17%

A change in return on capital employed is usually due to its variation of its component in secondary ratio such as capital turnover ratio or asset utilization ratio and net profit margin. Therefore, both causes of variation can be regarded as Secondary Ratio. However, the primary ratio for a trading out company is Return on Equity.

- The return on equity was better than the industry average both in the current year and last year. What is the possible explanation for this? A. Greater use of leverage. B. Higher liquidity. C. Lower gross margin. D. Lower asset turnover
  - ANS: A

ROCE is the primary profitability ratio, these other two are the secondary ratios,ProfitMargin and Asset Turnover together explain the ROCE. The relationship between the three ratios is as follows:



Profit margin x asset turnover = ROCE

PBIT x Sales = PBIT

Sales Capital employed Capital employed

ASSET TURNOVER

Asset turnover: Asset turnover is a measure of how well the assets of a business are being used to generate sales. For example, if two companies each have capital employed of ₦100,000 and company A makes sales of ₦400,000 a year whereas company B makes sales of only ₦200,00 a year, company A is making higher turnover from the same amount of assets and this will help company A to make a higher return on capital employed than company B. asset turnover is expressed as 'x times' so that turnover is 4 times and company B's is 2 times

NET PROFIT MARGIN

The same comments apply to Net profit/sales as to Gross profit/Sales. The difference between the two ratios will be explained by measuring the ratio of sales to the expenses in the profit and loss account. The ratio from Exhibit 7.2 is



Net profit margin = NPBIT x 100

Sales 1

3,909 x 100 4572 x 100

7500 1 9500 1

= 52% 48%

This percentage of 3.3 indicates by how much the profit margin can decline before the firm makes losses

Net profit (after tax) total assets

In this calculation of return on capital employed the total assets are defined as all fixed and other non-current assets plus working capital.



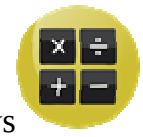
Return on Total Asset = Net profit (after tax)
Total assets

2010	2011
2,017 x 100	2,575 x 100
27,425 1	26,117 1
= 7.6%	9.8%

Similarly, if the assets of the business include terms of an intangible nature such as goodwill, it is often felt that the return on assets is better related to tangible assets alone, since the accounting valuation of intangibles varies so much.

GROSS PROFIT MARGIN

The gross profit margin is the ratio of gross profit to sales. It seeks to highlight the aggregate impact of the firms mark-up or pricing policy and thus, it is used to detect frauds or errors in the trading account or to estimate the disparity between actual gross profit margin targets. The formula is as follows



The Gross profit margin = Gross profit x 100
Sales 1

Therefore, the reasons why there might be variation in the gross profit margin can be traced to the following; sales mix, fixing of selling price or government policies, error in

stock counting or valuation Cost of purchase From Exhibit 6.2 the ratio for the Bestoyin Company Ltd is



Gross profit margin = GP x 100

Sales 1

5,500 x 100 6,000 x 100

7500 1 9,500 1

= 73% 63%

It is impossible to state a rule of thumb for this figure which will vary considerably from firm to firm and industry to industry.

COMMON SIZE RATIO

It measures the degree of erosion, on sales or the extent to which sales have been consumed in relation to all operating expenses incurred. The scaling factor here is sales.



Reserved & Dev. Return = Research & Dev. x 100

Sales 1

- Common size financial statements make it easier to compare which categories of firms? A. Firms of different sizes. B. Firms in different industries. C. Firms with different degree of leverage. D. Firms that use different inventory valuation methods.

o ANS: A

- State the group of ratios which measure the overall performance and effectiveness of a company----------

o Profitability Ratios

6.4.4 Capital Structure Ratios Debts and Gearing Ratios

Capital structure ratio is concerned with how much the company owes in relation to its size and whether it is getting into heavier debt or improving its situation. Therefore, it can be called Long-term solvency and stability ratios of a firm. These are the two main reasons why companies should keep their debt burden under control:First, when a company is heavily in debt, and seems to be getting even more heavily into debt, the thought that should occur to you is that this cannot continue. If the company carries on wanting to borrow more, banks and other would-be lenders are very soon likely to refuse further borrowing and the company might well find itself in trouble.

Second, when a company is earning only a modest profit before interest and tax, and has a heavy debt burden, there will be very little profit left over for shareholders after the interest charges have been paid. And so, if interest rates were to go up or the company was to borrow even more, it might soon be incurring interest charges in excess of PBIT. This might eventually lead to the liquidation of the company.

The **four ratios** that are particularly worth looking at are:

- The debt ratio
- The gearing ratio;
- Interest cover;
- The cash flow ratio.

THE DEBT RATIO

The ratio is the ratio of company's total debts to its total assets.

a. Assets consist of fixed assets at their balance sheet value, plus current assets.

b. Debts consist of all creditors, whether amounts falling due within one year of after more than one year.You can ignore long-term provisions and liabilities, such as deferred taxation.

There is no absolute rule on the maximum safe debt ratio, but as a very general guide, you might regard 50% as a safe limit to debt. In practice, many companies operate successfully with a higher debt ratio than this, but 50% is nonetheless a helpful

benchmark. In addition, if the debt ratio is over 50% and getting worse, the company's debt position will be worth looking at more seriously



Debt ratio = Total fixed interest charge x 100
Total asset 1

11841 x 100 = 43.2% 10804 x 100 = 42.4%
27,425 1 26,117 1

THE GEARING RATIO

Capital gearing is concerned with a company's long-term capital structure. As with the debt ratio, there is no absolute limit to what a gearing ratio ought to be. Many companies are likely to have difficulty in the future when it wants to borrow even more, unless it can also boost its shareholders' capital, either with retained profits or with a new share issue**.** we find that the company, although having a high debt ratio because of its current liabilities, has a low gearing ratio. It has no preference share capital and its only long-term debt is the 10% debenture stock. The company does not even have a bank overdraft either for including as part of prior charge capital.



Gearing ratio = Total fixed interest charge X 100
Capital employed

11841 x 100 = 46% 10804 x 100 = 44.4%
25729 1 24317 1

INTEREST COVER

The interest cover ratio shows whether a company is earning enough profits before interest and tax to pay its interest costs comfortably, or whether its interest costs are high in relation to the size of its profits, so that a fall in PBIT would then have a significant effect on profits available for ordinary shareholders.



Interest cover equals = Profits BeforeInterest and Tax

Interest Charges

3909 + 500 = 8.8 times 4572+ 428= 11.7 times

500 428

An interest cover of 2 times or less would be low, and it should really exceed 3 times before the company's interest costs can be considered to be within acceptable limits.

PROPRIETARY RATIO

Proprietary ratio provides a measure of the adequacy of security to pay all liabilities and it is a test for long-term financial stability as well as cushion for creditors. The higher the ratio, the more creditors is secured especially in case of liquidation. Therefore, it is the ratio of shareholders' fund to total assets and it is calculated as;



Shareholder's funds x100

Total assets 1

		2010		2009
Proprietary Ratio	=	15,584 x 100		15,313x100
		27,425 1		26,117 1
		56.8%		58.6%

THE CASH FLOW RATIO

The cash flow ratio is the ratio of a company's net annual cash inflow to its total debts:

a. Net annual cash inflow is the amount of cash which the company has coming into the business each year from its operations. This will be shown in a company's cash flow statement for the year.

b. Total debts are short-term and long-term creditors, together with provisions for liabilities and charges

Obviously, a company needs to earn enough cash from operations to be able to meet its foreseeable debts and future commitments, and the cash flow ratio, and changes in the cash flow ratio from one year to the next, provides a useful indicator of a company's cash position.

6.4.5 Investor Ratio Stock Market or Equity Ratio

Growth ratio can also be called stock market ratio or investor's ratio or investment ratio and equity ratio. It is a measure of quality and market prospect of an investment because the ability of a firm to survive depends on its capability to attract additional equity capital when needed. Therefore, the major factors in the assessment of this capacity are the relationship between the earning available for ordinary shareholders and the other contribution of the ordinary shares.

Therefore, the following are measures of stock market ratio as thus;

- Earnings Per Shares
- Dividend Per Share
- Prices Earning Ratio
- Earnings Yields
- Dividend Yield
- Dividend Covered
- Dividend Payouts

DIVIDEND PER SHARE

This is that part of earnings per share which is received by the shareholders as dividend. How much dividend is paid per shareand it indicates the amount of dividend attributable to each share. It is computed thus;



DPS = Ordinary share dividend (Gross)

Number of ordinary shares

Dividend per share = $\frac{1{,}800{,}000 \times 100}{16{,}000{,}000}$ $\frac{1{,}696{,}000 \times 100}{16{,}000{,}000}$

= 11.25k 10.60k

This indicates that dividends and earnings attributable to each share is lower and may send a wrong signal to the investors and potential investors, and may also have a negative effect on the share price.

EARNINGS PER SHARE

Earnings per share can be used in measuring the performance of companies as well as in comparing the result of several years. This ratio shows the profits attributable to each equity share based on the profit generated for the period to the ordinary shares ranking for dividend. The formula is as follows 

EPS = $\frac{\text{Profit after tax - preference dividend}}{\text{Number of ordinary share}}$

	2010	2009
Earnings per share	= $\frac{2{,}071{,}000}{16{,}000{,}000} \times \frac{100}{1}$	$\frac{2{,}572{,}000}{16{,}000{,}000} \times \frac{100}{1}$
	= 12.94K	16.08k

Where the reporting entity is group; the profit will be reduced by the profit of the subsidiaries attributes to Non-controlling interest. EPS is used to measure the market value of a share in conjunction with the price earnings ratio. Hence, EPS is a part of ratio that is computed and reported as parts of the financial statements of a reporting entity.

PRICE EARNING RATIO

This ratio provides adequate yardstick for assessing the relative worth of share. It expresses the relationship between the market price per share and the amount of earnings

attributable to a single share and therefore, it relates the market price to the earnings per share. The limitations of this ratio derive largely from those associated with earnings per share. In addition, share price is not an absolute indicator of company performance but can reflect for example the general state of the market.



Market price per share

Earnings per share

= 500k = 37 times 700k = 44 times

12.94k 16.08k

A high P/E ratio indicates strong shareholder confidence in the company and a lower P/E ratio indicates lower confidence.

- High P/E ratios tend to indicate that a company wills _____ ceteris paribus. A. Grow quickly. B. Grow at the same speed as the average company. C. Grow slowly. D. Not grow.
  - ANS: A- Grow quickly
- For most firms, P/E ratios and risk: A. Will be directly related. B. Will have an inverse relationship. C. Will be unrelated. D. Will both increase as inflation increases?
  - ANS: B
- Low P/E ratios tend to indicate that a company will…….. ceteris peribus (a) grow quality (b) grow at the same speed as the average company (c) grow slowly (d) not grow
  - ANS: C

EARNING YIELD

Earning yield is the ratio of the earnings per share to the market value of shares. This ratio is used to determine possible returns on investment in the company's shares at the existing market value. It gives the rate at which earning is being capitalized by the stock market. It indicates the maximum rate of income expected by equity investors and also it tell us the number of years within which the investor's capital outlay will,

at the present level of earnings, be recoupled either by way of dividend or capital appreciation or by virtue of retained earnings. Earning yield is calculated as thus;



Earning yield = Earnings per share x 100

Market price per share 1

12.94 X 100 = 2.6% 16.08 X 100= 2.3%

500 1 700 1

- The higher the ratio the faster the growth of the market is expecting in the company future.

Earning yield is the reciprocal of price earnings ratio which shows the market view of the future prospects of the share. This ratio gives capitalization rate and it is the rate at which the stock market capitalizes the value of the current earnings.

DIVIDEND YIELD

Dividend yield is the dividend as a percentage of market prices of share and it indicates the return attributable to each share relative to the price paid for the acquisition of such share. It shows how capital employed has been efficiently used and so indicated the minimum rate of return expected by the equity investor and this is based on dividend declared during the year in respect of any type of share it is calculated thus;



Annual dividend per share X 100

Market price per share 1

Dividend Yield =11.25 x 100 = 2.3% 10.60 x100=1.5%

500 1 700 1

The dividend yield indicates how the capital employed is being efficiently utilized in comparison with the past years or with alternative investments or returns from other companies in the same industry.

DIVIDEND COVER

This indicates the number of times dividend per shares is covered by earning per share and it measures the relationship between earnings and dividend per share. It shows how many times the company can cover the dividend as well as the ability of a company to pay dividend out of profit generated. It is calculated thus;



Earnings per share (in times)

Dividend per share

Dividend cover = Earnings per share OR Profit after tax

Dividend per share total Dividend

Dividend cover = 12.94 16.08

11.25 10.60

OR

2,071 2, 2572

1,800 1,696

= 1.2times 1.5times

The higher it is, the smaller the amount of dividend paid out. The higher the dividends cover, the more likely it is that the current dividend can be sustained in the future and if dividend cover is higher than the local average, it means that the company may probably maintain dividends in the future. Thus, a higher dividend cover indicates that only a small portion of earnings has been distributed as dividends while a substantial portion has been ploughed back into the business.

DIVIDEND PAYOUTS

Dividend payout ratio is the percentages of earnings paid by ordinary shares as way of dividends and thus, it a reciprocal of dividend cover.



Dividend payment ratio= DPS X 100

EPS 1

Dividend payment ratio= 11.25 X 100 10.60 X 100

12.94 1 16.08 1

= 86.9% =65.9%

- An investment ratio which relates the dividends announced for the period to the earnings available for dividends which were generated in that period is: A. Dividend payout ratio. B. Dividend per share. C. Earnings per share. D. Earnings cover ratio

o ANS: A

- Which of the following is not an investment Ratio

A. Quick Asset Ratio

B. Dividend Cover

C. Earnings Yield

D. Dividend per share

o ANS: A-Quick Asset Ratio

6.5 LIMITATIONS OF FINANCIAL RATIOS

1. Changing price levels may invalidate attempts to compare ratios over years
2. Use of different accounting policies may render inter-firm comparison less meaningful.
3. In some cases, ratios may be interpreted differently by different users of accounting information.
4. Calculation of ratios from historical figures renders then less useful for making future decisions
5. Ratios are less useful unless they are supported by some other qualitative information. This is because, not all information about a business is fully reflected in its financial statement.

6.5.1 Comparisons of Financial Ratios of Companies in the Same Industry

Making comparisons between the results of different companies in the same industry is a way of assessing which companies are outperforming others.

a. Even if two companies are in the same broad industry (for example retailing) they might not be direct competitors. For example, Woolworths does not compete directly with Sainsbury's. Even so, they might still be expected to show broadly similar performance, in terms of growth, because a boom or a depression in retail markets should affect all retailers in much the same way. The results of two such companies

can be compared, and the company with the better growth and accounting might be considered more successful than the other.

b. If two companies are direct competitors, a comparison between them would be particularly interesting. Which has achieved the better ROCE, sales growth, or profit growth? Does one have a better debt or gearing position, a better liquidity position or better working capital ratios? How do their P/E ratios, dividend cover and dividend yields compare? And so on.

Comparisons between companies in the same industry can help investors to rank them in order of desirability as investments, and so judge relative share prices or future prospects. It is important, however, to make comparisons with caution: a large company and small company in the same industry might be expected to show different results, not just in terms of size, but in terms of:

a. Percentage rates of growth in sales and profits;

b. Percentage of profits re-invested. Dividend cover will be higher in a company that needs to retain profits to finance investment and growth;

c. Fixed assets. Large companies are more likely to have freehold property in their balance sheet than small companies



SUMMARY

In this Study Session, you were exposed to the concept of ratios analysis and its interpretation. Comparing ratios over time within the same business to establish whether the business is improving or declining, and comparing ratio between similar businesses to see whether the company you are analyzing is better or worse than average within its own business sector. Ratio analysis on its own is not sufficient for interpreting company accounts and there are other items of information which should be looked at. A company must be able to pay its debts when they fall due, and in the balance sheet, foreseeable creditors to be paid are represented by current liabilities, that are amounts falling due with one year. If an analysis of a company's

published accounts is to give us some idea of the company's liquidity, profitability ratios are not going to be appropriate for doing this. Instead, we look at liquidity ratios and working capital turnover ratios.

SELF ASSESSMENT QUESTION

SAQs 6.1 (**Test learning outcomes of 6.1, 6.2, 6.3, 6.4,6.5)**

1. A firm has a (net profit/pretax profit) ratio of 0.6, a leverage ratio of 2, a (pretax profit/EBIT) of 0.6, an asset turnover ratio of 2.5, a current ratio of 1.5, and a return on sales ratio of 4%. What is the firm's ROE? A. 4.2% B. 5.2% C. 6.2% D. 7.2%

2 Edet Farm Supplies has an 8percent return on total assets of N300,000 and a net profit margin of 5percent. What are its sales? A. N3,750,000 B. N480,000 C. N300,000 D. N1,500,000

3 A firm's current ratio is above industry average; however, the firm's quick ratio is below industry average. These ratios suggest which of the following?

A. The firm has relatively more total current assets and even more inventory than other firms in the industry. B. The firm is very efficient at managing inventories. C. The firm has liquidity that is superior to the average firm in the industry. D. The firm is near technical insolvency.

4 Inter-Firm analysis could be rendered invalid by;

A. The use of different accounting dates by the various companies B. Application of different accounting policies C. Operating in different market segments D. The differences in the management structures and technical expertise E The product range and sales mix variations among the companies

SAQs 2 Activity Ratio (**Test learning outcomes of 6.4.2, 6.4.3, 6.4.4)**

The table below shows selected data from XYZ Limited's financial statements:

	2010	2011
Sales	9,800	10,500
COGS	6,100	6,700
Purchases	6,000	6,600
Inventory	2,400	2,370
Accounts receivable	3,900	4,400
Accounts payable	2,300	2,400

5. What is XYZ's receivables collection period for both 2010 and 2011? (Assume 365 days in a year). 2010 2011 A. 40 days 42 days B. 145 days 153days C. 233 days 239 days D. 237 days 243 days

6. What is XYZ's inventory turnover for 2010 and 2011? A. 2.10 2.33 B. 2.54 2.83 C. 3.43 3.58 D. 4.08 4.43

7. What is the working capital cycle for XYZ in 2011(assume 365 days in a year)?

A.42 days B. 101 days C. 149 days D. 243 days

8. You are told that XYZ's payables period dropped from 140daysin 2010to 133days in 2011. What is the most likely impact of this on the liquidity position of XYZ Limited?

A. It will result in an improvement in the liquidity position. B. It will impact the liquidity position negatively. C. It has no impact on the liquidity position. D. None of the above

SAQs 6.3 Investment Ratio (**Test learning outcomes of 6.4.4)**

An analyst gathered the following information on Ajasco Limited.

Share price	₦ 50.00
Shareholders' Equity	₦ 200 million
Retention rate	60%
Shares outstanding	20 million
Expected sales	₦ 80 million
Total operating expenses	₦34 million
Profit after tax	₦10 million

Note: Operating expenses include N4.0 million in depreciation and amortization. Use the following data to answer Questions 1 to 6.

- 9.Ajasco's book value per share is: A. ₦2.00 B. ₦5.00 C. ₦10.00D. ₦ 12.00
- 10.Ajasco's earnings per share is: A. ₦0.2 B. ₦0.5 C. ₦2.0 D. ₦10.0
- 11.Ajasco's Price to book ratio is: A. ₦2.0 B. ₦3.0 C. ₦4.0 D. ₦5.0
- 12.Ajasco's Price/earnings ratio is: A. 10 times. B. 20 times. C. 50 times. D. 100times.
- 13. Ajasco's dividend payout ratio is: A. 0.2 B. 0.4 C. 0.6 D. 0.8
- 14.Ajasco's cash flow per share is: A. ₦2.0 B. ₦2.5 C. ₦3.0 D. ₦4.0

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STUDY SESSION 7

ANALYSIS OF FINANCIAL DECISION



INTRODUCTION

In Study Session 2, we have discussed about investment decisions as the first financial decision making in finance. Investment decision captures the risk under the condition of certainty and uncertainty of a project. In reality, however, a large area of investment decisions falls in the realm of risk and uncertainty. It is important to note that risk and uncertainty go hand in hand. Wherever there is uncertainty, there is also risk. In this Study Session, however, we will concentrate on the popular methods of investment decision-making. Each investment proposal should be assessed on the basis of its ability to achieve the minimum expected return by the providers of the funds that will be channeled to that proposal. Also, in theory, a number of techniques are suggested to handle risk. Some of these include: Simulation techniques, sensitivity analysis,and standard deviation, co-efficient of variation and decision trees. It is important to emphasize that we implore Net cash flow in evaluating the payback period and Net present value and not the accounting profit.



Learning objectives

After studying this chapter, readers should able to:

7.1 Define capital expenditure and state how it is imperativeto the company;

7.2 State and explain the stages involved in capital expenditure planning and control:

7.3 Know the benefits of capital expenditure planning

7.4 Identify the capital investment appraisal techniques available to a company;

7.5 Appraise a typical project using appropriate technique; and

7.6 Advise on the selection of a suitable project based on agreed decision criterion

7.7 Evaluate investment projects using traditional method of investment appraisal;

7.8 Carry out sensitivity analysis of a projects outcomes

7.9 Calculate the expected net present value (ENPV) of projects;

7.10 Discuss and state the qualitative factors affecting capital investment decisions.

7.1 CAPITAL EXPENDITURE PLANNING AND CONTROL

Capital expenditure is a means of planning and control in an organisation, it involves decision on whether or not to acquirenon-current assets and other long-term projects of the company. Capital expenditure includes all tangible and intangible assets which are expected to produce benefits to the firm over a period of time (not less than one year). These are critical decisions to the future profitability and success of the company. Pandey (1989) defined capital expenditure planning and control as “a process of facilitating decisions covering expenditure on long-term assets”. Such investment includes purchase of equipment, acquisition of land and buildings, introduction of new products and so on. Investment decisions are expected to yield economic benefits to the investor at some other point in time. Usually the outlay precedes the benefit.Investment decisions tend to be of crucial importance and integral part of the corporate plan of an organisation.

7.2 THE CAPITAL BUDGETING PROCESS INCLUDES:

a. Identification

b. Development

c. Evaluation

d. Authorization, and

e. Control

7.2.1 Identification of Investment Opportunities

The most critical aspect of investment process is the Identification of investment proposals and should be guided by the overall strategic considerations of a firm because it will involve the development of cash estimates. Once the investment proposal has been identified, each potential idea should be developed into a project and submitted for

appraisal to determine its viability and worthiness. In this respect, there would be a need to consider all cash flows, to determine the true profitability of the project.A sound appraisal technique which should maximize the shareholders wealth should be used to measure the economic worth of the projects.

7.2.2 Developing Cash Flow Estimation

Estimation of cash flow in a reporting entity is a difficult task because the future is uncertain. The risk associated with cash flows should be handled properly, by eliminating the risk factor and taken into account the decision process in the estimation of cash flows. This therefore, requires collection and analysis of cash flows for all quantitative and qualitative data. The next process is the evaluation of the net benefits.

7.2.3 Evaluation of Net Benefits

In selecting a method or methods of investment evaluation, a company should take adequate care to ensure that the criteria selected would lead, to the net increase in the company's wealth, that is, its benefit exceeds, its cost adjusted for time value and risk. We can employ the net present value method and other forms of investment appraisal to determine the suitability of the project. However, other methods in use apart from the NPV are the payback period, the internal rate of return (IRR), accounting rate of return (ARR) and profitability index (PI). Therefore we apply the use of a minimum required rate of return.

- When managers are making decisions involving capital investments, what should the decision seek to achieve?

o ANS; Investment decisions must be consistent with the objectives of the particular business. For a private sector business, maximizing the wealth of shareholders is usually assumed to be key objective.

7.2.4 Authorization to Spend

The approval of acquisition of capital project depends on the reporting entity. When large sums of capital expenditure are involved, the authority for the final approval may rest with the Board or the top management which may be the Chief Executive of the company. Funds are usually appropriated for capital expenditure from the capital budget after the final selection of investment proposals. Meanwhile top management is to ensure that funds are spent in accordance with appropriations made in the capital budgetand thus, approving investment proposal differs from one company to another.

7.2.5 Control and Monitoring of Capital Projects

A capital project reporting system is required to review and monitor the performance of investment projects during and after completion. This is also a meansof comparing the actual performance with original estimates and any deviation will be corrected by control measures. It will require regular reporting monthly, quarterly or half-yearly.

7.3 INVESTMENT APPRAISAL TECHNIQUES

The essential feature of investment decision is time. Investment decisions affect the value of the firm and this will increase, if investments are profitable and add to shareholders' wealth. It is, therefore, important to ensure that investments are evaluated on the basis of criteria which are compatible with the objective of the shareholders' wealth maximization. The investment appraisal examine the different methods of selecting investment in long-term assets, that is, capital expenditure, to be able to determine the most valid technique of evaluating an investment project.

Investment decisions taken under uncertainty are necessarily subjective. However, analysts have devised some decision rules to impart some objectivity to the subjective decisions, provided decision makers are able to identify the possible states of nature and can estimate the outcome of each strategy.The methods of measuring investment appraisal can be divided into two as follows;

- Non-Discounted Cash Flow Techniques

- Discounted Cash Flow Techniques

7.3.1 Non-Discounted Cash Flow Techniques

The non-discounted cash flow technique is one of the traditional methods of investment appraisal which does not consider time value of money and these include:

a. Payback period (PB); and

b. Accounting rate of return (ARR)

- The essence of discounting is to take care of… (a) inflation (b) uncertainty (c) timing of cash flows (d) amount of cash flows (e) taxation of cash flows

o A

PAYBACK PERIOD TECHNIQUE

Payback period tells us the number or length of time an investment will recoup back its initial investment and also, its cash outflows will equate the cash inflows from a project. This technique measures projects on the basis of the period over which the investments payback itself or the period of recovery of the initial investment. This means that the full recovery of the projects cash outflows would be measured through the cash inflows. This method pays attention to the shortness of the project that is, the shorter the period of recovery of initial investment or capital outlay, the more acceptable the project becomes using the payback period. Where there is constant or uniform cash income stream or annual net cash flows from a project, the payback period is calculated thus:-

Payback period = Initial investment (capital outlay)

Annual net cash flow

DECISION RULE

- If the payback period calculated for a project is less than the maximum or standard payback period set by management it would be accepted, if not, it would be rejected.
- If the firm has to choose among two mutually exclusive projects, the project with shorter payback period will be selected.

ADVANTAGES OF PAYBACK METHOD

i. It is simple to calculate and better understood of all the methods of capital budgeting.

ii. It least exposes the firm to the problem of uncertainty since it focuses on shortness of project to pay back the initial outlay.

iii. It is a fast screening technique especially for the firms that have liquidity problems

DISADVANTAGES OF PAYBACK METHOD

i. It does not take account of the cash inflows earned after the payback period

ii. It does not take into account the time value of money

iii. It does not take into account the risk associated with each project and the attitude of the company to risk.

ILLUSTRATION 1

DAAP Ltd, a manufacturing company, is faced with the problem of choosing between two mutually exclusive projects.

Project A requires a cash outlay of ₦ 250,000 and generates a net cash flow of ₦ 100,000 per year for 4 years.

Project B costs ₦ 150,000 and its expected net cash flow of ₦ 65,000 ₦ 55,000, ₦ 40,000 and N50,000 over its life of 4 years. If the management of the company had set the maximum acceptable period of 2½ years, which of the projects should be embarked upon?

SOLUTION 1

Project A

Payback Period = $\frac{\text{Initial capital outlay}}{\text{Annual net cash flow}}$

$= \frac{₦\ 250,000}{₦\ 100,000} = 2½$ years

Project B

Year	Net cash flow ₦	Cumulative net cash flow ₦
0	(150,000)	(150,000)

1	65,000	(85,000)
2	55,000	(30,000)
3	40,000	10,000
4	50,000	60,000
	30,000	

Payback period = 2yrs + $\frac{40,000}{30,000}$ x 12 in months

= 2yrs 9 months

Decision: Since the maximum acceptable period set by the management is 2½ years, only project A meets the acceptance criteria and should be accepted while project B should be rejected.

a. ACCOUNTING RATE OF RETURN (ARR)

The Accounting Rate of Return (ARR) technique is derived from the concept of return on capital employed (ROCE) which is also known as return on investment (ROI). It uses accounting information provided by the financial statements to measure the profitability of an investment. It is calculated by dividing the average after-tax profit by the average book value of the investment during its life. Therefore, it uses accounting profit by subtracting depreciation from net cash flows. The formula is:

$$ARR = \frac{\text{Average Income}}{\text{Average investment}} \times \frac{100\%}{1}$$

Decision Rule

- The rule is to invest in all projects whose accounting rate of return (ARR) is higher than the company's pre-determined minimum acceptable rate.
- Where mutually exclusive project are concerned, the rule is to accept the project with the highest ARR.

ADVANTAGES OF ACCOUNTING RATE OF RETURN

i. It is easy to calculate
ii. It is simple to understand and use
iii. It incorporates the entire stream of income in calculating the project's profitability

DISADVANTAGES OF ACCOUNTING RATE OF RETURN

i. It uses accounting profits in appraising the projects
ii. The averaging of income ignores the time value of money
iii. It uses an arbitrary cut off yardstick
iv. It is an average concept and as such will hide the sizes and timing of the individual cash flows.
v. It does not take into considerations the risk associated with each project as well as the attitude of the management to risk.
vi. There is no unique definition for ARR. For instance "average profit" may be profits after depreciation, interest and before tax or profits after depreciation, interest and tax which is adopted in the illustration 9-2. Initial investment could be initial investment plus scrap value or just investment which is adopted in the illustration.

- What is another name for Accounting Rate of Return in investment appraisal?
  - ANS; Return on Capital Employed or Return on Investment

ILLUSTRATION 2

Asua invested the sum of ₦800,000 in a KALOKA project. He estimates that the project will yield the following after tax returns annually for the next five years, viz₦20,000, ₦40,000, ₦60,000, ₦80,000 and ₦120,000 respectively. The Kaloka house is expected to be depreciated on a straight line basis.

Required

Provide the accounting rate of return of this project.

Solution 2

AlhajiUmoru

Year	1	2	3	4	5	Average
Earnings	₦	₦	₦	₦	₦	₦
After tax	20,000	40,000	60,000	80,000	120,000	64,000
Book value of investment						

Beginning (a)	800,000	640,000	480,000	320,000	160,000	
Depreciation	(160,000)	(160,000)	(160,000)	(160,000)	(160,000)	
End (b)	640,000	480,000	320,000	160,000	---	
Average $\left(\frac{a+b}{2}\right)$	720,000	560,000	400,000	240,000	80,000	400,000

Accounting Rate of Return = $\frac{64,000}{400,000} \times \frac{100\%}{1} = 16\%$

- Which ONE of the following is not advantage of accounting rate of return? (a) easy to calculate (b) simple to understand and use (c) inexpensive as it uses existing accounting information (d) incorporates entire stream of income (e) it takes into account the time value of money

o E

7.3.2 Discounted Cash Flow (DCF) Techniques

These include

a. Net present value (NPV);

b. Internal rate of return (IRR);

c. Profitability index (PI); and

d. Discounted payback period.

In evaluating an investment, three steps are involved, these are:

- Estimation of cash flows;
- Estimation of the required rate of return (opportunity cost of capital); and
- Application of a decision rule for making the choice

a. NET PRESENT VALUE (NPV) METHOD

Net present value (NPV) is one of the discounted cash flow (DCF) techniques that recognizes the time value of money. It is the net contribution of a project to its owner's wealth, that is, the present value of future cash flows minus the present value of initial capital investment. With the present value method, all cash flows are discounted to their present values using the required rate of return. The formula for calculating NPV can be written as follows:

$$NPV = \frac{C_1}{(1+r)} + \frac{C_2}{(1+r)^2} + \frac{C_3}{(1+r)^3} + \ldots\ldots \frac{C_n}{(1+r)^n} - C_0$$

OR

$$NPV = \sum_{t=1}^{n} \frac{C_t}{(1+r)} - C_0$$

Where:

C_1, C_2 …. Represent cash inflows in year 1,2…..n

"r" represents the opportunity cost of capital

C_0 is the initial cost of the investment

n is the expected life of the investment and

t=1 up to and include t=n

Decision Rule:

Accept all projects that produce positive net present value (NPV)

Accept if NPV > 0

Reject if NPV < 0

May accept or reject if NPV = 0

If mutually exclusive projects are involved, the rule is to accept the project that produces the highest positive net present value which will increase the wealth of a shareholder

- A company intends to undertake an investment programme which has initial amount of N2.5m. The program is expected to generate annual net cash inflows of N270, 000 for an indefinite future period. The company's opportunity cost of fund is 12 percent per annum. What is the net present value of the project? (a) N2,550,000 (b) N2,000,000 (c) N2,450,000 (d) (N250,000) (e)N2,350,000

o ANS; D

ADVANTAGES OF NPV

i. It recognizes the time value of money;

ii. It uses all cash flows occurring over the entire life of the project;

iii. It measures in absolute terms (Naira value) the increase in the wealth of the shareholders; and

iv. It facilitates measuring of cash flows in terms of present values. This implies that if the values of separate assets are known, the firms value can simply be found by adding their values. This is called the value-additivity principle.

DISADVANTAGES OF NPV

i. It is more difficult to calculate than the Payback and the Accounting Rate of Return (ARR); and

ii. It relies heavily on the correct estimation of the cost of capital, that is, where errors occur in the cost of capital used for discounting, the decision would be misleading.

ILLUSTRATION 3

A machine costing N200,000 will provide an annual net cash inflow of N60,000 for six years at a cost of capital of 10 percent.

i. Calculate the net present value (NPV) of the machine

ii. Should the machine be purchased?

SOLUTION 3

(i)

Year	Cash flows N	DCF @ 10%	PV N
0	(200,000)	1.000	(200,000)
1	60,000	0.909	54,540
2	60,000	0.826	49,560
3	60,000	0.751	45,060
4	60,000	0.683	40,980
5	60,000	0.621	37,260
6	60,000	0.564	33,840
		NPV	61,240

(ii) Decision: The machine should be purchased since the NPV is positive, that is NPV>0.

- What is the economic implication of a project that has a positive Net Present Value..
  - For a project to have positive Net Present Value it will increase the wealth of a shareholders

b. INTERNAL RATE OF RETURN (IRR)

The internal rate of return (IRR) method is another discounted cash flow technique which takes account of the time value of money. It is also known as yield of a project, marginal efficiency of capital, rate of return over cost, time adjusted rate of internal return and so on. It is defined as the cost of capital for which the NPV of a project would be zero.

It is a break-even point cost of capital and it also serve as the cost of capital or discount rate that will equate the cash inflows of a project with the cash outflows of that project.

The formula for calculating the IRR is given as:

$$IRR = \sum_{t=1}^{n} \frac{C_t}{(1 + r)^t} - C_0 = 0$$

The above formula shows that it is the same as that for calculating NPV. The only difference is that in NPV method, the required rate of return is assumed to be known while in IRR method the required rate of return has to be determined, hence, the result is equated to zero. An alternative to the above formula is the trial-and-error. This is also known as interpolation method. In this method, the discounting factor yielding a positive

NPV is improved to move towards negative and a midway is discovered to arrive a zero.

The formulae:

$$IRR = L_d + \frac{NPV_p}{NPV_p + NPV_N} (H_d - L_d)$$

Where:

L_d= Lower Discount factor yielding positive NPV

H_d = Higher Discount factor yielding negative NPV

NPV_P = Positive NPV

NPV_N = Negative NPV

DECISION RULE

Accepts all projects whose IRR are greater than the company's cost of capital

i.e. Accept if r>k

Reject if r<k

May accept or reject if r=k

Where r= internal rate of return and k= cost of capital

If mutually exclusive projects are being considered the rule is to accept the project that produces the higher IRR.

ADVANTAGES OF IRR

i. It recognizes the time value of money;
ii. It considers all cash flows occurring over the entire life of the project;
iii. It gives the same acceptance rule as the NPV method
iv. It is consistent with the shareholders wealth maximization objective

DISADVANTAGES OF IRR

i. It is more difficult to calculate than the other methods.
ii. It can give misleading and inconsistent results when the NPV of a project does not decline with discount rates.
iii. In some cases, it fails to indicate a correct choice between mutually exclusive projects.
iv. Unlike in the case of NPV, the additivity principle does not hold when IRR method is used – IRR projects do not add.
v. Sometimes, it yields multiple rates

- What is the discount rate at which Net Present Value equals zero
  - ANS; Internal Rate of Return

ILLUSTRATION 4

Using the details in illustration 3, calculate the IRR of the machine

SOLUTION 4

Year	Cash flows	DCF	PV	DF @ 20%	PV
	N	@ 10%	N	N	N
0	(200,000)	1.000	(200,000)	1.000	(200,000)
1	60,000	0.909	54,540	0.833	49,980
2	60,000	0.826	49,560	0.694	41,640
3	60,000	0.751	45,060	0.579	34,740
4	60,000	0.683	40,980	0.482	28,920
5	60,000	0.621	37,260	0.402	24,120
6	60,000	0.564	33,840	0.335	20,100

NPV 61,240 (500)

IRR = 10% + N61,240 x (20% - 10%)
N61,240 – (-500) 1
= 10% + N61, 240 x 10%
N61, 740
= 10% + 9.92%
IRR= 19.92%

- Which of the following is regarded, in theory as a traditional technique of investment appraisal? (a) accounting rate of return (ARR) (b) internal rate of return (IRR) (c) discounted payback (d) net present value (NPV) (e) profitability index (PI)

o ANS; B

c. PROFITABILITY INDEX (PI) TECHNIQUE

The profitability index (PI) method is another cash flow technique. It is the ratio of the present value of cash inflows, at the required rate of the investment. It may be gross or net that, gross minus one.

The formula is given as follows:

PI = PV of cash inflows (NPV + Initial cash outlay)
Initial cash outlay

OR

PI = NPV of Project
Initial Cash Outlay

DECISION RULE

Accepts all projects whose PI is positive or greater than 1 (one)

i.e. Accept if PI>0 or positive

Reject if PI<0 or negative

May accept or reject if PI=0

ADVANTAGES OF PI

i. It recognizes the time value of money;
ii. It is a variation of the NPV method and requires the same computation as in the NPV method

iii. It is a relative measure of a project's profitability since the present value of cash inflows is divided by the initial cash outflow.

iv. It is generally consistent with the wealth maximization principle.

DISADVANTAGES OF PI

i. It can only be used to choose projects under simple, one period capital constraint situations.

ii. It does not work when mutually exclusive projects or dependent projects are being considered.

ILLUSTRATION 5

Using the details in illustration 3 calculate the PI of the machine

SOLUTION 5

$$PI = \frac{\text{NPV of Project}}{\text{Initial Cash Outlay}} = \frac{₦61,240}{₦200,000} = 0.31$$

OR

$$PI = \frac{\text{PV of cash inflows (NPV + Initial cash outlay)}}{\text{Initial cash outlay}}$$

$$= \frac{₦61,240 + ₦200,000}{₦200,000}$$

$$= \frac{₦261,240}{₦200,000} = 1.31$$

d. DISCOUNTED PAYBACK PERIOD TECHNIQUE (DPPT)

This technique is an improvement over the payback method. It is aimed at overcoming the problem of the time value of money disadvantage of the normal payback method, by incorporating into its calculation, the discount factor. In the discounted payback period method, the cash flows are discounted and used in the calculation of the payback period.

ADVANTAGES OF DISCOUNTED PAYBACK PERIOD TECHNIQUE

i. It recognizes the time value of money

ii. It focuses on shortness of project to payback the initial outlay

iii. In addition to the fact that it recognizes the time value of money, it has all the advantages of the payback method.

DISADVANTAGES OF DISCOUNTED PAYBACK PERIOD TECHNIQUE

i. It does not take into account the cash inflows earned after the payback period

ii. It does not take into account the risks associated with each project and the attitude of the company to risk.

iii. Except that it uses discounted cash flows, it has all the disadvantages of payback method.

- One of the traditional methods of capital budgeting decision criteria is… (a) net present value (b) accounting rate of return (c) profitability index (d) internal rate of return
  - ANS; B
- …….. Is the number of timesthat an investment will recoup back its initial capital outlay?
  - ANS; PAYBACK PERIOD

ILLUSTRATION 6

A machine will cost N300,000 and will provide an annual net cash inflow of N100,000 for five (5) years. The opportunity cost of capital is 10 percent.Calculate the discounted payback period of the machine

SOLUTION 6

Cash year	Cash Flows	DF @ 10%	PV of Cash Flows
	N		N
0	(300,000)	1.000	(300,000)
1	100,000	0.909	90,900
2	100,000	0.826	82,600
3	100,000	0.751	75,100
4	100,000	0.683	68,300
5	100,000	0.621	62,100
		NPV	79,000

Therefore, discounted payback period method, the time required to recover the investment is calculated as follows:

Year	PV of cash flows	cumulative PV of Cash Flows

	N	N
0	(300,000)	(300,000)
1	90,000	(209,100)
2	82,600	(126,500)
3	75,100	(51,400)
4	68,300	16,900
5	62,100	79,000

Discounted payback is 3yrs + $\frac{51,400}{68,300}$ x 12 months

= 3yrs + 9.031 months = 3yrs 9 months.

7.4 CAPITAL BUDGETING INVOLVING RISK AND UNCERTIANTY

Uncertainty and risk analysis in capital investments decision play a vital role because the real economic worth of a project cannot be properly determined if they are not considered. The concepts of risk and uncertainty can be better explained and understood in contrast to the concept of certainty

7.4.1 Uncertainty

Uncertainty can be describedas a situation where there is no such knowledge of probabilities about the future outcomes.Here, let us have a closer look at the **concept ofcertainty**and this is the state of perfect knowledge about the market conditions. In the state of certainty, there is only one rate of return on the investment and that rate is known to the investors. However, uncertainty refers to a situation in which there **is more than one outcome** of a business decision and the probability of no outcome is known or can be meaningfully estimated. The unpredictability of outcome may be due to lack of reliable **market information**, inadequate **past experience** and high **volatility of the market** conditions. For example, if an Indian firm, highly concerned with population burden on the country, invents an irreversible sterility drug, the outcome regarding its success is completely unpredictable.

Consider the case of insurance companies. It is possible for them to predict fairly accurately the probability of death rate of houses, and so on, but it is not possible to predict the

death of insured individual. Therefore, long-term investment decisions involve a great deal of uncertainty with unpredictable outcome. But, in reality, investment decisions involving uncertainty have to be taken on the basis of whatever information can be collected, generated and estimated. For the purpose of decision making, we need to assign an a priori probability to the outcome.

- One of the basic characteristics of capital budgeting decision is that……. (a) decision on its reversible (b) the minimum life span of the project may be two years (c) the amount involved is huge in size (d) the amount involved is small in size

o ANS; C

7.4.2 RISK

Risk is a situation in which various outcomes to a decision are possible and the probabilities to those alternative outcomes are known. From business decision-making point of view, risk refers to a situation in which a business decision is expected to yield more than one outcome and the probability of each outcome is known to the decision makers or can be reliably estimated. In common parlance, risk means a low probability of an expected outcome.For example, if a company doubles its advertisement expenditure, there are three probable outcomes: (i) its sales may more-than-double, (ii) it may just double, or (iii) may be less than double. The company has the knowledge of these probabilities or has estimated the probabilities of the three outcomes on the basis of its past experience as (i) more-than-double – 10% (or 0.1), almost double – 40% (or 0.4), and (iii) less than double – 50% (or 0.5). It means that there is 90% risk in more than- doubling the sales, and in doubling the sale, the risk is 60% and so on.

7.5 METHODS OF TREATING RISK IN CAPITAL BUDGETING

The method for treating risk assessment in capital budgeting involves the probabilityapproach and Non-probability approach. The probability approaches can be divided to capture Expected Value, variance, standard deviation, Co-efficient of Variation, Risk adjusted discount rate certainty co-efficient factor.

7.5.1 Expected Value

The expected value is the process of multiplying the various cash income stream with their respective profitability level and it serves as the best measure of central tendency. The decision making it accepts project with the highest expected value for a mutually exclusive project.

7.5.2 Variance

The variance of a project measures the extent of risk that is associated to project. Variance is the deviation of the expected value from the cash flows and multiplies by the probabilities of the risk factors and finds the summation. It measures the extent of risks associated to a project and the decision under this approach depends on the type of investors. For a risk neutral investor, it will want to take a lower risk with a low return, for Risk averters, he will takes some risks with higher return and for a risk lover or seeker the higher the risk, the higher the return.

7.5.3 Standard Deviation and Variance

Standard deviation is an absolute measure of risk. It measures the dispersion of cash flow or the spread about the mean value. TheStandard deviation is a proxy measure of total risk for the investment and takes no account of possible offsetting variations in other projects that may be undertaken by the same investor.Therefore, it serves as the best measure of dispersion and thus,standard deviation is the square root of variance.

- What is the best measure of dispersion and the instrument for measuring risk
  - **ANS;** Standard deviation

ILLUSTRATION 7

Suppose a firm has to choose between two mutually exclusive projects that cost N3 million each. The following are the possible net cash flows of the project and their associated probabilities, viz:

Project X Project Y

Probability	NCF	Probability	NCF
	₦ '000		₦ '000
0.10	3,000	0.10	2,000
0.20	3,500	0.25	3,000
0.40	4,000	0.30	4,000
0.20	4,500	0.25	5,000
0.10	5,000	0.10	6,000

Determine the standard deviation and variance of each project and advise which of them is preferable.

SOLUTION

Project x

Probability	NCF (x)	Expected value	$(x-\bar{x})$	$(x-\bar{x})^2$	$P(x-\bar{x})^2$
₦ '000	₦ '000	₦ '000	₦ '000		
0.1	3,000	300	(1,000)	1,000,000	100,000
0.2	3,500	700	(500)	250,000	50,000
0.4	4,000	1,600	0	0	0
0.2	4,500	900	500	250,000	50,000
0.1	5,000	500	1,000	1,000,000	100,000
Expected value (EV) $\bar{x}$		4,000			300,000

- The expected value of project X is ₦4000
- Variance of X is ₦300000
- Standard deviation of Project x = √₦ 300,000 = ₦547.72

Project 'Y'

Probability	NCF (x)	Expected value	$(x-\bar{x})$	$(x-\bar{x})^2$	$P(x-\bar{x})^2$
₦ '000	₦ '000	₦ '000	₦ '000		
0.1	2,000	200	(2,000)	4,000,000	400,000
0.25	3,000	750	(1,000)	1,000,000	250,000
0.30	4,000	1,200	0	0	0
0.25	5,000	1,250	1,000	1,000,000	250,000
0.10	6,000	600	2,000	4,000,000	400,000
Expected value (EV) $\bar{x}$		4,000			1,300,000

- The expected value is ₦4000
- Variance of the project is ₦1300000
- Standard deviation of Project Y = √₦ 1,300,000 = ₦ 1,140.18

7.5.4 Co-Efficient of Variation

Co-efficient of variation is a relative measure of risk. It serves as most reliable method of assessing the riskiness of project under consideration because it considers the best measure of dispersion and prorate with the best measure of central tendency. Therefore, it is simply the ratio of standard deviation of possible outcome divided by its expected value, depicted by the following formula:

Co-efficient of variation = $\frac{\text{Standard Deviation}}{\text{Expected Value}} \times \frac{100}{1}$

Decision for an independent project, the lower the co-efficient of variation the less risky is the project and the lower the risk. For a mutually exclusive project, we accept a project that has the lowest co-efficient of variation.

ILLUSTRATION 8

Using illustration 12-4, compute the co-efficient of variation for the two projects.

Suggested solution

$$= \frac{\text{Project X}}{4{,}000} \times \frac{100}{1} = 0.13693$$

$$= \frac{\text{Project Y}}{4{,}000} \times \frac{1140.18}{1} = 0.2850$$

Using this concept, the lower risk of project 'X' has been confirmed. Since both projects will yield the same positive expected value, the firm should choose the project which is less risky. This is project x.

7.5.5 Risk Adjusted Discount Rate

The use of risk-adjusted discount rate is one of the methods used for adjusting the valuation models for risk. The project risk effect is adjusted for in the discounting rate. For the riskiness of a project, a risk premium is determined and added to the risk-free discount rate. If, for instance, a firm evaluates its risk-free projects at 8% and defines extra 4% for risk premium, risky projects will be evaluated at 12%.

This means that:

Risk-Adjusted Discount Rate = Risk Free Rate + Risk Premium

This is used in calculating the net present value (NVP).

7.6 QUALITATIVE FACTORS IN CAPITAL INVESTMENT DECISION

It is not simply the use of the most referred DCF techniques, (quantitative factors) that is important in capital investment decisions, other practical considerations are as equally important. In theory, the use of sophisticated techniques (DCF, IRR and so on) is emphasized since they maximize shareholders wealth. However, in practice, companies give considerable importance to qualitative factors. Since, the reliability of figures could not be achieved without due considerations given to qualitative factors and in this respect judgment play an imperative role. For example, vision of judgment of the future plays an important role in factors like market potential, possibility of changes in technology, trend of government policies and so on, which are judgmental. Therefore, qualitative factors and judgment go together.

The qualitative factors to be considered in capital investment decisions include:

a. Adaptation to the changing market environment-market potential
b. Technological developing/ change or obsolescence. This plays a significant role in guiding investment decisions
c. Employees morale and safety
d. Project's critical utility in the production of main product
e. Strategic importance of capturing a new product first
f. Investors and customers image
g. Legal matters
h. Competitors
i. Risk involved in the project to be undertaken
j. Capabilities of management to cope with the implementation of the project

k. Consumer preference

l. Inflation

m. The environment in which the project is to be undertaken

It is, therefore, important for management to also spend time improving the quality of assumptions and assuring that all the strategic questions have been asked before taking final decisions on capital investments.



SUMMARY AND CONCLUSIONS

You have learnt the definition and stages of Capital expenditure, which is for long-term assets of the company both tangible and intangible etc. Whereas, the expenditure on these assets is now, returns are in the future. There is, therefore need for proper planning and control. The planning and control process involves identification, development, evaluation, authorization and control. You have been exposed to various investment appraisalsfor assessing project criterion under uncertainty and it involves the special appraisal techniques such as payback period, net present values. Here decisions have to be taken on whether or not a particular project is acceptable, based on the use of an appropriate appraisal technique and on the laid down decision criterion, such technique includes the non-discounted cash flow techniques, namely: the ARR and payback period and the discounted cash flow technique such as NPV, IRR and PI. Also, you have been exposed to all these techniques which are methods of incorporating risk into the appraisal process, is the expected value, the standard deviation and variance of the project. In addition to quantitative factors, finance managers should also try to assess any qualitative benefits that accrue to a project before taking final decision. It is fundamental that a company uses the right technique to avoid wrong decisions, bearing in mind the financial implication such decisions can bring to the company. It should be noted that a project must first be properly evaluated before selection. It is the acceptable project that is included in the capital expenditure programme of the company for the year.

SELF ASSESSMENT QUESTIONS

The followings are the self assessment questions the whole of the study session 7 as thus;

1. The essence of discounting is to take care of… (a) inflation (b) uncertainty (c) timing of cash flows (d) amount of cash flows (e) taxation of cash flows
2. Which of the following is regarded, in theory as a traditional technique of investment appraisal? (a) accounting rate of return (ARR) (b) internal rate of return (IRR) (c) discounted payback (d) net present value (NPV) (e) profitability index (PI)
3. A machine cost N3.4m. the machine is expected to produce an average annual cash flows of N850, 000 with a nil salvage value. What is the expected payback period of the machine if the economic useful life of the machine is 6 years? (a) 6 years (b) 4 years (c) 5 years (d) 3 years (e) 2 years
4. Which ONE of the following is not advantage of accounting rate of return? (a) easy to calculate (b) simple to understand and use (c) inexpensive as it uses existing accounting information (d) incorporates entire stream of income (e) it takes into account the time value of money
5. A company intends to undertake an investment programme which has initial amount of N2.5m. The program is expected to generate annual net cash inflows of N270, 000 for an indefinite future period. The company's opportunity cost of fund is 12 percent per annum. What is the net present value of the project? (a) N2,550,000 (b) N2,000,000 (c) N2,450,000 (d) (N250,000) (e)N2,350,000
6. In carrying out sensitivity analysis of a project, what is being tested is…….. (i) The impact of a change in output on input (ii) the impact of a change in more than one input variable at a time on output (iii) The impact of a change in only variable at a time on output (a) (i) only (b) (iii) only (c) (i) and (iii)(d) (i) and (ii) (e) (ii) and (iii)
7. A project cost N8 million and it will generate cash profit as follows;

Year 1 – ₦3.2 million
Year 2 – ₦ 3,250,000
Year 3 – ₦ 3,300,000
Year 4 – ₦ 3,350,000

Determine the project's accounting rate of return (a) 30% (b) 31% (c) 32% (d) 33%

8. The Net Present value of a project has been estimated as follows

Discount Rate(%)	Net Present Value (₦,000)
20	25
22	15

Using the above data, determine the best approximation of the project's internal rate of return (IRR) (a) 22.67% (b) 21.09% (c) 20.6% (d) 21.25%

9. One of the basic characteristics of capital budgeting decision is that……. (a) decision on its reversible (b) the minimum life span of the project may be two years (c) the amount involved is huge in size (d) the amount involved is small in size

10. One of the traditional methods of capital budgeting decision criteria is… (a) net present value (b) accounting rate of return (c) profitability index (d) internal rate of return

11. The conflict between various capital budgeting decision criterions is always resolved in favour of…… (a) net present value (b) accounting rate of return (c) profitability index (d) internal rate of return

A project has a cost of ₦35,000 and it is expected net cash inflows are ₦ 9,500 per annum for six years. If the cost of capital is 14% from 12- 14

12. Calculate the project's payback period to the nearest year (a) 3.68 years (b) 3.7 years (c) 4 years (d) 6 years

13. The project's Net present value is (a) ₦ 36,942 (b) ₦ 81,087 (c) ₦ 46,087 (d) ₦ 1,942

14. The project's profitability index is (a) 1.05 (b) 1.06 (c) 0.05 (d) 0.06

A project has the following expected cash flows over its 5-year life span

Year	0	1	2	3	4	5
Cashflow (₦)	-10,000	30,000	30,000	30,000	30,000	30,000

15. If the discount rate is 10%, determine the Net Present Value (NPV)

(a) ₦50,000 (b)₦113,723.60 (c) ₦ 83,153(d) ₦13,723.60

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STUDY SESSION 8:

MATHEMATIC FINANCE

INTRODUCTION

It is common in everyday transactions to determine how much a lump sum payment and series of payments is worth in the future or in the present (today) at particular rates of interest. This is our concern in this Study Session as we discuss the concept of time value of money that borders on computing future and present values of fund. It involves simple calculations using a few basic formulae that are relatively easy to understand. In fact, you will have come across some of these interest calculation formulae and problems in your previous study of elementary Arithmetic and Mathematics. We will also take a look at some interesting applications of the discounting and compounding concepts in transactions that involve accumulating money for use in the future, repayment of interest bearing loans and series of payments that continue forever (perpetuities).

As noted above, you already have the basic calculation skills that would help you comprehend and grasp the materials in this study session. It is really not heavy mathematics, but simple calculations that involve use of interest rates that are prevalent in everyday transactions.



LEARNING OUTCOMES;

After you have studying, this study session you should be able to;

8.1 Define concept of Time Value of Money
8.2 Calculate simple and compound Interest
8.3 Estimate the future Value of a Lump Sum Payment
8.4 Calculate and make decision on the Present Value of a Single Amount
8.5 Estimate the future values of Multiple Payments/Receipts
8.6 Calculate the Present Values of Multiple Payments/Receipts
8.7 Calculate the Present Value of a Perpetual Annuity
8.8 Multi Period Compounding and Effective Interest Rate per Annum
8.9 To compute the Compounding Continuously
8.10 Apply Time Value of Money Concept Practical Problems

8.1 THE CONCEPT OF TIME VALUE OF MONEY

A basic concept in finance is that money has time value. In other to make decisions concerning present and future amount of money, it should be appreciated that the value of money does not remain the same throughout time. A naira to be received sometime in the future is not equivalent to a naira at hand today, because of the time value of money. We can invest the naira available today to earn interest, so that it will increase in value to more than a naira in the future. Furthermore, future money or cash flows are uncertain and might not materialize. Anything can happen in the future that can make it impossible to receive future expected money. Another reason why the value of a naira today is worth more than a naira in the future is inflation. Inflation will reduce the purchasing power of money in the future.

Consequently, one would rather receive a naira now than receive the same amount in the future, even if we are certain of receiving it at the expected time. Interest is the payment made for the use of money. Thus, an interest rate is the measure of the time value of money. Time value of money is important in the savings and investment process. The rest of this Study Session will discuss different concepts relating to time value of money - simple interest, compound interest, future or compound values and present values.

- Time value of money means (Option) time is important in business (Option) too much time should be spent in a single transaction (Answer) one naira today cannot worth the same value of one naira tomorrow (Option) none of the above.

o ANS; C

8.2 SIMPLE AND COMPOUND INTEREST

Simple interest is the interest earned on an initial amount invested (the principal). The amount of principal and the interest payments remain the same from period to period. The simple interest is computed as:

Simple Interest = Principal x Rate (% per year) x Time (in years) (8.1)

ILLUSTRATION 8.1

Adams and co. Ltd invests ₦10,000 at simple interest of 12 percent per year. What is the amount of interest due to Adams and co. Ltd at the end of two years?

SOLUTION:

Simple Interest = Principal x Rate x Time
= N10,000 x 0.12 x 2
= N2,400

8.3COMPOUND INTEREST

The compound interest is the interest earned on the principal plus previously earned interest. Interest is added to the principal as we earn it during any period. We then compute

interest on the new balance (often called the compound amount) during the next period. Frequency of compounding can take many firms such as daily, monthly, quarterly, semiannually, or annually.

ILLUSTRATION 8.2

Let us assume that the investment of Adams and co. Ltd is the same as that described in illustration 1 except that the interest is compounded annually. Calculate the total interest for the two-year period.

SOLUTION:

The total interest for the two-year period can be calculated as:

(1) Year	(2) Balance at Beginning (#)	(3) Compound interest (#) (2) x 14%	(4) Balance at the end of the period (#)
1	10,000	1200	11,200
2	11,200	1344	12,544

In illustration 2, the total interest is #2,544 compared with the #2,400 computed in illustration 8.1 earlier. The difference of #144 represents interest earned in the second year on the first year's interest (#1,200 x 0.12) and is the product of applying compounding rather than simple interest. In most cases involving the time value of money, compound interest is applicable, so our discussion in this Study Session will be on compound interest.

Our understanding of time value of money will be developed further as we solved the concepts of future values and present values. Also, the illustration 8.2 can be solve through this formula $Fv = Pv\ [1+r]^{n}$

8.4 FUTURE VALUE OF A LUMP SUM PAYMENT

As earlier discussed, an amount of money deposited in an interest yielding account today will have a higher future value than an initial amount because of interest earned. The future value of a lump sum (i.e., single amount) invested today can be computed as follows;

$FV = P(1 + r)^{n}$ ……. 8.2

Where:

FV = Future value.

P = Present value of a single amount invested (principal).

r = Interest rate per annum.

n = Number of years.

The interest rate is normally expressed as an annual rate. However, interest is often compounded more frequently - semiannually, quarterly, monthly or daily. In such cases, the interest rate and number of periods must coincide with the compounding schedule. For example, if we earn 12% per year interest over a two-year period with semiannual compounding, the interest rate and number of periods used in the future value formula are 6% and 4, respectively. This means that the annual interest rate (12%)is divided by the number of times compounding takes place (2) within a year, giving 6%. and the number of years (2) multiplied by the number of compounding periods (2), giving 4 periods.

- The type of investment where the both the principal and interest will be re-invested to generate a further profit is called

o **ANS;** Compound interest

The methodof compounding whereby the interest is prorated into semi-annually, quarterly etc…….

o **ANS;** Multi-period compound interest

ILLUSTRATION 8.3

Calculate the future value of the investment of Adams of co. Ltd using compounding formula:

SOLUTION

FV = #10,000 $(1 + 0.12)^2$

= #12,544

As we discovered in illustration 8.3 the total value of Adams and co. Ltd's investment at maturity of #12,544 is the same as we computed earlier by adding the compound interest to the principal.

8.4.1 Present Value of aSingle Amount

As noted earlier, money held today is worth more than the same amount of money received in the future because of the time value of money. Consequently, the present value of a given amount to be received in the future will be less than the future value. To find the present value of a specific future amount, we must discount the future value with an appropriate interest rate to the present. The interest rate involved is also called a discount rate. Future value and present value have a reciprocal relationship, as can be seen by comparing the formulas for the future and the present value of a single amount of money. As can be recalled, from Equation 8.2 in Section 8.3, we gave the future value of a single amount as:

$FV = P(1 + r)^n$

In contrast, if we make P the subject of the formula, we calculate the present value of a single amount of money as follows:

$$P = \frac{FV}{(1 + r)^n}$$

where:

P = Present value.
FV = Future value of an amount to be accumulated.
r = Interest rate per annum.
n = Number of years.

ILLUSTRATION 8.4

Adamu and Co. received the sum of N12544 for two years investment at 12% interest rate compounded annually, what is the constant amount for the investment or the present amount to be invested now to receive this said amount.

SOLUTION

The illustration is testing the present value of compound interest and to solve this problem just make the subject of the fomular, by discounting the futures value. Therefore, the analysis is as follows:

$Pv = \frac{FV}{(1 + r)^n}$

$Pv = \frac{12544}{1.12}$ or $12544(1.12)^{-1} = ₦11200$

8.5 MULTI PERIOD COMPOUNDING AND EFFECTIVE INTEREST RATE PER ANNUM

In Section 8.3, we stated that the formula for calculating the future value of a single amount for a multiple compounding period is given as from Example 8.2, the future value becomes larger as the number of compounding periods increases. For multiple payments/receipts, A in addition, must coincide with the interest payment period. If A is stated annually, we can replace A with A/m. The treatment of a situation where A does not coincide with interest payment period is beyond the scope of this book.

8.5.1 Multi Period Compounding Interest

In Equation (8.3) for future value of a single amount in a multi period compounding situation, we replaced the r of Equation (8.2) by *r/m* and the n by mn where m is the number of compounding periods in a year. We can use the same procedure for all present values and future values calculation.Thus, in present values and future values for multi period compounding situations, we just adjust all our previous formulas by replacing r with r/m and n with mn. Therefore, the interest rate is decomposed to captured the following; because investors are expecting to collect proceeds on their investment in that order as thus:

- Semi Annually or bi-annually
- Quarterly
- Monthly

Generally, the formular for computing the future value of a lump sum amount for a multiple period is given as:

$FV = p(1 + \frac{r}{m})^{mn}$

Where;

r = interest rate per annum
m = frequency of compounding
n = number of years.

ILLUSTRATION 8.5

Let us assume that the investment of Adams and co. Ltd is N10000 for the two-year period with 12% interest rate is compounded annually. Calculate the amount to realized if interest compounded as thus:.

i) Quarterly ii) Semi-annually and iii) Monthly

SOLUTION

Therefore, if the investment involves quarterly compounding, we must revise the formula by dividing the 12% interest rate by 4 and multiplying the 2 years by 4 so we have the following new computations:

$FV = \#10{,}000\ (1 + \underline{0.12)}^{8}$

4

$FV = \#10{,}000\ (1 + 0.03)^{8}$

$= \#12{,}667.70$

The interest earned with quarterly compounding is #123.70 more than it was with annual compounding. Fortunately, tables have been developed for various combinations of interest rates and periods to avoid the necessity of using the formula each time a future value of a lump sum amount (single amount) of money must be calculated. We can obtain the future value of #1 for various interest rates and various periods from a standard interest tables.

ii) Semiannually compounding above:

$FV = \#10{,}000\ (1 + \underline{0.12)}^{8}$

2

$FV = \#10{,}000\ (1 + 0.06)^{4}$

FV =

iii) Monthly compounding interest here the interest will be prorated by 12 and multiplied by the numbers of years the investment is locked up. Therefore, the computation is below:

FV = #10,000 $(1 + \frac{0.12}{12})^{24}$

FV = #10,000 $(1 + 0.01)^{24}$

Fv = ₦12697.35

8.5.2 Calculating Number of Yearsin Compound Interest

Then,you want to calculate the number it will take an investment to generate to the future amount, It will require you to use the concept of logarithm in order for you to determine how long it will take an investment either to double itself or triple itself at 15% discount rate. Here, we use the compound interest formula and applied change subject of the formula. Therefore, recall the formula for compound interest as thus; $FV= Pv(1+r)^n$

ILLUSTRATION 8.6

How long will it take an investment to triple itself at 15% interest rate compounded annually;

SOLUTION

Let investment = X so, Pv= X and Fv=3x Since the investment will triple itself that implies that the investment will be multiplied by 3.

; $FV= Pv(1+r)^n 3x= x[1.15]^n$

$\frac{3x}{x} = 1.15^n$

$3= 1.15^n$

Take log of both sides $\log 3 = \log 1.15^n$

$n \log 1.15 = \log 3$

$n= \log 3 / \log 1.15$

n=7.86years

Therefore, it will take 8 years for an investment to triple itself at 15% interest rate

- How long would it take for an initial investment to quadruple at 6% compounded annually? (a) 4 years (b) 6 years (c) 23.8 years (d) 12 years
  - C
- How long does it take for an initial investment to double at 4% compounded annually? (A): 6.99 years (b): 18.67 years (c): 4years (d): 17.67 years
  - D

COMPUTING INTEREST RATE IN COMPOUND INTEREST

In line with the preceding example, it is possible to compute the interest rate when all parameters for estimating compound interest are given to except for the interest rate. Therefore, this is a very simple task, what you need to do is to apply change subject of the formula and find N^{th} root of both sides to subtract by 1. Thus, it gives interest rate on the investment.

ILLUSTRATION 8.7

Based on the preceding example, the number of years for the investment is 8 years, calculate the interest rate compounded annually for an investment to triple itself.

; $FV= Pv(1+r)^n 3x= x[1+ r]^8$

$\frac{3x}{x}= 1.15^8$

$3= 1.15^8$

Find the 8 root of both sides $\sqrt[8]{3} = (1 +r)$

1+ r = 1.1472

R = 1.1472-1

R = 0.1472

Therefore, the interest rate on the investment is 15%. This evidence to buttress that is possible to manipulate any missing variables in the compound interest

8.5.3 Continuous Compounding

If we assumed that payments are spread evenly and continuously throughout the year, the future and present values calculation needs to be adjusted. For instance. Equation (8.3) gave the future value of a single amount in a multi period compounding situation which **is** restated as: $FV =Pe^{rN}$

As M approaches infinity. (1 + r/m) approaches e^r where e is the base for n: logarithms and its value is equal to 2.7183. Thus, with continuous compounding, future value of a lump sum is given as:

$FV =Pe^{rN}$

where P = Present value.

N = Number of years.

r = Interest rate per annum.

e = 2.7183

We can use the same approach for all present and future value formulae in a continuous compounding situation by replacing $(1 + r/m.)^m$ with e^r

ILLUSTRATION 8.8 below

Find the present value of ₦ 7,500 promised to be paid in 5 years time. Interest is compounded continuously at 20 percent.

Solution

$Fv = Pve^{nr}$

$= 7500 (2.71828)^{0.2(5)}$

$= 7500 (2.71828)^1$

Fv = ₦ 2,208.51

The value of the investment at the end of eight years = ₦ 2, 208.51

ILLUSTRATION 8.9

Find the compound value of N 1,500 deposited in a saving account at 12% per annum if compo-is done continuously for 2 years. Calculate also the effective interest rate per annum.

Solution

$FV = Pe^{rn}$

FV= N1.500x2.71S30$^{0.12(2)}$

FV= ₦1.906.S8.

➢ The **effective interest rate** per annum is given by $e^r - 1$

Thus, $2.71S3^{0.12} - 1$

= 0.1275

The effective interest rate = 12.75%

8.6FUTURE VALUES OF MULTIPLE PAYMENTS/RECEIPTS

In section 8.3, we discussed the future value of a single amount. An investment sometimes might be a series of payments or receipts not necessarily a single amount. Thus, we

might also be interested in calculating future value of multiple payments or receipts. Multiple payments can be irregular series of payments/receipts or regular payments/receipts (annuity).

8.7FUTURE VALUE OF UNEQUAL PAYMENTS/RECEIPTS

The future value of irregular series of payments is obtained by applying the future value formula of Equation (8.2) to each individual payment and then summing the resulting individual future values up. However, the timing of each individual payment will affect the future value computation since interest will not accrue until the end of each year. Each individual payment is assumed to be made at the end of each year implying that the last payment will not attract interest. However, if individual payment is made at the beginning of each year, the last payment will attract interest. If we denote payment at year t by A, and interest rate at year t by r. we can rewrite the future values of annuity in Examples 8.6 and 6.7 as follows:

For Example 8.6 (payments made at the end of each year)

$FV = A_1(l+r)^2+A_2(l+r)+A_3$

For Example 8.7 (payments made at the beginning of each year)

$FV = A_1(l+r)^3+A_2(l+r)^2+A_3(1+r)$

Generally from Equations (8.5) and (8.6), we can deduce the formula for future value of series of irregular payments as follows:

If the payments are made at the end of each year

$$FV = \sum_{t=}^{N} A_t(1+r)^{N-t}$$

Where A_t = Payments/receipt in year t
r = Interest rate per annum
N = Number of years
$\sum$ = Summation sign

If the payment are made at the beginning of each year.

$$FV = \sum_{t=}^{N} A_t(1+r)^{N}$$

8.7.1 Future Value of Regular Payments/Receipts: Annuity

An annuity consists of a series of equal payments or receipts over some periods, with compound interest on the payments or receipts. We can divide annuities into ordinary annuity and annuity due.An ordinary annuity is a series of equal payments or receipts that occur at the end of each period involved. While an annuity due is a series of equal payments or receipts that occur at the beginning of each period involved.

A.FUTURE VALUE OF AN ORDINARY ANNUITY

The future value of an ordinary annuity is the sum of all payments, and the compound interest accumulated on each. ABC Ltd lock up ₦60,000 in an investment that will generate 16% interest rate at the end of 3 years, calculate the future value of an ordinary annuity.

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

In calculating future value of annuities will make the calculation cumbersome as the number of annuities gets larger. Equation (8.9) has been used to derive a simplified formula for future value of an ordinary annuity. The formula for future value of ordinary annuity is, thus, given as follows:

Solution

$$FV = 6000\left[\frac{(1+0.16)^3 - 1}{0.16}\right]$$

= N 6,000 (3.5056)

= N21,033.60

B. FUTURE VALUE OF ANNUITY DUE

The future value of annuity due is different from that of an ordinary annuity and is given as:

$$FV = \sum_{t=1}^{N} A(1+r)^N$$

Just like future value of an ordinary annuity, the formula for future value of annuity d be simplified as follows:

$$FV = A\left[\frac{(1+r)^N - 1}{r}\right]$$

8.8 PRESENT VALUES OF MULTIPLE PAYMENTS/RECEIPTS

In Section 8.4, we discussed the future values of multiple payments/receipts. We can, in a similar way, calculate the present values of multiple payments/receipts. As discussed in the last section, multiple payments can be irregular series of payments/receipts or regular payments/receipts (annuity).

- Ina sinking fund investment…… is the formula use by analyst to compute installment payment (a) compound interest (b) future value of annuity (c) present value of annuity (d) Annuity due (e) ordinary annuity

o ANS; B

8.8.1 Present Value of Irregular Payments/Receipts

From Equation (8.4), the present value of a single amount is given by:

$$P = \frac{FV}{(1+r)^N}$$

The present value of irregular series of payment is found by first calculating t value of each individual payment and then summing up the results of the calculated present values. The formula for present value of irregular series of payment is given below

$$FV = \sum_{t=1}^{N} \frac{A_t}{(1+r)^t}$$

Where A_t = payment made at the end of year t

8.8.2 Present Value of Regular Payments (Ordinary Annuity)

The present value of an ordinary annuity is the amount that would have to be invested today at a certain compound interest rate to enable the investor to receive the series payment over a specified period.

If many payments are involved, this approach will obviously be quite time – consuming. The following formula can be used to obtain present value of an ordinary annuity.

- An annuity payments occur at the beginning of each period is called: (a): simple annuity (b): ordinary annuity (c): deferred annuity (d) annuity in advance

- ANS; B

ILLUSTRATION 8.10

What is the present value of constant annual cashflows of N120,000 at 15% if cash flows start:

a. In year 1 b. In year 5 c. Immediately

SOLUTION 10

- PV = $\frac{A}{r}$ $\frac{120,000}{.15}$ = N800,000
- PV = A – A x CDF for irrelevant years

= $\frac{120,000}{r}$ - 120,000 x CDF for 4 years of 15%

= 800,000 – 120,000{3.037]

= 800,000 – 364,440

= N435,560

- PV = A + $\frac{A}{r}$

= 120,000 + $\frac{120,000}{.15}$

= ₦920,000

PRESENT VALUE OF ANNUITY DUE

The present value of an annuity due is the amount that would have to be invested today at a certain compound interest rate to enable the investor to receive the series of future payment from now over a specified period. The present value of annuity due is not common and can be derived with the following formula:

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

8.9 PRESENT VALUE OF A PERPETUAL ANNUITY

A perpetual annuity (or perpetuity) is a series of equal periodic payments or receipts expected indefinitely. An example of perpetual payment is dividends on irredeemable preference shares. The future value of perpetuity is infinite. Thus, the present value of a perpetuity is given as:

$$P = \frac{A}{r}$$

where the annuity. A occurs at the end of the year as in other Sections.

ILLUSTRATION 8.11

ABC Ltd invested the sum of ₦10,000 in an investment that will generate 15% into perpetuity, what is the future value of the investment at the end of the year into perpetuity.

$$P = \frac{A}{r}$$

P = ₦10,000 / 0.15
P = ₦66,666.67

8.10 APPLICATION OF TIME VALUE OF MONEY CONCEPT: PRACTICAL PROBLEMS

The time value of money concepts discussed so far can be applied to various sit-including money market investment, bond valuation, equity valuation, personal planning, sinking fund, loan amortization etc. In trying to solve any problem in practical situations, readers should first identify the key variables in time value of problems and then solve for any missing variable.The key variables in time value of money concepts are stated in Table 8.1 below:

Let us now consider the application of time value of money concept to sinking fund and loan amortization problems.

8.10.1 Sinking Fund

One use of time value of money concept is determining an amount that an equal periodic amount an individual or company can set aside to accumulate a specific amount in the future. As each periodic amount is set aside, it will be immediately invested. This is what we call a sinking fund. It can be used in providing for replacement of fixed assets, retirement of debentures etc.

- Adeolu and Co. owe deposited 8.5 million in the sinking fund quarterly at 16% compounded quarterly; what is the quarterly instalment payment? (A):₦ 684,571.12 (b):₦668,181.96 (C) ₦ 669,181.96 (d): ₦ 1,365,131.20

o ANS; C

ILLUSTRATION 8.12

Mr. Niyi, owner of Neyo Motel needs N0.5m in 5 years' time to replace its fixed asset; he had decided to set aside annually an equal amount out of the motel profit. Any amount set aside would be immediately invested. Determine the equal amount Mr. Niyi should set aside out of the motel profit annually if the annual compounding interest rate is 20% and show the sinking fund schedule.

SOLUTION

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

$$500{,}000 = A\left[\frac{(1.2)^{5} - 1}{0.2}\right]$$

$$500{,}000 = [7.4416]$$

$$A = \frac{500{,}00}{7.4416} = 67189.85$$

Mr. Niyi annual installment payments ₦ 67,189.85 annually,

Therefore, in order to prepare the sinking fund table we channel the interest rate and also add up with the principal balance. At the end of five years, the sinking fund table will amount to the total fund invested. Thus, see the below table

Table 8.1 SINKING FUND SCHEDULE

Year	**Principal At beginning**	**Annual interest**	**Annual Sinking Fund**	**Principal at end**
	₦	₦	₦	₦
1			67,189.85	67,189.85
2	67,189.85	13,437.97	67,189.85	147,817,67
3	147,817.67	29,563.53	67,189.85	224,571.05
4	244,571.05	48,914.21	67,189.85	360,675.11
5	360,675.11	72,135.02	67,185.85	500,000

8.10.2 Loan Amortization

We can also apply time value of money concept to find the payments required under an installment type of loan. Installment payments are prevalent in mortgage loans and certain type of business loans. The main feature of an installment loan is that the

borrower repays the loan in equal periodic payments that embody both interest and principal.

- The amortization factor is the reciprocal of which interest factor? (A): sinking fund factor (b): PV interest factor of an annuity (c): compound value factor (d): present value factor

o ANS; B

ILLUSTRATION 8.13

Mrs. Aminat purchased a building at a cost of N200, 000: He was able to make a down payment of N90, 000. The owner of the building agreed to a five years mortgage for Mr. Andrew Clark to pay the balance yearly. The parties to this transaction agreed to a 30% fixed rate of interest.

i. How much must Mrs. Aminat pay yearly to obtain complete ownership of the building?

ii. Show the amortization schedule of Rm. Aminat payments.

SOLUTION 4

	N
Cost of the building	200,000
Less down payment	90,000
Outstanding balance	110,000

$$Pv = A\,\frac{[1-(1+r)^{-n}]}{r}$$

$$110{,}000 = \frac{A\,[1-(1.3)^{-5}]}{0.3}$$

$$110{,}000 = A\,[2.4355699752]$$

$$A = \frac{110{,}000}{2.435569752} = ₦\,415{,}163.97$$

Mrs. AMINAT will pay ₦ 45, 163.97 yearly to obtain complete ownership of the building as regular installment and the principal amount at the beginning is ₦110000

Table 8.2 The amortization schedule of Mrs. AMINAT payment is as follows:

Year	Principal At beginning	Annual interest	Regular payment	Principal at end
	₦	₦	₦	₦
1	110,000	33,000	45,163.97	97,836.03
2	97,836.03	29,350.81	45,163.97	82,022.87
3	82,022.87	24,606.86	45,163.97	61,465.76

4	61,465.76	18,439.73	45,163.97	34,741.52
5	34,741052	10,422.46	45,163.97	-

SELF ASSESSMENT QUESTION

Question 1

KemiKusibe is considering an investment that will yield the maximum return and She invested the sum of ₦10,000. Union bank has offered her 24% interest compounded quarterly and GTbankhas offered her 30% compounded annually. Which of the two investments will provide Kemi with the highest return at the end of the five year periods?

Self Assessment QuestionsSAQ 2

1. Time value of money means (a) time is important in business (b) too much time should be spent in a single transaction (c) one naira today cannot worth the same value of one naira tomorrow (d) none of the above.
2. How long would it take for an initial investment to quadruple at 6% compounded annually? (a) 4 years (b) 6 years (c) 23.8 years (d) 12 years
3. The present value interest factor of an annuity is the reciprocal of which interest factor? (a) sinking fund factor (b) future value factor (c) a lump sum payment (c) future value factor
4. At what compound rate of interest will ₦ 1000 grow to ₦ 26660.02 in 7 years? (a) 26% (b) 15% (c) 7% (d) 10%
5. How long does it take for an initial investment to double at 4% compounded annually? (A): 6.99 years (b): 18.67 years (c): 4years (d): 17.67 years
6. The amortization factor is the reciprocal of which interest factor? (A): sinking fund factor (b): PV interest factor of an annuity (c): compound value factor (d): present value factor
7. You are promised 90,000 15 years from now. What is that promise worth today if interest rate is 20% per annum? (A): 1,386,631.94 (b):5,490.03 (c): 584.15(d): 5,841.49

8. Adeolu and Co. owe deposited 8.5 million in the sinking fund quarterly at 16% compounded quarterly; what is the quarterly instalment payment? (A):₦ 684,571.12 (b):₦668,181.96 (C)₦ 669,181.96 (d): ₦ 1,365,131.20
9. At what compound rate of interest will 2,000 grow to 5,316.89 in 8 years? (a): 23% (b): 12% (c): 15% (d): 13%

Use the following to answer question 10-11

Mr. Badewa took a₦ 500,000. No Wahala loan from UBA Plc; to be paid back in two years by monthly deductions from his salary at 18% per annum compounded monthly.

10. What is the monthly instalment payment? (A): 17,462.05 (b): 80,517.97(c): 24,962.05 (d): 74,263.92
11. ₦2,500 was compounded continuously at 11.5% per annum for 6 years. What is the amount at the end of the period? (A):₦ 4,984.29 (b): ₦ 4,803.85 (C):₦ 4,934.56 (d):₦ 4,676.04
12. An annuity payments occur at the beginning of each period is called: (a): simple annuity (b): ordinary annuity (c): deferred annuity (d) annuity in advance
13. Chief Ude plan to endow an annual prize of ₦10,000 to the best graduating student of DLI forever. If interest rate is 5%; how much will need be paid to the endowment account? (a): ₦ 2 million (b)₦ 200,000 (C)₦ 20,000 (d)₦ 100,000

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STUDY SECTION 9:

WORKING CAPITAL MANAGEMENT



INTRODUCTION:

A theme here is the importance of investors shaping their analytical focus according to Companies Business Model, especially when time is short or limited. When is working capital analysis critical?

Working capital is significant from the angle of creditor who is concerned on the ability of the company to pay its bill. But from the perspective of company valuation and the company's growth prospect, working capital is more critical to one business than to others.



LEARNING OUTCOMES FOR STUDY SESSION 4

At the end of this Session, the learners should be able to

9.1 Describe working capital

9.2 State the components of working capital

9.3 Calculation and interpretation of working capital

9.4 Explain the relationship between overcapitalization and working capital

9.5 Identify ratio that determined investment in working capital

9.6 Explain overtrading and its effects on working capital

9.7 Identify the causes and characteristics of overtrading

9.8 Explain the relationship between working capital and control of cash (cash cycle).

9.1 WORKING CAPITAL MANAGEMENT

Working capital management is the capital available for the daily running of a business. It is a common measure of a business liquidity, efficiency and overall health. A company's working capital reflects the results of a host of its activities including

inventory management, debt management, revenue collection and payment to suppliers.

Positive working capital generally indicates that a company is able to pay off its short term liabilities almost immediately. While negative working capital generally indicates a company could not pay its short-term liabilities immediately. This shows the reason why financial analysts are interested in the strength of working capital of an organisation.

9.2 COMPONENTS OF WORKING CAPITAL MANAGEMENT

In order to ascertain the working capital of a business, there are two major components that must be considered. These are

(a) Current assets

(b) Current liabilities

9.2.1 Current Assets

These are assets of a company that change in composition with the level of output of the company or change along the operational activities of a business. It comprises the following:

(a) Stock of inventory
(b) Bills receivable
(c) Cash in hand
(d) Cash at bank
(e) Debtors etc

9.2.2 Current Liabilities

These are the debts or outstanding of a business that are due for payment within a financial year. In accounting, they are liabilities of a company that are often settled in cash within an accounting year. It could also be said as liability that is a claim on company current assets. It comprises the following:

(a) Sunday creditors

(b) Bills payable

(c) Bank overdraft

(d) Account payable

(e) Accrued liabilities etc

9.3 LIQUIDITY RATIOS, CASH OPERATING AND OPERATING CYCLE

This measures the ability of a reposting entity to settle its short term debt and meets its obligation as at when due. Therefore, working capital could be calculated by using any of the following:

(a) Working capital = current assets – current liabilities

This implies that when the value of current assets is in excess of current liabilities, there is positive working capital which means that the business has enough fund to meet its current liabilities.

(b) Current ratio = $\frac{\text{Current asset}}{\text{Current liabilities}}$

This is the ratio of current assets to liabilities. The ideal current ratio is generally accepted to be 2:1 but this proportion can obviously be varied in practice, depending on the circumstances of an organisation.

(c) Quick ratio or Acidity test ratio = $\frac{\text{Current assets - stock}}{\text{Current liabilities}}$

The ideal of his is 1:1 although in practice companies often have much lower quick ratio than the above stated one. Note: A current ratio of 2:1 and quick ratio of 1:1 are thought to be indicative that a company is reasonably well protected against the dangers of insolvency through insufficient liquidity.

Example:

Given the following financial statement, extract of EretanPlcas follows:

	₦	
Fixed assets	500,000	
Bank balance	1,000,000	
Bank overdraft	2,500,000	
Closing stock	3,000,000	
Debtors	4,000,000	
Bills receivable		300,000

Bills payable	200,000
Accrued wages	600,000
Creditors	1,000,000

You are required to calculate, interpret your answer under each of the following

(i) Working capital

(ii) Current ratio

(iii) Acidity test ratio

SOLUTION

The working capital is = N10,800,000 – N1,800,000 =N9,000,000

II) Current Ratio =N10,800,000 =

₦1,800,000

iii) Acid test ratio = ₦ 10,800,000 – ₦ 3,000,000 =

₦1,800,000

9.3.1 Cash Operating Cycle

Cash operating cycle can also be called working capital cycle. Therefore, cash operating cycle can be defined as the length of time it takes and enterprise to acquire raw materials on credit, convert into finished goods, sell them on credit and wait for the debtors to pay and from the cash collected from debtors, then settle the suppliers. The lower it is, the better for the enterprise in terms of liquidity and efficiency in assets management.

- In cash cycle, cash is recovered when (a) creditors are paid (b) debtors paid (c) taxation dividend (d) finished goods are sent to debtors

o B

9.3.2 Operating Cycle

Operating cycle is the length of time it takes to acquire raw materials, convert them into finished goods, sell them on credit and then collect the cash from debtors after a while. On the other hand, cash cycle is the length of time it takes to settle suppliers

from cash collected from debtors. It is the difference between operating cycle and creditors' days.

9.3.3 The Differences between Operating and Cash Cycles

Firstly, operating cycle measures the number of days a firm needs to spend from the day raw materials was acquired to the day cash was collected from debtors. On the other hand, cash cycle tells how long it takes a firm to discharge its obligations

Secondly, operating cycle is naturally expected to have longer days than cash cycle or else, the firm is trading supplier's money which has **a low of consequences**

Lastly, Operating cycle depends on stocks and debtors days whereas cash cycle depends on stocks, debtors and creditors days.

CASE STUDY1

The following information is extracted from the records of AdanmaPlc

	Opening	Closing
	` N	N
Stock	5,000	7,000
Debtors	1,600	2,400
Creditors	2,700	4,800

Credit sales for the year just ended were 50,000 and cost of sales was 30,000. Within the limit of the available information, prepare for AdanmaPlc;

1) The operating cycle and (ii) the cash cycle

SOLUTION TO CASE STUDY 1

1) **Operating cycle for the year**Days

Stock days (6000/30000 x 365		73
Debtors days (2000/50000 x 365)		15
Operating cycle	88	

ii) **Cash cycle for the year**

Operating cycle		88
Less: Creditors Days (3750/32000 x 365)		43
Cash Cycle		45

Notes:

Stock of finished goods must be based on cost of sales. Creditors must be based on credit purchases, unless opening and closing stocks were given, then it can manage cost of sales. Credit purchases is derived as follows:

Opening Stock	5,000
Purchases	32,000

Closing stock (7,000)

30,000

9.4 OVER-CAPITALIZATION AND WORKING CAPITAL

Over-capital arises when the returns on capital employed is lower than as expected and long term funds would be unnecessarily tied up. When there are excessive stocks, debtors arising from inefficient management of working capital, there will be an over-investment by an organisation in current assets, that is working capital will be excessive and the company will be over-capitalized. Over-capitalization with respect to working capital should not exist if there is good management, but the warning signs of excessive working capital would be poor accounting ratios.

9.5 RATIOS THAT DETERMINE INVESTMENT IN WORKING CAPITAL

The ratios which can assist in judging whether the investment in working capital is reasonable are:

(a) **Sales/Working Capital:** The volume of sales as a measure of the working capital investment should indicate whether in comparism with previous year or with similar companies, the total volume of working capital is too high or low.

(b) **Liquidity Ratios**: A current ratio in excess of 2:1 or a quick ratio in excess of 1:1 may indicate over investment in working capital.

(c) **Turnover periods**: Excessive turnover periods for stocks an debtors or a low period of credit taken would indicate whether the volume of stocks or debtors is unnecessarily high or the volume of creditors too low.

The turnover periods may be calculated approximately as follows:

i. Raw material stock turnover =

Average raw material stock x 365 days

Purchases per annum

ii. Work in progress turnover (production cycle) =

Average work in progress x 365days

Cost of production per annum

iii. Finished goods stock turnover =

Average finished goods stock x 365days

Cost of Sales per annum

iv.Debtors turnover period =

Average Debtors x 365days

Sales per annum

v. Creditors turnover period =

Average trade creditors x 365days
Purchase per annum

9.6 OVERTRADING AND WORKING CAPITAL

Overtrading happens when a business tried to do too much within a short period with too little long term capital which implies that the organisation tried to support too large volume of trade with the capital resources at its disposal.

Under this premise, the company may be making profit but could easily run into serious trouble because of shortage of fund and this impunity troubles could arise from the fact that it does not have enough capital to provide the cash to pay its debts as they fall due.

Problems only arise when overtrading gets out of control and a business finds it increasingly difficult to pay its debts when they fall due. Uncontrolled overtrading does not happen suddenly with a business operating comfortably in one minute. Rather, a business sinks gradually into ever-increasing liquidity problems.

- It is economically viable for management to control over-trading (a) true (b) false
  - ANS: A

9.7 CAUSES OF OVERTRADING

Emphasis has been given to the danger of overtrading when business seeks to increase the sales turnover too rapidly without an adequate capital base. This is not the only cause of over-trading, however, other causes could be as follows:

(a) **Repayment of loans**: When a business repays its loan, it often replaces the occasional situations, a business may repay a loan without replacing it with the consequence that it has less long term capital to finance its current level of operations.

(b) **Inflation:** During inflation, the returned profit of a business must be insufficient to provide finance to pay for replacement fixed assets and stocks as a result of general increase in prices. The business would then rely increasingly on credit and find itself eventually unable to support its current volume of trading with a capital base that has fallen in real value over time.

- All the following are fractures of over-trading except (a)significant change in debt ratio (b) rapid increase in the volume of current assets (c) increase in over-head cost (d)increase in gross profit
  - ANS: D

9.8 CHARACTERISTICS OF OVER-TRADING

Businessmen need to be able to detect signs of overtrading as it develops in order for remedial action to be taken before it is too late. The following are some of the features of over-trading.

(a) A rapid increase in sales turnover

(b) Fall in gross profit as a result of raise in cost of production and sales discount.

(c) Increase in overhead cost in such a manner as it will affect profit margin negatively.

(d) A rapid increase in the volume of current assets and possibly fixed assets.

(e) Slight or no increase in capital and most of the increase in asset is financed by credit especially trade creditor or bank overdraft that reaches or even exceeds the limit of the bank agreed facilities.

(f)Significant changes in debt ratio and liquidity ratio

- The inefficiency management of working capital could result in _____ (a) over trading (b) over- capitalization (c) liquidation (d)bad debt
  - ANS: B

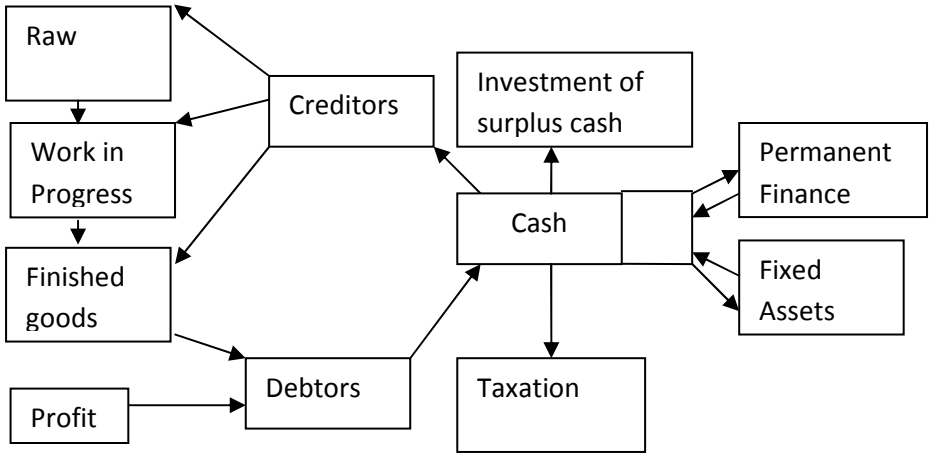
9.9 WORKING CAPITAL AND CASH CONTROL

The operating cycle is the time interval between the arrival of inventory stock and the data when cash is collected from receivable.

The cash cycle begins when cash is paid for materials and ends when cash is collected from receivable. The cash flow time line consists of an operating cycle and a cash cycle.

The amount tied up is equal to the value of raw materials, work in progress, finished stocks and debtors less creditors. The size of this net figure has a direct effect on the liquidity of an organisation. The connection between investment in working capital and cash flow may be illustrated by means of the cash cycle, operating cycle or trading cycle as illustrated below.

WORKING CAPITAL AND CASH CONTROL (CASH CYCLE)



The operating cycle above expresses the following:

(i) Raw materials stocks are obtained from suppliers

(ii) Eventually the trade creditors were paid and cash is therefore paid out

(iii) Raw materials were held in stock until they were issued to production (WIP). At this time, additional credits (for labour and other expenses may be incurred).

(iv) Oncompletion of production, the finished goods were held on stock until sold, perhaps on credit.

(v) Cash is received, eventually when the debt is collected

CASE STUDY 2

The following information were extracted from the records of ZakiPlc for 2010

		₦'000	
Stock – Raw materials			150
Work in progress	60		
Finished goods		200	
Purchases			500
Debtors		230	
Creditors			120
Sales			900
Cost of goods sold			750

Required

Calculate the working capital cycle of the company

THE STEPS THAT COULD BE TAKEN TO REDUCE OR IMPROVE WORKING CAPITAL INCLUDE:

- Reduction of raw materials holding period
- Reduction of production days by speeding up and still ensuring quality
- Reduction of finished goods days by increasing market outlets and improve advertisement
- Reduction in debtors' days by giving reasonable cash discounts
- Increase in creditors days by obtaining their consents or rejection discounts

SOLUTION TO CASE STUDY 2 ZakiPlc

		Days
Calculation of working capital cycle:		
Stock – Rm (150/500 x 365)		110
- W1P (60/750 x 365)	29	
- Fgs (200/750 x 365)		97
Debtors (230/900 x 365)		93
Operating cycle		329
Creditors (120/500 x 365)		(88)
Cash cycle		241



SUMMARY

You have learnt in thisSession the description of working capital, its components, how it is calculated and interpretation of working capital as well as cash operating cycle. Also exposed you to relationship between working capital and over-capitalization, over-trading and control of cash (Cash cycle).

We can therefore conclude at this point the working capital management has been described in term of sources of short-term funds and the management and control of stocks, creditors, debtors and cash.

SELF ASSESSMENT QUESTIONS

The self-assessment questions are arranged in Multiple question as well as Easy type in this Study Session 9. The self-question assessesand addresses all the subsessionin-depth in the study session.

SAQ 1

A. Multiple choice questions

1. The idea current ratio for an organisation is _____ (a) 1:2 (b) 2:2 (c) 2:1 (d) 1:1
2. Acidity test ratio could also be described as ____ ratio (a) quick (b) current (c) debtor (d) solvency
3. The inefficiency management of working capital could result in _____ (a) over trading (b) over- capitalization (c) liquidation (d)bad debt
4. Which of the following is used to measure turnover period (a)sales/working capital (b) liquidity ratio (c) acidity test ratio (d)creditors turnover periods
5. All the following are fractures of over-trading except (a)significant change in debt ratio (b) rapid increase in the volume of current assets (c) increase in over-head cost (d)increase in gross profit
6. _____ is one of the causes of over-trading (a) deflation (b) mis-management of current asset (c) inflation (d) surplus cash
7. Repayment of loans could affect the working capital of an organisation (a) true (b) false (c) undeterminable
8. In cash cycle, cash is recovered when (a) creditors are paid

(b)debtors paid (c) taxation dividend (d) finished goods are sent to debtors

9. It is economically viable for management to control over-trading (a) true (b) false
10. Given total assets as N10,000,000, fixed as N2,000,000. The value of the working capital is (a) N4,500,000 (b) N2,500,000 (c) N4,000,000 (d) N3,500,000

SAQ 2 Essay

1. The following financial extract related to book ltd a manufacturing company

Cost as percentage of sales		%
Selling and distribution	10	
Variable overhead		15
Fixed overheads	20	
Direct materials	40	
Direct labour		30

While the turnover for the year is N3,000,000

On Average:

i. Debtors takes 3½ months before repayment
ii. Raw materials are in stock for 4months
iii. Work in progress represents 2months half produced goods

iv.Finished goods represents 2months production

v. Credit is taken as follows:

a. Direct materials – 2½ months b. Direct labour – 1week

c. Variable overheads – 2months d. Fixed overhead – 1month

e. Selling and distribution – 1month

Work in progress and finished goods are valued as materials, labour and variable expanse cost. You are required to complete the working capital requirement of Book ltd. Assuming the labour force is paid for 52 working weeks.

2. The Balance and loan statement of BimbiManufacturing Cooperation is given below for the year ended 31st December, 1992-1993 as follows:

BIMBI MANUFACTURING CO-OPERATION

December 31st 1993 and December, 1992.

Asset	1993	1992
Current assets	₦	₦
Cash	500,000	500,000
Market security (at cost)	500,000	450,000
Account receivables	2,000,000	1,600,000
Inventories	3,000,000	2,000,000
Total current assets	**6,000,000**	**4,550,000**
Net fixed assets		
Land	450,000	450,000
Building	4,000,000	4,000,000
Machinery	1,500,000	800,000
Office equipment	50,000	50,000
Accumulated depreciation	**(2,000,000)**	**(1,700,000)**
Net fixed assets	4,000,000	3,600,000
Prepayments and deferred charges	400,000	300,000
Intangibles	100,000	100,000
	10,500,000	**10,500,000**
Liabilities		
Current liabilities:		
Account payable	1,000,000	750,000
Notes payable	1,500,000	500,000
Accrued expenses payable	250,000	225,000
Taxes payable	250,000	225,000
Total current liabilities	**3,000,000**	**3,000,000**
Long Term Liabilities		
First montage bonds, 5% interest	3,000,000	3,000,000
Deferred taxes	600,000	600,000
	6,600,000	**5,300,000**
Stock Holders Equity		
Shares 5, per value each: authorized:		

Issued and outstanding 300,000 shares	1,500,000	1,000,000
Capital surplus	500,000	500,000
Accumulated retained earning	1,900,000	1,250,000
3,900,000 3,200,000		
10,500,0008,550,000		

Consolidated Income Statement	**1993**	**1992**
Net sales	11,500,000	10,700,000
Cost of sales and operatory expenses		
Cost of goods sold	8,200,000	7,684,000
Depreciation	300,000	275,000
Selling and administration expenses	1,400,000	1,325,000
Operating Profit	1,600,000	1,411,000
Other Income:		
Dividend and Interest	50,000	50,000
Total Income from operation	1,650,000	1,466,000
Less: interest on loans and other		
Liabilities	300,000	150,000
Income before tax	1,350,000	1,316,000
Provision for income tax	610,000	600,000
	740,000	716,000
Dividend paid out	90,000	132,000
Retained carryings	650,000	584,000

You are required to calculate the following:

(a) Average inventory
(b) Inventory turnover ratio
(c) Days in inventory
(d) Average account reachable
(e) Average receivable turnover
(f) Days in receivables
(g) Average payables
(h) Account payable deferral period
(i) Days in receivables
(j) Operating cycle
(k) Suggest the need for short term financial decision making.

SAQ 3

3A) what do you understand as cash operating cycle with respect to liquidity and activity management of business enterprise?

3B) Discuss 'Operating Cycle 1 and 'Cash Cycle and bring out their differences.

3C) List the steps which might be taken in order to improve the working cycle

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Anuoluwa M.U (2006); international financial management in perspective.

Mao James C. I. (1969); "Quantitative Analysis of Financial Decision".London Macmillan and Co.

Should you require more explanation on this study session, please do not hesitate to contact your e-tutor via the LMS.





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STUDY SESSION 10:
SECURITY ANALYSIS



INTRODUCTION

This last Study Session of this course text focuses on valuation of investment securities that are instruments of raising finds from investors by companies in the capital market. The Session first introduce you to an overview of the valuation process as we look at basic factors that affect values of financial instruments in an economy. We thereafter get into some detailed analyses of determining the value of debt, preference shares and common share securities (financial instruments) in the capital market. These are the most prevalent financial instruments in the capital market. Each of these has variant features which we do not get to analyze in this introductory course in finance that we are in.

This Study Session is involved in valuing alternate investments. We will begin with valuation process and then move on to the theory of valuation for various classes of securities; bonds, preference shares and common shares.



LEARNING OUTCOME

After you have studied this session, you be able to known:

10.1 Meaning of security analysis define what is security analysis and it application

10.2 General economic factor influencing the security market

10.3 Perfect Market
10.4 Form Of Efficiency
10.5 Meaning Of Security Analysis
10.6 General Economic Influences
10.7 Industry Factors Influences
10.8 Theory Of Valuation
10.9 Required Rate Of Return
10.10 Streams Of Returns
10.11 Valuation Of Bonds
10.12 Valuation Of Preference Share
10.13 Valuation of common stock
10.14 Pragmatic Multiplier Approach:

10.1 SECURITY ANALYSIS AND APPLICATION

Security analysis is the process determining the securities prices of an underlying asset and to know what are the factors that cause volatility in asset price. Majorly, asset returns is the changes in the prices of a security market and literature have supported the factors that driven stock prices can be as thus:

EMH VS FUNDAMENTAL AND TECHNICAL ANALYSES

There are three broad theories concerning stock price movements. These are the fundamental analysis, technical analysis and efficient market hypothesis. **Fundamental analysts** believe that by analyzing key economic and financial variables they can estimate the intrinsic worth of a security and then, determine what investment action to take.

Fundamental analysis seeks to identify underpriced securities and overpriced securities. Their investment strategy consists in buying underpriced securities and selling overpriced securities, thereby earning superior returns**.**

A Technical Analyst maintains that fundamental analysis is unnecessary. He believes that history repeats itself. Hence, he tries to predict future movements in share prices by studying the historical patterns in share price movements.

The **Efficient Market Hypothesis** is expressed in three forms. The weal form of the EMH directly contradicts technical analysis by maintaining that past prices and past price changes cannot be used to forecast future price changes because successive price changes are independent of each other. The semi-strong form of the EMH contradicts fundamental analysis to some extent by claiming that the market is efficient in the dissemination and processing of information and hence, publicly available information cannot be used consistently to earn superior investment returns.

The strong form of the EMH maintains that not only is publicly available information useless to the investor or analyst but all information is useless. Even though the EMH repudiates both fundamental analysis and technical analysis, the market is efficient precisely because of the organized and systematic efforts of thousands of analysts undertaking fundamental and technical analysis. Thus, the paradox of efficient market hypothesis is that both fundamental and technical analysis is required to make the market efficient and thereby validate the hypothesis.

10.1.2 A Perfect Market

A perfect market is a type of market where neither the buyer nor the seller of underlying assets can influence the security price. The perfect market of any stock in the world must exhibit the following characteristics, as thus:

- **MARKETS ARE FRICTIONLESS:** i.e. there are no transactions costs or taxes all assets are perfectly divisible and marketable and there are no constraint regulations.
- There is perfect competition in product and security markets**.**
- Markets are informationally efficient i.e. information is costless and it is received simultaneously by all individual.
- All individuals are rational expected utility maximizes.

10.1.3 Forms of Efficiency

The forms of efficiency in the of allocating the security prices of an underlying assets can be decompose into two forms as thus;

- **Operational efficiency**
- **Allocationally efficiency**

OPERATIONAL EFFICIENCY

Operational efficiency deals with the **cost of transferring funds**. In the idealized world of perfect capital markets, transactions costs are assumed to be zero; therefore, we have perfect operational efficiency. Thus, operational efficiency is indeed an important consideration.

ALLOCATIONALLY EFFICIENCY

A market is said to be allocationally efficiently when price are determined in a way that equates the marginal rate of return (adjusted for risk) for all problems and savers. Therefore, in an allocationally efficient market scares saving are optimally allocated to productive investments in a way that benefit everyone.

10.1.4 Forms of Market Efficiency

Fama (1970,76) has done a great deed to operationalize the notion of capital market efficiency. He defines the three types of Market efficiency each of which is based on a difference notion to exactly what type of information is understood to be relevant in the phrase "All prices fully reflect all relevant information.

- **WEAK-FORM EFFICIENCY:** No investor can earn excess returns by developing trading rules based on historical price or return information. In other words, the information in past prices or returns is not useful or relevant in achieving excess returns.
- **SEMI STRONG FORM EFFICIENCY:** No investors can earn excess returns from trading rules based on any publicly available information. Example of publicly available information is annual reports of companies, investment advisory data such as "Heard on the street" in the wall street journal or ticker tape information.

- **STRONG-FORM EFFICIENCY**: No investor can earn excess returns using any information whether publicly available or not obviously, If markets were efficient in their form, price would fully reflect all information even though it might be hold exclusively by a corporate insider. If there is any inside information the market can use to **trade then** the strong form of market efficiency predicts that prices will have adjusted so that we cannot profit.

10.2 GENERAL ECONOMIC INFLUENCES

The centre stage in this analysis is the economy and market followed by industries and securities issued by various companies. The Federal Government has a key impact on the aggregate economy because they control monetary and fiscal policies. These basic economic forces exert an influence on all industries and all companies in the economy. The same complete impact can result from a significant change in monetary policy. A restrictive monetary policy that produces a decline in the growth rate of money supply reduces the supply of funds available to all businesses for working capital and expansion, and of funds available to individuals for buying goods and services. Monetary policy affects all segments of the economy.

Fiscal policy can encourage spending (through investment credits) or discourage spending (through taxes on petroleum products). Increases or decreases in spending on defense, highways also influence the general economic picture. All such changes have a major impact on those directly affected by the changes, but there is also a multiplier effect on those who supply goods and services to those directly affected.

Another entire economic variable that must be considered is inflation; because it has a major impact on interest rates and how consumers and companies save and spend their money. In addition to domestic and fiscal actions, other occurrences such as war, political conflicts in foreign countries or international monetary devaluation influence the aggregate economy. Because events influencing the aggregate economy also have such a profound effect on all industries and all companies within these industries, these macro-economic factors must be considered before industries can be analyzed.

10.3 INDUSTRY FACTOR INFLUENCES

Because of the importance of the general economic outlook, one should only consider investing in alternate industries after it has been decided that the general outlook is favourable. The industry outlook is determined by the general economic outlook and special industry factors that are generally national in scope but have greater influence on one or several industries. Examples of industry influence are strike, import or export quotas or taxes or government-imposed regulations. Because of the importance and pervasiveness of industry influences, an industry evaluation should be conducted prior to analyzing any individual firm.

10.4 THEORY OF VALUATION

It should be noted that the value of an underlying asset is the present value of expected returns from the asset during the holding period. An investment is expected to provide a stream of returns during the holding period, and it is important to discount this stream of expected returns at the investor's required rate of return to determine the value of the asset. Thus, to derive value for an asset it is important to calculate: (1) the stream of expected returns and (2) the required rate of return on the investment.

10.4.1 Streams of Returns

An estimate of the future returns expected from an investment includes the magnitude of the returns, the form of the returns, the time pattern of returns and the uncertainty of returns. The streams of return can be viewed in two ways as follows;

- **Form of Returns**
- **Time Pattern of Returns**

Form of Returns

Returns from an investment can take many forms including earnings, dividends, interest payments or gains based upon an increase in value during a period. Our emphasis is on the earnings of the firm and the dividends, in the context of security analysis.

Time Pattern of Returns

In addition, it is essential to calculate when the returns will be received because money has time value. (A Naira income today is worth more than a Naira income received a year from now). Thus, it is essential to know the time pattern of returns from investment so that the stream can be properly valued relative to alternate investments.

10.4.2 Required Rate of Return

The required rate of return on an investment is determined by: (1)the economy's real risk-free rate of return, plus (2) the expected rate of inflation during the holding period, and (3) a risk premium. All investments are affected by the risk-free rate and inflation (i.e., the nominal risk-free rate); the differential factor is the risk premium for different types of assets. It should be noted that the risk premium is a function of the uncertainty of returns on an asset.

10.5 INVESTMENTS: COMPARISON OF SECURITY VALUE AND PRICE

An investment is the commitment of funds for a period of time during which the funds are given up and the uncertainty (risk) involved. If you are sure of going to obtain returns on your investment, it is significant to determine the value of the asset at your required rate of return and then compare this value with the prevailing market price of the asset. The key point of investments is that you should purchase assets where the market price of the asset is equal to or less than the value you have estimated. Alternately, you should not acquire an asset if the market price exceeds your estimated value. In summary,

If Estimated Value > Market Price = Acquire

If Estimated Value < Market price = Don't Acquire

We will now discuss valuation of different investments

- A market is said to be…… when prices are determined in a way that equates the marginal rates of return for all producer and savers. (a) operational efficient (b) allocationally efficient (c) consumer efficient (d) business efficient
- ANS: B

10.5.1 Valuation of Bonds

It is simple to determine the value of bonds because the size and the time pattern of the returns from the bond over its life are known. A bond promises:

1. Interest payments every six months equal to one half the coupon rate times the face value of the bond, and
2. The payment of the principal (also referred to as face value) at the maturity of the bond.

As an example, in 2002, a N10,000 bond due in 2007 with a 10 percent coupon will pay N500 every six month for the life of the bond (the next 15 years). In addition, there is a promise to pay the N10.000 principal at maturity in 2007. Therefore, assuming the borrower does not default, the investor knows that payments will be made as at when due.

The value of any asset is the present value of the returns from the asset; the value of a bond is the present value of the interest payments (i.e., an annuity of ₦500every six month for 15 years) and the present value of the principal payment. The only unknown for this asset is the rate of return (assuming the borrower does not default). It is the rate of return that should be used to discount the expected stream of payments. Assuming that the prevailing nominal risk-free rate is 9 percent and the investor requires a 1 percent risk premium on this bond (because there is some probability of default), the required rate of return would be 10 percent. The present value of the interest payments is an annuity for 30 periods (15 years every six months) at one half the required return (5 percent).

₦500x 15.3725 = ₦7,686 (present value of interest at 10 percent)

The present value of the principal is likewise discounted at 5 percent for 30 periods and this is ₦10, 000 x . 2314 = ₦2, 314. The value of bond at 10 percent

Present value of interest payments ₦7, 686

Present value of principal payments ₦2. 314

Value of bond at 10 percent ₦ 10.000

This is the amount that an investor should be willing to pay for this bond assuming that his required rate of return on a bond of this risk class was 10 percent. If the bond is selling for less than this in the market, this would apparently be acceptable. If the market price is above this value, an investor should not buy it because his promised yield to maturity will be less than his required rate of return.

Alternatively, if the investor wants a 12percent return on this bond, the value would be as follows:

N500x 13.7648 = N6, 882

10, 000 x . 1741 =1,741

8, 623

10.6 VALUATION OF PREFERENCE SHARES

Preference shares involves a promise to pay a stated dividend, usually each quarter, for an infinite period, i.e., there is no maturity. As was true with a bond, stated payments are to be made on specified dates. Nonetheless, preference shares does not involve the same legal obligation to pay as bonds do, and payments are made only after bond interest payments are met, so uncertainty of payments is greater. This increased uncertainty means that a higher rate of return should be required on a firm's preference shares than is required on a firm's debentures.

Preference shares is a perpetuity, the value is simply the stated annual dividend divided by the required rate of return on the return on the asset as follows:

$$V = \frac{\text{Dividend}}{k_p}$$

Let us assume that a preferred stock has a N100 par value and a dividend of N8 a year. The required rate of return is 9 percent. Thus, the value of this preferred stock is:

₦8

.09 =₦88.89

Given the price of preferred stock, it is possible to derive the promised yield on this investment:

K_P =Dividend

Price

- Financial markets in which security prices rapidly reflect all relevant information about asset value are called ……. Capital market (a) efficient (b) perfect (c) security (d) informative
- ANS: B

10.7 VALUATION OF COMMON SHARES

The valuation of common stocks is definitely more difficult than that of bonds or preference shares because almost all the required inputs are unknown. In the case of a bond, the periodic interest payments are known, as well as the final payment at maturity.The only unknown is the discount rate, which is calculated from the prevailing nominal RFR plus risk free rates premium that is dependent upon the uncertainty of the interest payment. For preferred stock the only unknown is the required rate of return on the stock. In the case of common stock, an investor is uncertain about the size of the returns, the time pattern of returns, and the required rate of return. Basically, the dividend model includes the assumption that the value of a share of common stock is the present value of all future dividends as follows:



$$V_j = \frac{D_i}{(1+i)} + \frac{D_i}{(1+i)^2} + \frac{D_i}{(1+i)^3} + \frac{\ldots D_\infty}{(1+i)^\infty}$$

$$\sum_{i=1}^{\infty} \frac{D_t}{(1+i)_t}$$

Where:

V_j = Values of the common stock j

D_i = Dividend during period t

i = Required rate of return on stock i

A clear question is what happens in the case where the shares are not held for an infinite period? Assume a sale of the stock at the end of year 2

2. In such a case the formulation would be as follows:

$$V_j = \frac{D_i}{(1+i)} + \frac{D_2}{(1+i)^2} + \frac{SP_i^2}{(1+i)^2}$$

Where Spj^2= the sale price of stock j at the end of year 2.

The value is the two dividend payments during years 1 and 2 and the sale price (SP) for the stock at the end of year 2. Regarding the selling of the stock at the end of year 2, it is simply the value of all remaining dividend payments as follows:

$$SP_{j2} \frac{D_3}{(1+i)} + \frac{D_4}{(1+i)^2} + \frac{...D_\infty}{(1+i)^\infty}$$

Given, that SPj_2, is discounted back to the present by $1/(1+i)^2$, this becomes:

$$\frac{D_3}{(1+i)} + \frac{D_4}{(1+i)^2} + \frac{...D_\infty}{(1+i)^\infty}$$

$$\frac{D_3}{(1+i)^3} + \frac{D_4}{(1+i)^4} + \frac{...D_\infty}{(1+i)^\infty}$$

Which is simply an extension of the original equation whenever the stock is sold, its (sale price) will be the present value of all future dividends. When this ending value is discounted back to the present you are back to the basic formulation.

For stocks that do not pay dividends, the example is-the same except that some of the near-term dividend payments are zero. Notably, there are expectations that at some point the firm will pay dividends. If there was no such anticipation, an investor will never anticipate any cash flows, and nobody would be willing to buy such a security. With a non-dividend paying stock the firm is not paying any thing now, but reinvesting capital so that it will grow faster in the future. The formulation is as follows:



$$V_j = \frac{D_i}{(1+i)} + \frac{D_2}{(1+i)^2} + \frac{D_3}{(1+i)^3} + \frac{...D_\theta}{(1+i)^\theta}$$

Where:

$D_1 = 0$

$D_1 = 0$

The anticipation is that, when the firm begins paying dividends in P3, they will grow faster. The stock has value because of these future dividends and model is best for different holding periods remaining from short periods to longer intervals.

- ABC Company stock has a dividend rate of ₦1.08, normalized earning per share of ₦ 1.80, a discount rate of 13 percent and a growth rate of 8 percent. What is the market price per share; (a) ₦21.60 (b) ₦ 18.60 (c) ₦12.60 (d) ₦10.80
- ANS: A

10.7.1 One Year Holding Period

It is assumed that the investor wants to buy the stock, hold it for one year, and sell it at the end of the year. To determine the value of the stock (i.e., how much the investor should pay for it) the dividend to be received during the period and the required rate of return on this stock must be estimated. To calculate the di**v**idend for the coming year will probably be based upon the current dividend and anticipations regarding changes during the year. Assume the firm earned ₦2.50 a share last year and paid a dividend of ₦1 a share (a 40 percent payout which has been fairly consistent over time). In addition, the firm is anticipated to earn about ₦2.75 during the coming year and to increase the dividend to ₦1.1 0 per share.

For now, let us assume that you prefer dividend yield approach. You anticipate the dividend yield on this stock to be 5 percent. Given the expected dividend of ₦1.10 per share, this implies a future stock price of ₦22(1.10/.05). It is important, however, to determine the required rate of return on this stock investment. You have estimated the dividend at N 1.10 (payable at year end), the ending price at ₦22, and the required rate of return at 14 percent. Given these inputs, the value of this asset to you is as follows:

$$V_i = \frac{₦1.10}{(1 + .14)} + \frac{₦22.00}{(1 + .14)}$$

$$= \frac{1.10}{1.14} + \frac{22.00}{1.14}$$

$$= .96 + 19.30$$

= ₦20.26

It is necessary to note that there has been no mention of current price of the stock. This is because the current price is not appropriate to the investor until after he has derived an independent value based on his estimates of the relevant variables.

10.7.2 Multiple-Year Holding Period

In this case it is assumed that you are considering buying the stock now and expect holding the stock for several years and then selling it. The decision to hold the stock for several years complicates the valuation procedure, because it is significant to estimate several future dividend payments and also to estimate the value of the stock for a number of years in the future.

In the current example, assume the anticipated holding period is three years and you estimate the following dividend payments at the end of each year:

Year 1 = ₦1.10/Share

Year 2 = ₦1.20/Share

Year3= ₦1.35/Share

The next estimate to be made is the expected ending price for the stock three years in the future. If we want to use the dividend yield approach, it is essential to project the dividend yield on this stock three years from now. Assume you estimate a dividend yield of 4 percent. Given the ₦1.35 dividend payment, this means an ending price of ₦33.75 (₦1.35 /. 04)

The final estimate is the required rate of return on this stock during this period. Assuming that the 14 percent desired rate is still relevant for this period, the value of this stock is as follows:

$$V_{i=} \quad \frac{1.10.}{1+.14} + \frac{1.20}{(1+.14)^2} + \frac{1.35}{(1+.14)^3} + \frac{33.75}{(1+.14)^3}$$

$$= \frac{1.10.}{1.14} + \frac{1.20}{(1.30)} + \frac{1.35}{(1.4815K1.4815)} + 33.75$$

= .96 + .92 + .91 + 22.78

= ₦25.57

Again, at this point you will compare this derived value for the stock to its market price to determine whether you should purchase the stock or not.

- The following below are the condition necessary for perfect capital market (a) market are frictionless (b) there is imperfect competition in product and security markets (c) markets are informational efficient and information is costless (d) all individuals are rational expected utility maximizes
- ANS: B

10.7.3 Infinite Period Model.

It is possible to extend the discussion of the multi-period model by considering longer holding periods (e.g., 5,10 or l5 years). It is believed that the benefits to be derived from the extensions would be minimal and the boredom factor would quickly dominate. The simplest assumption is that the future dividend stream increases at a constant rate for the infinite period.

This model is specified as follows:

$$V_j = \frac{D_0\ (1+g)}{(1+i)} + \frac{D_0\ (1+g)2}{(1+i)^2} + \frac{D_0^2(1+g)n}{(1+i)^n}$$

Where:

V_j = the value of stock j

Do = the dividend payment in the current period

g = the constant growth rate of return on stock j

n = the number of periods which is assumed to be infinite

The formulation can be simplified to the following expression:

$$\underline{V_j} = \quad \underline{D_i}$$

i-g

In many cases, rather than V_j the expression is written:

$$P_j = \underline{D_i}$$

i-g

The key estimates to be made are the required rate of return (i) and the expected growth rate of dividends (g). After estimating g, it is a simple matter to estimate D_1, because it is current dividend D_o multiplied by (i + g).

For example, let us assume that a stock with a current dividend of₦1 a share, which you expect to increase to ₦l.09 next year. You believe that over the long run, the firm's earnings and dividend will continue to grow at 9 percent; your estimate of g is 0.09. For the long run, you expect that the rate of inflation will fall and you believe that the long run required rate of return on this stock should be 13 percent; your estimate of i is 0.13. Thus, the appropriate variables are:

g = .09
i = .13
D_i = 1.09 (₦1.00 x 1.09)

$$P = \frac{1.09}{.13 - .09}$$

$$P = \frac{1.09}{.04}$$

P = ₦27.25

For the near term you believe 14 percent was relevant due to a high rate inflation. Examples are:

1. g = . 09; i = . 14; D =₦1.09 (We assume an increase in i)

$$P = \frac{₦1.09}{.14 - .09}$$

$$= \frac{₦1.09}{.05}$$

= ₦21.80

2. g =.10;i = .13;D = ₦ 1.10 (we assume an increase in g)

$$P = \frac{₦1.10}{.13 - .10}$$

$$= \frac{₦1.10}{.30}$$

= ₦36.67

Apparently, a 1 percent change in either g or ihas a major impact on the calculated price of the stock. The important relationship is the spread between the required rate of return and the expected growth rate. Anything that causes a fall in the spread will cause a rise in prices, while any change that results in arise in the spread will cause a fall in stock prices.

- This theory neglect an idealized world of perfect capital markets where transactions costs are assumed to be zero (a) capital market efficiency (b) perfect allocational efficiency (c) operational efficiency (d) semi-strong form efficiency
- ANS: C

10.7.4 Infinite Growth Model and Growth Companies

The three key assumptions of the growth model are:

1. A constant rate of growth
2. The constant growth rate will continue for an infinite period.
3. The required rate of return (i) exceeds the infinite growth rate (g). If not, the model explodes and gives useless results, i.e., the denominator becomes a negative value.

10.8 PRAGMATIC MULTIPLIER APPROACH:

Many investors prefer to derive value based upon earnings multiplier approach. The basic rationale for this approach is that assets are the capitalized value of future earnings, which means that investors derive value by determining how many Naira they are willing to pay for a Naira of expected earnings, (typically, earnings during the next 12 month period). If an investor is willing to pay 10 times expected earnings, a stock that is expected to earn N2 a share will sell for N20. This multiplier, also referred to as the price-earnings (P/E) ratio is derived as follows:

Earnings Multiplier = Price Earning Ration = Current Prices

Next 12 Month Earnings

Specifically, the basic dividend valuation model is as follows:

$$P_i = \frac{D_i}{i - g}$$

If we divide both sides of the equation by E_1(the expected earnings during the next 12 months):

$$\frac{P_i}{E_i} = \frac{D_i/E}{i-g}$$

Therefore, the P/E ratio is determined by:

a. The expected dividend payout ratio (dividend divided by earnings)
b. The required rate of return on the stock
c. The expected growth rate of dividend for the stock

Let us assume that a stock under consideration has an expected dividend payout of 50 percent (i.e., the firm usually pays out 50 percent of its earnings as dividends), a required rate of return of 13 percent and expected growth rate for dividends of 9 percent, we would have the following:

D/E = .50; i = .13; g =.09

$$P/E = \frac{.50}{.13 - .09}$$

$$= \frac{.50}{.04}$$

= ₦12.5

change in either i or g will have a large impact on the multiplier as shown in the following examples:

a. D/E = 0.50; i = 0.14; g = 0.09(we assume a rise in i)

$$P/E = \frac{.50}{.14 - .09}$$

$$= \frac{.50}{.05}$$

=₦10

b. D/E = 0.50; i = 0.13; g = 0.10(we assume a rise in g)

$$P/E = \frac{.50}{.13 - .09}$$

$$= \frac{.50}{.03}$$

= ₦16.7



SUMMARY

Basic instruction of security analyses are adequately covered in our discussions. Grasping the stuff in this Study Session simply requires basic understanding of some of the issues discussed in Study Session 8 on Mathematics of Finance. Refreshing yourself on the discussion on time value of money as pertaining especially to discounting methods or present value would help your understanding of the discussion in this Study Session of our course text in Introduction to Finance FIN 210.

Before an individual makes an investment, he must determine the required rate of return and how much he should pay for a particular investment to get this required return. The determination of how much he should pay for an investment is really a determination of the value of the asset

SELF ASSESSMENT QUESTIONS

1. A bond with 8 years until maturity pays an annual coupon of 75 and will also ₦ 1000 at maturity. What is the price of the bond if interest rate is 8%? (A):₦ 431.0 (b):₦ 1,000 (c):₦ 971.27 (d): ₦ 459.73
2. JenlogbatemiPlc has in issue 18% ₦ 1,000 irredeemable debenture currently selling at N1.150. determine the cost of debt if the corporate tax rate is 33% (a) 10.2% (b) 11% (c) 12% (d) 13% (e) 15%
3. JelutoroPlc has just paid a dividend of 15k per share and has a projected dividend growth rate of 8% p.a. if the current market price of the share is N1.50, what is the cost of equity? (a) ₦ 16.6% (b) ₦ 17.7% (c) ₦ 18.8% (d) ₦ 19.9% (e) 20.22%
4. The element of cost of capital are among others the following (a) risk free (b) premium for financial risk (c) premium for insurance risk (d) a and b
5. ……. Is the risk associated with introduction of debt into a company capital structure (a) business risk (b) specific risk (c) interest rate (d) financial risk
6. Cost of equity can be evaluated using the……. (a) dividend valuation model (b) dividend valuation growth model (c) dividend growth rate model (d) valuation growth model
7. Cost of preference share is best define as the …… rate of return expected by the provider of preference share capital (a) maximum (b) highest (c) biggest (d) minimum
8. One of the condition for using weighted average cost of capital as a discount rate for investment project appraisal is that……. (a) the company's capital structure is optimal (b) the capital structure is not optimal (c) the company's weighted average cost of capital reflects the company's short future capital structure (d) all of the above
9. One of the components of weighted average cost of capital are among others except (a) cost of debt (b) cost of preference shares (c) cost of equity (d) value of the firm
10. From the following computed ratio, calculate the current market price of one ordinary share of XYZ Ltd, dividend cover = 1.5times, price earnings ratio = 5 times, return on capital employed = 25%, earning per share 37 kobo, dividend per share 25kobo. (a) ₦ 2.85 (b) ₦ 1.85 (c) ₦ 4.58 (d) ₦ 3.85

Use the following question for 11-12

Eddy Biggs Bugger's stock is currently selling for₦72.00 per share. The stock is expected to pay ₦ 2.40 kobo dividend at the end of the next year. It is reliably estimated that the stock will sell at the end of one year.

11. Assuming that the dividend and price forecasts are accurate, would you pay ₦72.00 today for the stock to hold if for one year it your required rate of return were 13 percent. (a) ₦ 87.38 (b) ₦ 40.80 (c) ₦ 69.38 (d) ₦ 2.00
12. Given the present price of ₦72.00 and the expected dividend of ₦2.40 what would the price have to be at the end of the year to justify purchase today if your required return were 15 percent. (a) ₦21.60 (b) ₦ 18.60 (c) ₦80.40 (d) ₦ 3.50
13. The expected dividend per share and the price per share of a company at the end of the year are given at ₦3.50 and ₦65.00 respectively. The investors required rate of return is 10 percent. Calculate the current market price of the security. As an investment analyst, would recommend a sale or a purchase of the security if the current market price is ₦56? (a) ₦ 59.05 (b) ₦ 37.32 (c) ₦ 12.00 (d) ₦ 69.38
14. Prices that are equally likely to rise or fall on any particular day previous days, are said to follow…….. (a) random walk (b) efficient market hypothesis (c) Fama (1976) operational nation of capital market (d) efficiency theory.

SAQs 10.2

The current dividend of First Capital Plc is N3.50 per share and it is expected to grow at a fast rate of 15% per annum for the next three years. Thereafter, dividend will stabilize at a normal rate of 8% per annum indefinitely. What would be the value of First Capital Plc share, if the investors require rate of return is 13%?.

SAQ 10.3

N50,000 is invested at the beginning of 19.8 and remain invested, on 1st January of each subsequent year another N4000 is added to it. What sum will be available in six years later on if interest is compounded each year at the rate of 5% per annum?

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APPENDIX

SOLUTION TO SELF ASSESSMENT QUESTION

STUDY SESSION ONE

Q	1	2	3	4	5	6	7	8	9	10
A	C	A	A	D	A	B	B	A	C	A

STUDY SESSION TWO

Q	1	2	3	4	5	6	7
A	C	A	D	D	B	A	A

STUDY SESSION THREE

ANSWERS

Q	1	2	3	4	5	6	7	8
A	D	D	E	C	E	C	A	E

9. The following are the shortcomings of profit maximization objective

(i) Maximization of profit simply by expanding the scale of operation and not in relative term.

(ii) Maximization of profit could be achieved at the expense of jeopardizing long run benefit.

10. (i) Vagarious of stock market prices or

(ii) stock market meltdown

STUDY SESSION FOUR

ANSWERS

Q	1	2	3	4	5	6
A	C	A	B	B	A	C

STUDY SESSION FIVE

a. ANS: Bankers Acceptance 3 parties commercial papers- 2 parties

b. ANS: Both income and capital values could be eroded by inflation

c. ANS: Par value; values stated in the issued document

: Market value; value as determined by investors in bond market

d. ANS: Act as agent to the two parties

e. ANS: Secondary market

f. ANS: Initial public offering or (is a primary market transaction)

g. ANS: Denomination intermediation

h. ANS: Money market

i. ANS: Transmission of monetary policy

j. ANS: Financial institutions

STUDY SESSION SIX

ANSWERS

Q	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	B	B	A	C	B	B	C	B	C	B	D	D	B	B

STUDY SESSION SEVEN

SOLUTION TO SAQ 7

Q	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	A	A	B	E	D	A	C	D	C	B	A	A	D	D	D

STUDY SESSION EIGHT

Solution to SAQ 1 ESSAY

Union BANK LTD

$FV = Pv\ (1 + r/m)^{nm}$

$FV = ₦\ 10{,}000\ \{1 + \frac{0.24}{4}\}^{5x4}$

$FV = ₦\ 10{,}000\ (I + 0.06)^{20}$

$FV = ₦\ 32{,}071.35$

GTbank

$FV = PV\ (1 + r)^{n}$

$FV = 10{,}000\ (1 + 0.3)^{5}$

$FV = ₦\ 37{,}129.30$

GTbank will provide Kemi with the highest return at the end of the five years period, because ₦ 37,129.30 > N32, 071.35

SAQ 2 Answer to question

Questions	1	2	3	4	5	6	7	8	9	10	11	12	13
Answers	A	C	D	B	D	B	D	C	D	C	A	B	B

STUDY SESSION NINE

SAQ 1 Answer to questions

Questions	1	2	3	4	5	6	7	8	9	10
Answers	C	A	B	D	D	C	A	B	A	B

SAQ 2 ESSAY

SOLUTION 1

Costs incurred calculated as follows:

		₦
Direct materials 405 of 3,000,000	=	1,000,000
Variable overheads 15% of 3,000,000	=	450,000
Fixed overheads 205 of 3,000,000	=	600,000
Direct labour 30% of 3,000,000	-	900,000

AVERAGE VALUE OF CURRENT ASSETS

	₦
Raw materials 2/12 x 1200,000/1	200,000
Working in progress	
(100% completed)	
Materials 2/12 x 1,200,000	200,000
(50% complete)	
Labour 1/12 x 900,000	74999.99
(100% complete)	
Variable overheads	37,499.99
Finished goods	
Materials 2/12 x 1200,000	200,000
Labour 2/12 x 900,000	150,000
Variable overheads 2/12 x 450,000	75,000
Debtors 3 ½ x 450,000	1,575,000
	2,512,499.99
Less: average value of current liabilities:	
Materials 25/12 x 1200,000	249,999.99
Labour 1/52 x 900,000	17,307.69
Variable overhead 2/12 x 450,000	75,000
Fixed overheads 1/12 x 600,000	49,999.99
Selling and distribution 1/12 x 300,000	24, 999.99
417,307.66	
Working capital required	2,095,192.33

Note: It has been assumed that all the direct materials are allocated to work in progress when production commenced.

SOLUTION 2

(a) Average inventory = $\frac{\text{opening + closing inventories}}{2}$

= $\frac{3 \text{ million} + 2 \text{ million}}{2} = \frac{5}{2} = 2.5$ million

(b) Inventory turnover ratio = $\frac{\text{Cost of goods sold}}{\text{Average inventory}}$

= $\frac{8.2 \text{ million}}{2.5 \text{ million}} = 3.3$

This implies that the inventory cycle occurs 3.3 a year

(c) Days in inventory = $\frac{\text{Days in a year}}{\text{Inventory turnover ratio}} = \frac{365}{3.3} = 110.6$ days

It implies that inventory cycle is slightly more than 110 days.

(d) Average account receivable = $\frac{\text{opening + closing account receivables}}{2}$

= $\frac{2{,}000{,}000 + 1{,}600{,}000}{2} = \frac{3{,}600{,}000}{2} = 1{,}800{,}000$

(e) Average receivable turnover = $\frac{\text{Credit sales}}{\text{Average account receivables}}$

= $\frac{11{,}500{,}00}{1{,}300{,}000} = 6.4$

(f) Days in receivables = $\frac{\text{Days in year}}{\text{Average receivable turnover}} = \frac{365}{6.4} = 57$ days

(g) Average payables = $\frac{\text{opening + closing account receivables}}{2}$

= $\frac{1{,}000{,}000 + 750{,}000}{2} = \frac{1{,}750{,}000}{2} = 875{,}000$

(h) Account payable deferral period = $\frac{\text{cost of goods sold}}{\text{Average payable}}$

= $\frac{8{,}200{,}000}{875{,}000} = 9.4$

(i) Days in payables = $\frac{\text{Days in a year}}{\text{Accounts payable deferral period}}$

= $\frac{365}{9.4}$ = 38.8 days

(j) Operating cycle = Days in inventory + Days in receivables

= 110.6 days + 57 days = 167.6 days

(b) Cash cycle = Operating cycle – Days in payables
= 167.6 days - 38.8 days = 128.8 days

SUGGESTION

The need for short-term financial decision making is suggested by the gap between the cash inflows and cash outflows. This is related to the length of the operating cycles and account payables period. The gap can be filled either by borrowing or by holding a liquidity reserve for marketable securities. The gap can be shortened by changing the inventory, receivables, and payables periods

STUDY SESSION TEN

SAQ 1

Answers

Questions	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Answers	C	A	C	D	D	B	D	C	D	B	C	C	A	A

SAQ 2 ESSAY

SOLUTION

1st Stage

Present value from year 1 to 3 shown below

$$Po = \frac{Do[1+g]}{(1+ke)^1} + \frac{Do[1+g]^2}{(1+ke)^2} + \frac{Do[1+g]^3}{(1+ke)^3}$$

$$Po = \frac{3.50[1.15]}{(1.13)^1} + \frac{350[1.15]^2}{(1.13)^2} + \frac{350[1.15]^3}{(1.13)^3}$$

$$Po = 3.50[1.15][1.13]^{-1} + 3.50[1.15]2[1.13]^{-2} + 3.50[1.15]^3[1.13]^{-3}$$

Po = ₦10.88k

2nd stage

(Present value from year 4 to infinity is shown below)

$$P_3 = \frac{D_3[1+g]}{Ke - g}$$

D_3 = Dividend per share at the end of year 3

$3.50\ [1.15]^3 = 5.32$

$$P_3 = \frac{5.32\ [\ 1 + 0.08]}{0.13 - 0.08}$$

$$P_3 = \frac{5.32\ [\ 1.08]}{0.05}$$

P3 = N114.91k

Discounting P3 back to present

$$Po = \frac{114.91}{[1+ 0.13]^3}$$

$Po = 114.91\ [1.13]^{-3}$

Po = ₦79.64k

The value of first capital plc share is 90.52

Po = 10.88 + ₦79.64k

Po = ₦90.52

Solution SAQ 10.3

Compound interest with annual investment

$At = (A_0 + {}^P/r)\ (1 + r)^t = {}^P/r$

Where A_0 = Initial investment, r = of interest

P = Subsequent annual investment

$$At = (50{,}000 + \frac{4{,}000}{.05})\ (1.05)^6 - \frac{4{,}000}{.05}$$

= ₦94,212

Should you require more explanation on this study session, please do not hesitate to contact your e-tutor via the LMS.



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