



STUDY PACK

ON

FINANCE FOR HUMAN RESOURCE MANAGERS

INTERMEDIATE I

FINANCE FOR HUMAN RESOURCE MANAGERS

INTERMEDIATE I

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FOREWORD

This fourth edition of the CIPM study pack is one of the learning resources recommended to persons preparing for certification through professional examinations. It is uniquely prepared to meet the knowledge standards of HR certification bodies and/or degree awarding institutions. The study pack is highly recommended to researchers, people managers and organisations responsible for human capital development in its entirety.

Each chapter in the text has been logically arranged to sufficiently cover all the various sections of this subject as itemised in the CIPM examination syllabus. This is to enhance systematic learning and understanding of the users. The document, a product of in-depth study and research, is practical and original. We have ensured that topics and sub-topics are based on the syllabus and on contemporary HR best practices.

Although concerted effort has been made to ensure that the text is up to date in matters relating to theories and practices of contemporary issues in HR, nevertheless, we advise and encourage students to complement the study text with other study materials recommended in the syllabus. This is to ensure total coverage of the elastic scope and dynamics of the HR profession.

Thank you and do have a productive preparation as you navigate through the process of becoming a seasoned Human Resources Management professional.

Olusegun Mojeed, FCIPM, fnli
President & Chairman of the Governing Council

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Oluwatoyin Naiwo, FCIPM
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CHAPTER 1

FINANCIAL MANAGEMENT: AN OVERVIEW

Learning Objectives

After studying this chapter, candidates should be able to:

1. Understand the Meaning, Element and Scope of Financial Management
2. Juxtapose the Preference of Choice between the Profit Maximization and Wealth Maximization Objectives of Firms
3. Explain the various Functions and Roles performed by Financial Managers and
4. Elucidate the Significance and Importance of Financial Management as it applies to HR Functions

1.0 Introduction

Every organization needs finance to meet their requirement in the business world. Any kind of business depends on the finance. Hence, it is called as lifeblood of business organization. In the modern business world, all the activities are concerned with making profit through any ventures or enterprises. The entire business activities are directly related with making profit. According to the economics concept of factor of production, rent given to landlord, wages given to labour, interest given to capital and profit given to shareholders or proprietors, a businessman concern needs finance to meet all necessities. Hence finance may be described to as capital, investment, fund etc. but each term is having different meanings and unique behaviour. Increasing the profit is the main aim of any kind of economic activity.

Meaning of Finance

According to Khan and Jain (2018), “Finance is the art and science of managing money.” An excerpt from the Oxford dictionary, reveals that the concept connotes ‘management of money.’ The Webster’s Ninth New Collegiate Dictionary, defines it as “the science on study of the management of funds’ and the management of fund as the system that includes the circulation of money, the granting of credit, the making of investments, and the provision of banking facilities.”

Definition of Business Finance

According to the Wheeler, business finance is that business activity which concerns with the acquisition and conversation of capital funds in meeting financial needs and overall. In the Encyclopedia of Social Sciences, “Corporation finance deals with the financial problems of corporate enterprises. These problems include the financial aspects of the promotion of new

enterprises and their administration during early development, the accounting problems connected with the distinction between capital and income, the administrative questions created by growth and expansion, and finally, the financial adjustments required for the bolstering up or rehabilitation of a corporation which has come into financial difficulties”.

1.1 Types of Finance

Finance is one of the important and integral part of business concerns, hence, it plays a major role in every part of the business activities. It is used in all the area of the activities under the different names. Finance can be classified into two major parts:

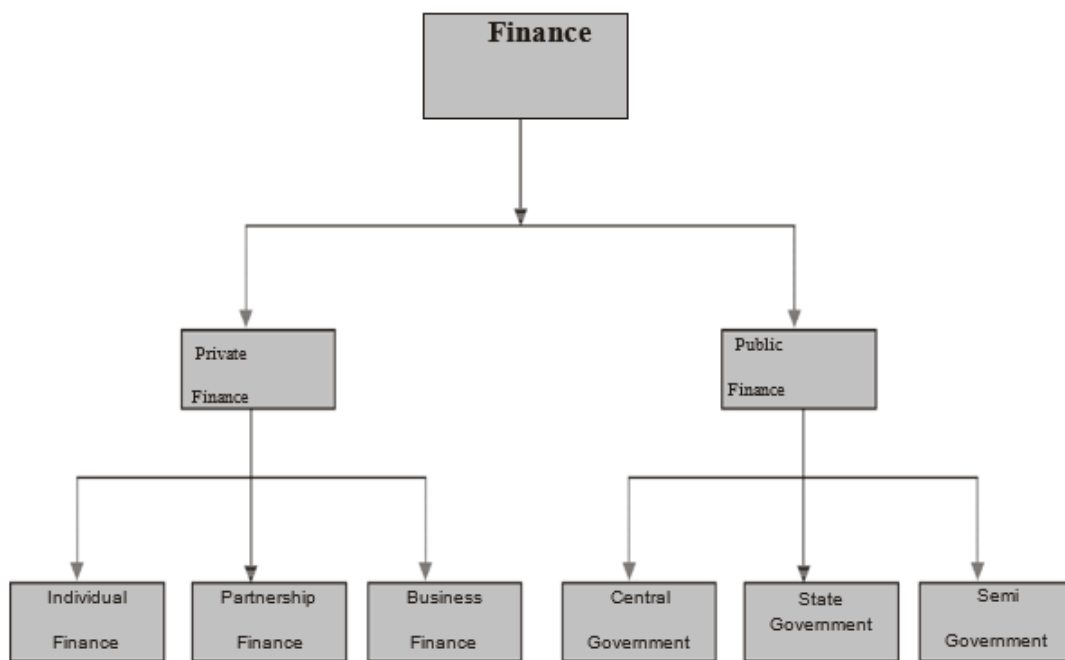


Fig. 1.1 Types of Finance

Private Finance: This includes the individual, firms, business or corporate financial activities to meet the financial requirements.

Public Finance: This is the concern with revenue and disbursement of government such as central government, state government and semi-government financial matter.

1.2 Financial Management

Financial management is an integral part of overall management. It is concerned with the duties of the financial managers in the business firm. The term financial management has been defined by Solomon, “It is concerned with the efficient use of an important economic resource namely,

capital funds”. The most popular and acceptable definition of financial management as given by S.C. Howard and Upton (1953):: Financial management “as an application of general managerial principles to the area of financial decision-making.

Weston and Brigham (2016): Financial management “is an area of financial decision-making, harmonizing individual motives and enterprise goals”. Joseph and Massie (2013): Financial management “is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations. Kuchal (2014): is that “Financial Management deals with procurement of funds and their effective utilization in the business”.

Thus, Financial Management is mainly concerned with the effective funds of management in the business. In simple words, Financial Management as practiced by business firms can be called as Corporation Finance or Business Finance

1.3 Elements and Scope of Financial Management

Financial management is one of the important parts of overall management, which is directly related with various functional departments like personnel, marketing and production. Financial management covers wide area with multidimensional approaches. The following are the important scope of financial management.

1. Financial Management and Economics

Economic concepts like micro and macroeconomics are directly applied with the financial management approaches. Investment decisions, micro and macro environmental factors are closely associated with the functions of financial manager. Financial management also uses the economic equations like money value discount factor, economic order quantity etc. Financial economics is one of the emerging areas, which provides immense opportunities to finance, and economical areas.

2. Financial Management and Accounting

Accounting records includes the financial information of the business concern. Hence, we can easily understand the relationship between the financial management and accounting. In the olden periods, both financial management and accounting are treated as a same

discipline and then it has been merged as Management Accounting because this part is very much helpful to finance manager to take decisions. But these days, financial management and accounting discipline are separate and interrelated.

3. Financial Management and Mathematics

Modern approaches of the financial management applied large number of mathematical and statistical tools and techniques. They may also be known as econometrics. Economic order quantity, discount factor, time value of money, present value of money, cost of capital, capital structure theories, dividend theories, ratio analysis and working capital analysis are used as mathematical and statistical tools and techniques in the field of financial management.

4. Financial Management and Production Management

Production management is the operational part of the business concern, which helps to transform the funds traded in business venture into profit. Profit of the concern depends upon the production performance. Production performance needs finance, because production department requires raw material, machinery, wages, operating expenses etc. These expenditures are decided and estimated by the financial department and the finance manager allocates the appropriate finance to production department. The financial manager must be aware of the operational process and finance required for each process of production activities.

5. Financial Management and Marketing

Produced goods are sold in the market with innovative and modern approaches. For this, the marketing department needs finance to meet their requirements

The financial manager or finance department is responsible to allocate the adequate finance to the marketing department. Hence, marketing and financial management are interrelated and depends on each other.

6. Financial Management and Human Resource

Financial management is also related with human resource department, which provides manpower to all the functional areas of the management. Financial manager should

carefully evaluate the requirement of manpower to each department and allocate the finance to the human resource department such as wages, salary, remuneration, commission, bonus, pension and other monetary benefits to the human resource department. Hence, financial management is directly related with human resource management.

1.4 Objectives of Financial Management

Effective procurement and efficient use of finance lead to proper utilization of the finance by the business concern. It is the essential part of the financial manager. Hence, the financial manager must determine the basic objectives of the financial management. Objectives of Financial Management may be broadly divided into two parts such as :

1. Profit maximization
2. Wealth maximization.

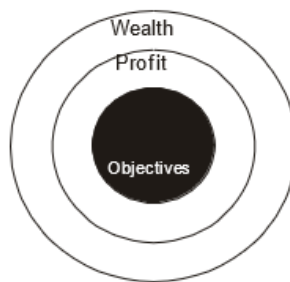


Fig. 1.2 Objectives of Financial Management

Profit Maximization

Main aim of any kind of economic activity is earning profit. A business concern is also functioning mainly for the purpose of earning profit. Profit is the measuring techniques to understand the business efficiency of the concern. Profit maximization is also the traditional and narrow approach, which aims at exploiting the profit of the concern. Profit maximization consists of the following important features:

1. Profit maximization is also called cashing per share maximization. It leads to maximization of the business operation for profit maximization.
2. Ultimate aim of the business concern is earning profit; hence, it considers all the possible ways to increase the profitability of the concern.

3. Profit is the parameter of measuring the efficiency of the business concern. So, it shows the entire position of the business concern.
4. Profit maximization objectives help to reduce the risk of the business.

Favourable Arguments for Profit Maximization

The following important points are in support of the profit maximization objectives of the business concern:

- (i) Main aim is earning profit.
- (ii) Profit is the parameter of the business operation.
- (iii) Profit reduces risk of the business concern.
- (iv) Profit is the main source of finance.
- (v) Profitability meets the social needs also.

Unfavourable Arguments for Profit Maximization

The following important points are against the objectives of profit maximization:

- (i) Profit maximization leads to exploiting workers and consumers
- (ii) Profit maximization creates immoral practices such as corrupt practice, unfair trade practice, etc.
- (iii) Profit maximization objectives leads to inequalities among the stakeholders such as customers, suppliers, public shareholders, etc.

Drawbacks of Profit Maximization

Profit maximization objective consists of certain drawback also:

- (i) **It is complex:** In this objective, profit is not defined precisely or correctly. It creates some unnecessary opinion regarding earning habits of the business concern.
- (ii) **It ignores the time value of money:** Profit maximization does not consider the time value of money or the net present value of the cash inflow. It leads to certain differences between the actual cash inflow and net present cash flow during a particular period.
- (iii) **It ignores risk:** Profit maximization does not consider risk of the business

concern. Risks may be internal or external which will affect the overall operation of the business concern.

Wealth Maximization

Wealth maximization is one of the modern approaches, which involves latest innovations and improvements in the field of the business concern. The term wealth means shareholder wealth or the wealth of the persons of those who are involved in the business concern. Wealth maximization is also known as value maximization or net present worth maximization. This objective is a universally accepted concept in the field of business.

Favourable Arguments for Wealth Maximization

- (i) Wealth maximization is superior to the profit maximization because the main aim of the business concern under this concept is to improve the value or wealth of the shareholders
- (ii) Wealth maximization considers the comparison of the value to cost associated with the business concern. Total value detected from the total cost incurred for the business operation. It provides extract value of the business concern.
- (iii) Wealth maximization considers both time and risk of the business concern.
- (iv) Wealth maximization provides efficient allocation of resources.
- (v) It ensures the economic interest of the society.

Unfavourable Arguments for Wealth Maximization

- (i) Wealth maximization leads to prescriptive idea of the business concern but it may not be suitable to present day business activities.
- (ii) Wealth maximization is nothing, it is also profit maximization, it is the indirect name of the profit maximization.
- (iii) Wealth maximization creates ownership-management controversy.
- (iv) Management alone enjoy certain benefits.
- (v) The ultimate aim of the wealth maximization objectives is to maximize the profit.
- (vi) Wealth maximization can be activated only with the help of the profitable position of the business concern.

1.5 Approaches to Financial Management

Financial management approach measures the scope of the financial management in various fields, which include the essential part of the finance. Financial management is not a revolutionary concept but an evolutionary. The definition and scope of financial management has been changed from one period to another period and applied various innovations. Theoretical points of view, financial management approach may be broadly divided into two major parts.

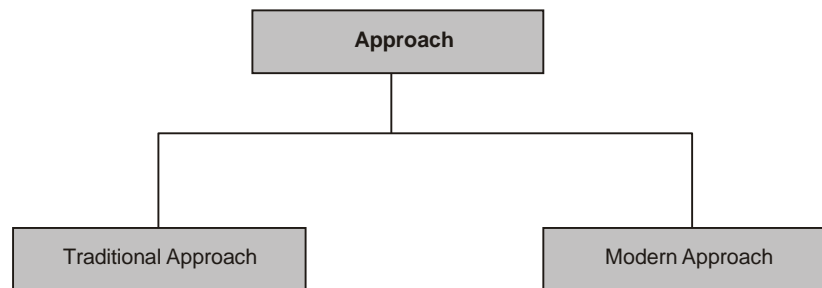


Fig. 1.3 Approaches to Finance Management

Traditional Approach

Traditional approach is the initial stage of financial management, which was followed, in the early part of during the year 1920 to 1950. This approach is based on the past experience and the traditionally accepted methods. Main part of the traditional approach is raising of funds for the business concern. Traditional approach consists of the following important areas: Arrangement of funds from lending body. Arrangement of funds through various financial instruments. Finding out the various sources of funds.

1.6 Functions/Roles of Financial Managers

Finance function is one of the major parts of business organization, which involves the permanent, and continuous process of the business concern. Finance is one of the interrelated functions which deal with personal function, marketing function, production function and research and development activities of the business concern. At present, every business concern concentrates more on the field of finance because, it is a very emerging part which reflects the entire operational and profit ability position of the concern. Deciding the proper financial function is the essential and ultimate goal of the business organization.

Finance manager is one of the important role players in the field of finance function. He must have entire knowledge in the area of accounting, finance, economics and management. His position

is highly critical and analytical to solve various problems related to finance. A person who deals finance related activities may be called finance manager.

Finance manager performs the following major functions:

1. Forecasting Financial Requirements

It is the primary function of the Finance Manager. He is responsible to estimate the financial requirement of the business concern. He should estimate, how much finances required to acquire fixed assets and forecast the amount needed to meet the working capital requirements in future.

2. Acquiring Necessary Capital

After deciding the financial requirement, the finance manager should concentrate how the finance is mobilized and where it will be available. It is also highly critical in nature.

3. Investment Decision

The finance manager must carefully select best investment alternatives and consider the reasonable and stable return from the investment. He must be well versed in the field of capital budgeting techniques to determine the effective utilization of investment. The finance manager must concentrate to principles of safety, liquidity and profitability while investing capital.

4. Cash Management

Present days cash management plays a major role in the area of finance because proper cash management is not only essential for effective utilization of cash but it also helps to meet the short-term liquidity position of the concern.

5. Interrelation with Other Departments

Finance manager deals with various functional departments such as marketing, production, personnel, system, research, development, etc. Finance manager should have sound knowledge not only in finance related area but also well versed in other areas. He must maintain a good relationship with all the functional departments of the business organization.

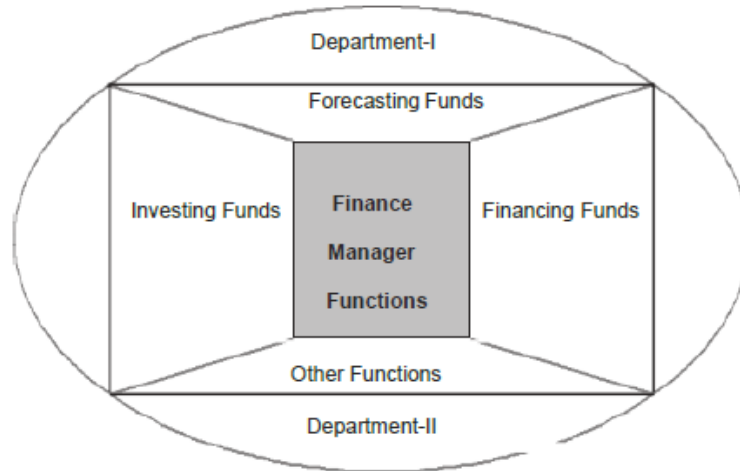


Fig. 1.4 Functions of Financial Manager

1.7 Importance of Financial Management

Finance is the lifeblood of business organization. It needs to meet the requirement of the business concern. Each and every business concern must maintain adequate amount of finance for their smooth running of the business concern and also maintain the business carefully to achieve the goal of the business concern. The business goal can be achieved only with the help of effective management of finance. We can't neglect the importance of finance at any time and at any situation. Some of the importance of the financial management is as follows:

Financial Planning: Financial management helps to determine the financial requirement of the business concern and leads to financial planning of the concern. Financial planning is an important part of the business concern, which helps in the promotion of an enterprise.

Acquisition of Funds: Financial management involves the acquisition of required finance to the business concern. Acquiring needed funds play a major part of the financial management, which involve possible source of finance at minimum cost.

Proper Use of Funds: Proper use and allocation of funds helps to improve the operational efficiency of the business concern. When the finance manager uses the funds properly, they can reduce the cost of capital and increase the value of the firm.

Financial Decision: Financial management helps to take sound financial decision in the business concern. Financial decision will affect the entire business operation of the concern. Because there

is a direct relationship with various department functions such as marketing, production personnel, etc.

Improve Profitability: Profitability of the concern purely depends on the effectiveness and proper utilization of funds by the business concern. Financial management helps to improve the profitability position of the concern with the help of strong financial control devices such as budgetary control, ratio analysis and cost volume profit analysis.

Increase the Value of the Firm: Financial management is very important in the field of increasing the wealth of the investors and the business concern. Ultimate aim of any business concern will be to achieve the maximum profit and higher profitability which helps to maximize the wealth of the investors as well as the nation.

Promoting Savings: Savings are possible only when the business concern earns higher profitability and maximizing wealth. Effective financial management helps in promoting and mobilizing individual and corporate savings. Nowadays financial management is also popularly known as business finance or corporate finances. The business concern or corporate sectors cannot function without the importance of the financial management.

Practice Questions

Multiple Choice Questions

1. The entire business activities are directly related with
 - A. staffing employees.
 - B. supporting government.
 - C. making profit**
 - D. Processing inputs.
2. The art and science of managing money is described as.....
 - A. finance**
 - B. accounting
 - C. purchasing
 - D. selling
3. Corporation finance deals with the financial problems of enterprises.
 - A. public
 - B. social
 - C. public-private
 - D. private**
4. The revenue and disbursement of government money such as central and state government financial matter is known as..... **finance**
 - A. public**
 - B. private
 - C. social
 - D. private - public
5. The type of management which is concerned with the duties of the financial managers in the business firm is described as..... management
 - A. financial**
 - B. production
 - C. research and development
 - D. marketing
6. The financial management which applied large numbers of mathematical and statistical tools and techniques is known as.....
 - A. Endosckedacity
 - B. Quantitative
 - C. Econometrics**
 - D. Econo-Finance
7. The measuring technique to understand the most business efficiency of a business concern is termed.....
 - A. liquidity
 - B. profitability**
 - C. Solvency

- D. Investment
8. Finance function is one of the major parts of corporate organization, which involves the permanent, and continuous process of theconcern.
- A. **business**
 - B. sport
 - C. social
 - D. government
9. The most important and first part of the business organization is financial
- A. **planning**
 - B. controlling
 - C. motivating
 - D. coordinating
10. Profit maximization objective consists of certain drawback except:
- A. It is vague
 - B. It ignores the time value of money
 - C. It ignores risk
 - D. **It is simple**

Theoretical Questions

1. a. Define the term “Finance”
b. Explain two (2) types of Finance

2. a. Explain the concept Financial Management
- b. Discuss the relationship between Financial Management and Human Resources Management
3. Explain in details the difference between profit maximization objective and wealth maximization objective
4. Describe any five importance of Financial Management to the organization
5. a. Who is a finance manager?
- b. Describe any four functions of an effective finance manager

CHAPTER 2

FINANCIAL NEED ANALYSIS

Learning Objectives:

After studying this chapter, candidates should be able to:

1. Understand the Meaning, Objectives and Components of Financial Needs Analysis.
2. Identify the Benefits and Limitations of Financial Needs Analysis
3. Highlight the Challenges and Concerns in Financial Needs Analysis and
4. Discuss the Process of Financial Needs Analysis and Assessment

2.0 Introduction

A financial needs analysis (FNA) is an overview of your current and future financial situation. It considers assets, such as wealth and income, set off against liabilities, such as debt and dependents. By creating a financial needs analysis you can get a full overview of your financial situation and how it relates to both your long-term and short-term goals. Once you have an FNA, let a financial advisor help you make the wisest decision.

2.1 Definition of Financial Need Analysis

A financial needs analysis might be the epitome of a deep, yet simple, system. In theory a financial needs analysis is fairly simple. For most people, conducting an FNA is the first step towards making an overall financial plan. In fact, many (if not most) financial and insurance advisors use this first when meeting with new clients. With an FNA you take a look at your overall financial position. The purpose of the exercise is to understand how much money you have as compared with your bills, debts and other liabilities. Once you understand how much you have coming in vs. going out, you can structure your spending and saving based on your overall financial goals.

2.3 Objectives of Financial Needs Analysis

Income and Assets: How much do you make each month? What kind of wealth do you have, including securities and other investments? In a nutshell, how much do you earn and how much do you have?

Expenses and Liabilities: What is your monthly budget? How much do you spend each month, and on what? At the same time, what are your debts? How much do you have going out the door in debt payments and other bills? Finally, who are your dependents? Are you taking care of any family members or anyone else who represents a monthly commitment?

Other Short-Term and Long-Term Objectives: What financial goals do you have? How much money will you need to achieve them, and when would you like to achieve them by?

2.4 Component of Financial Analysis

There are six components of a financial plan, which include tracking income and expenses, budgeting, saving and investing, insurance, retirement planning and tax planning.

1. **Income and Expenses:** The first component of a financial plan is tracking your income and expenses. Knowing where your money is coming from and where it's going is crucial for understanding your financial situation. As a freelancer, your payment may vary month-to-month, so it's vital to track it closely. Setting financial goals is also a crucial part of this component. Knowing what you want to achieve financially will help you make better decisions about spending and saving.
2. **Budgeting:** The next component of a financial plan is budgeting. Creating a budget is essential for staying on top of your finances. It will help you keep track of your income and expenses, set financial goals, and make sure you're saving enough money. Tips for sticking to a budget include setting a realistic budget, tracking your spending, and being aware of your spending habits.

Cash flow is an integral part of any business. It's a good idea to track your income and expenses regularly to ensure you have enough money to cover bills and other costs. This includes monitoring payments from clients, keeping up with invoices, and budgeting for taxes and additional charges like insurance or marketing expenses.

3. **Saving and Investing:** Saving and investing are also important components of a financial plan. As a freelancer, it's essential to have a strategy for saving and investing your money. This can include setting up a savings account, investing in a retirement account, or putting money into a high-yield savings account. Building an emergency fund is also important.

This fund should have enough money to cover at least three to six months of expenses in case of an emergency.

- 4. Insurance:** Insurance is another vital component of a financial plan. As a freelancer, you may have different benefits and protections than a traditional employee. Having adequate insurance coverage is essential for freelancers who want to protect their businesses from unexpected losses due to accidents, lawsuits, natural disasters, or other unforeseen events that could derail their businesses financially if they aren't covered adequately by insurance policies.

Therefore, proper insurance to protect your assets and income is essential. This can include liability insurance, health insurance, and disability insurance.

- 5. Retirement Planning:** Retirement planning is the final component of a financial plan. As a freelancer, you may not have a traditional employer-sponsored retirement plan. Retirement planning is an important part of life. Everyone wants to be sure they have enough money set aside when the time comes to hang up their working boots and call it a day. But with so many options out there, how do you know

- 6. Tax Planning:** Tax planning is essential to any financial plan since taxes will likely constitute one of your most significant business expenses throughout the year. Different forms of income may be taxed differently. As a freelancer, you can register your business as either a sole proprietorship or a limited liability company. Based on your registration status, different tax regulations will apply to you and your business.

2.5 Advantages and Benefits of Financial Need Analysis

- 1. Achieving Financial Goals:** Every individual has financial goals. Some may strive to be independent of their parents, while others may strive to complete a world tour. Without a financial plan, you will save money every month for these goals, however, they will lack accuracy. A financial plan sets in stone how much money you require to achieve a goal. When you customize a plan to include your goals and at which age the goal should be achieved, you can plan your finances accordingly. This ensures you don't spend the

money before you achieve this goal. It can help you make smart decisions about your money and reduce expenditure.

2. Preparation for Emergencies: Accidents, business loss or illnesses cannot be predicted. These situations require you to prioritize health over finances. However, without a stable financial standing, getting the required support can become difficult or even impossible. This force people to borrow money or take out an extra loan from banks.

3. Improved Financial Understanding: Opportunities come with no warning. Whether you have come across an investment opportunity or for an opportunity to start your own business, these situations require you to come up with money and fast. Having a smart financial plan means you know where your money is invested. Having a financial plan will ensure you are always aware of your current financial standing, where your money is invested or saved and how much of it is available to you. This allows you to be completely open-minded when you come across an opportunity or emergency. Furthermore, if you get any bonuses or raises, you have an acute understanding of where the money can go without requiring to consult several people.

4. Improved Standard of Living: A financial plan is not only a method to save money. If developed and executed properly, it can also help you grow your money. With accurate financial planning, you can invest your money in the right investment tools. These can generate a secondary or even tertiary income for your family. This income, however small, can be used to improve your standard of living. You can use the money to pay off any loans without worrying about compromising your daily expenses or your dreams. It can help ensure you do not have to worry about your household's requirements if you have any additional expenses.

5. Financial Security: Financial security is the goal of every person in the world. Business owners or self-employed people don't have the financial security provided by a monthly salary. Instead, their monthly income depends entirely on their business income in the month. This can make it difficult to provide financial security to your family.

2.6 Disadvantages and Limitations of Financial Needs Analysis

- The financial analysis does not contemplate cost price level changes
- The financial analysis might be ambiguous without the prior knowledge of the changes in accounting procedure followed by an enterprise
- Financial analysis is a study of reports of the enterprise
- Monetary data alone is contemplated in financial analysis while non-monetary factors are overlooked
- The financial statements are outlined on the ground of accounting concept, as such, it does not mirror the current position.

2.7 Challenges of Financial Need Analysis

a. Disconnected Systems and Processes:

According to Ventana Research, 77% of planning processes depend to some degree on having access to accurate and timely data from other parts of the organization. Therefore, integrating the various planning processes provides several benefits. However, integrating plans from different areas of the business can be challenging, especially if you are dealing with a number of disconnected spreadsheets. Cloud-based systems make it easier to move from spreadsheets and integrate financial planning and analysis with other areas of the business.

b. Lack of Business Insights

A common problem encountered by most CFOs today is the poor quality of data available and the inability to transform their business data into critical insights. Spreadsheets are shared with many different people and teams and over time, different versions exist which could differ from the actual version, making modelling difficult and unreliable. Without a single source of truth, tracking down and consolidating all the necessary data is a slow, manual and error-prone exercise.

c. Manual Tasks Take Too Much Time

Finance professionals are spending too much time performing manual tasks such as account reconciliation and financial close. Many finance departments still struggle with cutting

down their cycle time to half of what they are used to. Strategic tasks like FP&A are crucial to generate timely, meaningful insights. However, finance teams are spending most of their time sorting and organizing data instead of analysing it.

d. **Inaccurate Budgeting and Forecasting**

Cloud-based financial forecasting solutions can be very helpful in collecting and analysing data, running scenarios, analysing methodologies and potential outcomes. But, just having the right solution isn't enough for accurate financial forecasting. More often, the financial processes are unreliable and need to be fixed, due to the forecasts that are inaccurate. There is often a lack of consistency in systems and processes, hindering effective decision-making.

e. **Lack of Collaboration**

FP&A, like any other business transformation initiatives, faces obstacles if effective collaboration across departments doesn't exist. Collaboration in FP&A ensures better visibility and more accurate forecasts across your business functions. For example, information shared by the operations team aids in financial planning and cost optimization through a supportive system of shared information. Collaborative forecasting enables companies to move away from disparate and isolated forecasting activities to a unified, real-time enterprise forecasting process.

f. **Lack of Real-Time Information**

Business leaders need up-to-the-minute information and finance teams are under constant pressure to deliver actionable insights to assist decision making. The lack of accurate, real-time data limits the level of detail your financial planning system provides. You can use this data to set the right goals and build the strategy for your business. Self-service analytics capabilities enable real-time reporting, helping you to understand which revenue sources are underperforming, how to improve operational efficiencies, analyze your company's performance, and develop an achievable plan for driving growth.

2.8 Steps Involve in Financial Need Analysis and Assessments

1. Understanding the client's personal and financial circumstances.

2. Identifying and selecting goals.
3. Analyzing the client's current course of action and potential alternative course(s) of action.
4. Developing the financial planning recommendation(s).
5. Presenting the financial planning recommendation(s).
6. Implementing the financial planning recommendation(s).
7. Monitoring progress and updating.

Practice Questions

Multiple Choice Questions

1. An overview of your current and future monetary situation of an entity is referred to as.....
 - A. Financial Needs Analysis (FNA)**
 - B. Business Environment Analysis (BEA)
 - C. Cost Volume Profit Analysis (CVPA)
 - D. Financial Statement Analysis (FSA)

2. The first component of a financial plan is tracking what an entity earn and spending is described as.....
 - A. Income and Expenses**
 - B. Financial Position
 - C. Cash flow
 - D. Capital

3. The financial needs analysis that involves risk assessment is known asanalysis
 - A. purchasing
 - B. marketing
 - C. insurance**
 - D. production

4. The financial plan of a business organization activity expressed in quantitative term is
 - A. Control
 - B. Budget**
 - C. Forecasting
 - D. Modelling

5. The goal of every business entity in the world is described as.....
 - A. Financial security**
 - B. Financial reconciliation
 - C. Financial needs
 - D. Financial spending

6. The first step involves in financial need analysis and assessments
 - A. Identifying and selecting goals.**
 - B. Analysing the client's current course of action and potential alternative course(s) of action.
 - C. Understanding the client's personal and financial circumstances
 - D. Developing the financial planning recommendation(s).

7. The steps in financial need analysis and assessments that involves the adoption of financial preparation is.....

- A. Developing the financial planning recommendation(s).
 - B. Presenting the financial planning recommendation(s).
 - C. Implementing the financial planning recommendation(s).**
 - D. Monitoring progress and updating.
8. The financial analysis needs which takes care of what an entity will pay government is
.....
- A. Grant
 - B. Loan
 - C. Taxation**
 - D. Income
9. The end product of financial needs analysis is
- A. Presenting the financial planning recommendation(s).
 - B. Implementing the financial planning recommendation(s).
 - C. Monitoring progress and updating.**
 - D. Distributing Financial Planning recommendation(s)
10. The financial need analysis the involves disagreement to agreement in books of account is
known as.....
- A. reconciliation**
 - B. planning
 - C. creating
 - D. expanding

Theoretical Questions

1. a. What do you understand by the term “Financial Needs Analysis”
b. Explain the objectives of Financial Needs Analysis
2. Explain the components of Financial Needs Analysis

3. State five advantages and four disadvantages of Financial Needs Analysis
4. Discuss any five challenges of Financial Needs Analysis
5. Identify and describe the steps involved in Financial Needs Analysis

CHAPTER 3

SOURCE OF FINANCE

Learning Objectives

After studying this chapter, candidates should be able to:

1. Understand the Meaning and Importance of Financial sources to firms
2. Appropriately classify sources of finance on the basis of time period, ownership and source of generation.
3. Understand topical issues on raising of capital and issuing of securities
4. Explain the Operationalization of the Financial Market and
5. Evaluate the Efficiency of the Nigerian Financial Market System

3.1 Introduction

Finance is the lifeblood of business concern, because it is interlinked with all activities performed by the business concern. In a human body, if blood circulation is not proper, body function will stop. Similarly, if the finance is not being properly arranged, the business system will stop. Arrangement of the required finance to each department of business concern is highly a complex one and it needs careful decision. Quantum of finance may be depending upon the nature and situation of the business concern. But, the requirement of the finance may be broadly classified into two parts:

Long-term Financial Requirements or Fixed Capital Requirement

Financial requirement of the business differs from firm to firm and the nature of the requirements on the basis of terms or period of financial requirement, it may be long-term and short-term financial requirements.

Long-term financial requirement means the finance needed to acquire land and buildings for business concern, purchase of plant and machinery and other fixed expenditure. Long-term financial requirement is also called as fixed capital requirements. Fixed capital is the capital, which is used to purchase the fixed assets of the firms such as land and buildings, furniture and fittings, plant and machinery, etc. Hence, it is also called a capital expenditure.

Short-term Financial Requirements or Working Capital Requirement

Apart from the capital expenditure of the firms, the firms should need certain expenditure like

procurement of raw materials, payment of wages, day-to-day expenditures, etc. This kind of expenditure is to meet with the help of short-term financial requirements which will meet the operational expenditure of the firms. Short-term financial requirements are popularly known as working capital.

3.2 Meaning of Sources of Finance

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

3.3 Classifications of sources of finance

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

1. **Based on time period:** Sources of finance may be classified under various categories based on the period:
 - a. **Long-term sources:** Finance may be mobilized by long-term or short-term. When the finance mobilized with large amount and the repayable over the period will be more than five years, it may be considered as long-term sources. Share capital, issue of debentures, long-term loans from financial institutions and commercial banks come under this kind of source of finance. Long-term source of finance needs to meet the capital expenditure of the firms such as purchase of fixed assets, land and buildings, etc. Long-term sources of finance include:
 - Equity Shares
 - Preference Shares
 - Debentures
 - Long-term Loans
 - Fixed Deposits
 - b. **Short-term sources:** Apart from the long-term source of finance, firms can generate finance with the help of short-term sources like loans and advances from commercial banks,

money lenders, etc. Short-term source of finance needs to meet the operational expenditure of the business concern. Short-term source of finance includes:

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

2. **Based on Ownership:** Sources of finance may be classified under various categories based on the period. An ownership source of finance includes:

- Shares capital earnings
- Retained earnings
- Surplus and Profits

Borrowed capital include

- Debentures
- Bonds
- Public deposits
- Loans from Bank and Financial Institutions.

3. **Based on Sources of Generation:** Sources of finance may be classified into various categories based on the period. Internal source of finance includes:

- Retained earnings
- Depreciation funds
- Surplus

External sources of finance may include

- Share capital
- Debentures

- Public deposits
- Loans from Banks and Financial institutions.

4. Based in Mode of Finance Security finance may include:

- Shares capital
- Debentures

Retained earnings may include

- Retained earnings
- Depreciation funds

Loan finance may include

- Long-term loans from Financial Institutions
- Short-term loans from Commercial banks.

The above classifications are based on the nature and how the finance is mobilized from various sources. But the above sources of finance can be divided into three major classifications:

- Security Finance
- Internal Finance
- Loans Finance

3.4 Security Finance

If the finance is mobilized through issue of securities such as shares and debenture, it is called as security finance. It is also called as corporate securities. This type of finance plays a major role in the field of deciding the capital structure of the company.

Characters of Security Finance

Security finance consists of the following important characters:

1. Long-term sources of finance.
2. It is also called as corporate securities.
3. Security finance includes both shares and debentures.
4. It plays a major role in deciding the capital structure of the company.

5. Repayment of finance is very limited.
6. It is a major part of the company's total capitalization.

3.5 Types of Security Finance

Security finance may be divided into two major types:

1. Ownership securities or capital stock.
2. Creditorship securities or debt capital.

Ownership Securities

The ownership securities also called as capital stock, is commonly referred to as shares. Shares are the most universal method of raising finance for the business concern. Ownership capital consists of the following types of securities.

- a. Equity Shares
- b. Preference Shares
- c. No par stocks
- d. Deferred Shares

a. Equity Shares

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

Features of Equity Shares

Equity shares consist of the following important features:

1. **Maturity of the shares:** Equity shares have permanent nature of capital, which has no maturity period. It cannot be redeemed during the lifetime of the company.
2. **Residual claim on income:** Equity shareholders have the right to get income left after paying fixed rate of dividend to preference shareholder. The earnings or the

income available to the shareholders is equal to the profit after tax minus preference dividend.

3. **Residual claims on assets:** If the company wound up, the ordinary or equity shareholders have the right to get the claims on assets. These rights are only available to the equity shareholders
4. **Right to control:** Equity shareholders are the real owners of the company. Hence, they have power to control the management of the company and they have power to take any decision regarding the business operation.
5. **Voting rights:** Equity shareholders have voting rights in the meeting of the company with the help of voting right power; they can change or remove any decision of the business concern. Equity shareholders only have voting rights in the company meeting and also, they can nominate proxy to participate and vote in the meeting instead of the shareholder.
6. **Pre-emptive right:** Equity shareholder pre-emptive rights. The pre-emptive right is the legal right of the existing shareholders. It is attested by the company in the first opportunity to purchase additional equity shares in proportion to their current holding capacity.
7. **Limited liability:** Equity shareholders are having only limited liability to the value of shares they have purchased. If the shareholders are having fully paid up shares, they have no liability. For example: If the shareholder purchased 100 shares with the face value of N10 each. He paid only N900. His liability is only N100.

Advantages of Equity Shares

The most popular and widely utilized shares to raise capital for the firm are equity shares. The benefits listed below are included in it.

1. **Permanent sources of finance:** Equity share capital is belonging to long-term permanent nature of sources of finance, hence, it can be used for long-term or fixed capital requirement of the business concern.
2. **Voting rights:** Equity shareholders are the real owners of the company who have voting rights. This type of advantage is available only to the equity shareholders
3. **No fixed dividend:** Equity shares do not create any obligation to pay a fixed rate of dividend. If the company earns profit, equity shareholders are eligible for

profit, they are eligible to get dividend otherwise, and they cannot claim any dividend from the company.

4. **Less cost of capital:** Cost of capital is the major factor, which affects the value of the company. If the company wants to increase the value of the company, they have to use more share capital because, it consists of less cost of capital (K_e) while compared to other sources of finance.
5. **Retained earnings:** When the company have more share capital, it will be suitable for retained earnings which is the less cost sources of finance while compared to other sources of finance.

Disadvantages of Equity Shares

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

b. Preference Shares

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

Preference shares may be classified into the following major types:

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

right to get the comparative dividend for the previous years if the company earned profit.

2. **Non-cumulative preference shares:** Non-cumulative preference shares have no right to enjoy the above benefits. They are eligible to get only dividend if the company earns profit during the accounting period, if not, they cannot claim any dividend.
3. **Redeemable preference shares:** When, the preference shares have a fixed maturity period it becomes redeemable preference shares. It can be redeemable during the lifetime of the company. The Company Act has provided certain restrictions on the return of the redeemable preference shares.
4. **Non - redeemable Preference shares:** These shares are not redeemable until the corporation files for liquidation. These types of preference shares have no set maturity date.
5. **Participating preference shares:** Following the distribution of equity shareholders, participating preference shareholders are entitled to a portion of the additional earnings.
6. **Non-participating preference shares:** Shareholders of non-participating preference have no access to any further earnings that are made after being distributed to equity holders. This category of stockholders will get a fixed rate of dividend.
7. **Convertible preference shares:** Following a certain time period, convertible preference shareholders have the option to convert their holdings into equity shares. The right of conversion must be permitted under the articles of organization.
8. **Non-convertible preference shares:** These shares, cannot be converted into equity shares from preference shares.

Features of Preference Shares

The following are the important features of the preference shares:

1. **Maturity period:** Normally preference shares have no fixed maturity period except in the case of redeemable preference shares. Preference shares can be redeemable only at the time of the company liquidation.
2. **Residual claims on income:** Preferential owners have a residual claim on income. Fixed rate of dividend is payable to the preference shareholders
3. **Residual claims on assets:** The first preference is given to the preference shareholders at the time of winding up, if any extra resources are available that should be distributed

to equity shareholder.

4. **Control of Management:** Preference shareholders do not have any voting rights. Hence, they cannot have control over the management of the company.

Advantages of Preference Shares

Preference shares have the following important advantages.

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

Disadvantages of Preference Shares

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

expense while calculating tax. But interest is a deductible expense. Hence, it has disadvantage on the tax deduction point of view.

c. Deferred Shares

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

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

d. No Par Shares

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

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

Creditorship Securities

Creditorship Securities also known as debt finance means the finance is mobilized from the creditor. Debentures and Bonds are the two major parts of the Creditorship Securities.

3.6 Debentures

A Debenture is a document issued by the company. It is a certificate issued by the company under its seal acknowledging a debt. According to the Companies Act 1956, “debenture includes debenture stock, bonds and any other securities of a company whether constituting a charge of the assets of the company or not.”

Types of Debentures

Debentures may be divided into the following major types:

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

Features of Debentures

1. **Maturity period:** Debentures consist of long-term fixed maturity period. Normally, debentures consist of 10–20 years maturity period and are repayable with the principle investment at the end of the maturity period.
2. **Residual claims in income:** Debenture holders are eligible to get fixed rate of interest at every end of the accounting period. Debenture holders have priority of claim in income of the company over equity and preference shareholders

3. **Residual claims on asset:** Debenture holders have priority of claims on assets of the company over equity and preference shareholders. The debenture holders may have either specific charge on the assets or floating charge of the assets of the company. Specific charge of Debenture holders are treated as secured creditors and floating charge of debenture holders are treated as unsecured creditors.
4. **No voting rights:** Debenture holders are considered as creditors of the company. Hence, they have no voting rights. Debenture holders cannot have the control over the performance of the business concern.
5. **Fixed rate of interest:** Debentures yield fixed rate of interest till the maturity period. Hence the business will not affect the yield of the debenture.

Advantages of Debenture

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

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

Disadvantages of Debenture

Debenture finance consists of the following major disadvantages:

1. **Fixed rate of interest:** Debenture consists of fixed rate of interest payable to securities. Even though the company is unable to earn profit, they have to pay the fixed rate of interest to debenture holders, hence, it is not suitable to those company earnings which fluctuate considerably
2. **No voting privileges:** Holders of Debentures have no voting privileges. As a result, they are unable to influence how the firm is run.
3. **Creditors of the company:** Debenture holders are merely creditors and not the owners of the company. They do not have any claim in the surplus or profits of the company.
4. **High risk:** Every additional issue of debentures becomes riskier and costlier on account of higher expectation of debenture holders. This enhanced financial risk increases the cost of equity capital and the cost of raising finance through debentures which is also high because of high stamp duty.
5. **Restrictions of further issues:** The company cannot raise further finance through debentures as the debentures are under the part of security of the assets already mortgaged to debenture holders.

3.7 Source of Finance Generation

a. Internal Finance

A company can mobilize finance through external and internal sources. A new company may not raise internal sources of finance and they can raise finance through external sources such as shares, debentures and loans but an existing company can raise both internal and external sources of finance for their financial requirements. Internal finance is also one of the important sources of finance and it consists of cost of capital while compared to other sources of finance.

Internal source of finance may be broadly classified into two categories:

- A. Depreciation funds
- B. Retained earnings

Depreciation Funds

Depreciation funds are the major part of internal sources of finance, which is used to meet the working capital requirements of the business concern. Depreciation means decrease in the value

of asset due to wear and tear, lapse of time, obsolescence, exhaustion and accident. Generally, depreciation is charged against fixed assets of the company at fixed rate for every year. The purpose of depreciation is replacement of the assets after the expired period. It is one kind of provision of fund, which is needed to reduce the tax burden and overall profitability of the company.

Retained Earnings

Retained earnings are another method of internal sources of finance. Actually, it is not a method of raising finance, but it is called as accumulation of profits by a company for its expansion and diversification activities. Retained earnings are called under different names; self-finance, inter finance, and plugging back of profits. According to the Companies Act 1956 certain percentage, as prescribed by the central government (not exceeding 10%) of the net profits after tax of a financial year have to be compulsorily transferred to reserve by a company before declaring dividends for the year. Under the retained earnings sources of finance, a part of the total profits is transferred to various reserves such as general reserve, replacement fund, reserve for repairs and renewals, reserve funds and secret reserves, etc.

Advantages of Retained Earnings

Retained earnings consist of the following important advantages:

1. **Useful for expansion and diversification:** Retained earnings are most useful to expansion and diversification of the business activities.
2. **Economical sources of finance:** Retained earnings are one of the least costly sources of finance since it does not involve any floatation cost as in the case of raising of funds by issuing different types of securities.
3. **No fixed obligation:** If the companies use equity finance they have to pay dividend and if the companies use debt finance, they have to pay interest. But if the company uses retained earnings as sources of finance, they need not pay any fixed obligation regarding the payment of dividend or interest.
4. **Flexible sources:** Retained earnings allow the financial structure to remain completely flexible. The company need not raise loans for further requirements, if it has retained earnings.
5. **Increase the share value:** When the company uses the retained earnings as the sources

of finance for their financial requirements, the cost of capital is very cheaper than the other sources of finance; Hence the value of the share will increase.

6. **Avoid excessive tax:** Retained earnings provide opportunities for evasion of excessive tax in a company when it has small number of shareholders
7. **Increase earning capacity:** Retained earnings consist of least cost of capital and also it is most suitable to those companies which go for diversification and expansion.

Disadvantages of Retained Earnings

Retained earnings also have certain disadvantages:

1. **Misuses:** The management by manipulating the value of the shares in the stock market can misuse the retained earnings.
2. **Leads to monopolies:** Excessive use of retained earnings leads to monopolistic attitude of the company.
3. **Over capitalization:** Retained earnings lead to over capitalization, because if the company uses more and more retained earnings, it leads to insufficient source of finance.
4. **Tax evasion:** Retained earnings lead to tax evasion. Since, the company reduces tax burden through the retained earnings.
5. **Dissatisfaction:** If the company uses retained earnings as sources of finance, the shareholder can't get more dividends. So, the shareholder does not like to use the retained earnings as source of finance in all situations.

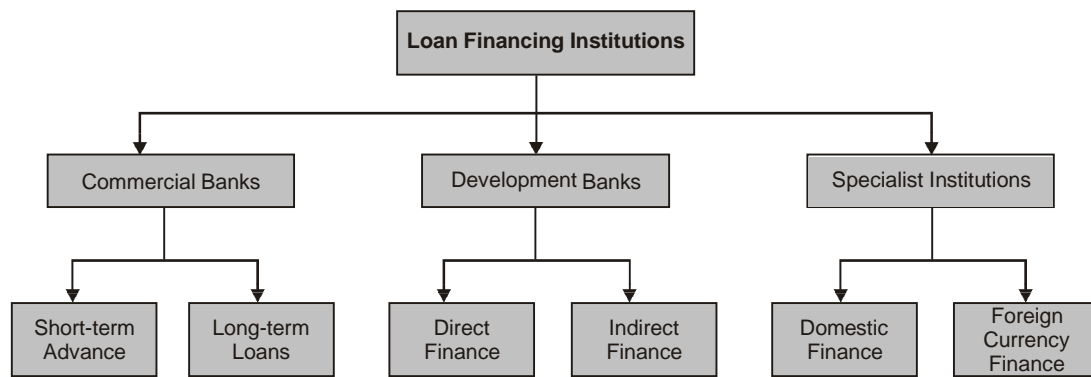
b. External Finance

Loan Financing

Loan financing is the important mode of finance raised by the company. Loan finance may be divided into two types:

- (a) Long-Term Sources
- (b) Short-Term Sources

Loan finance can be raised through the following important institutions.



Financial Institution

With the effect of the industrial revaluation, the government established nationwide and state wise financial industries to provide long-term financial assistance to industrial concerns in the country. Financial institutions play a key role in the field of industrial development and they are meeting the financial requirements of the business concern. FBN, ZBN, UBA, Union Banks are the famous financial institutions in the country.

Commercial Banks

Commercial Banks normally provide short-term finance which is repayable within a year. The major finance of commercial banks is as follows:

Short-term advance: Commercial banks provide advance to their customers with or without securities. It is one of the most common and widely used short-term sources of finance, which are needed to meet the working capital requirement of the company. It is a cheap source of finance, which is in the form of pledge, mortgage, hypothecation and bills discounted and rediscounted.

Short-term Loans

Commercial banks also provide loans to the business concern to meet the short-term financial requirements. When a bank makes an advance in lump sum against some security it is termed as loan. Loan may be in the following form:

- (a) **Cash credit:** A cash credit is an arrangement by which a bank allows his customer to borrow money up to certain limit against the security of the commodity.
- (b) **Overdraft:** Overdraft is an arrangement with a bank by which a current account holder is allowed to withdraw more than the balance to his credit up to a certain limit without

any securities.

Development Banks

Development banks were established mainly for the purpose of promotion and development the industrial sector in the country. Presently, large number of development banks are functioning with multi-dimensional activities. Development banks are also called financial institutions or statutory financial institutions or statutory non-banking institutions. Development banks provide two important types of finance:

- (a) Direct Finance
- (b) Indirect Finance/Refinance

Presently the commercial banks are providing all kinds of financial services including development-banking services. Also, development banks and specialized financial institutions are providing all kinds of financial services including commercial banking services. Diversified and global financial services are unavoidable in the present-day economics. Hence, we can classify the financial institutions only by the structure and set up and not by the services provided by them.

Practice Questions

Multiple Choice Questions

1. The lifeblood of business organization is

A. Finance

B. Borrowings

C. Management

D. Government

2. The ways for mobilizing various terms of finance to the industrial concern is described as.....

A. expensing of finance

B. sources of finance

C. expansion of finance

D. disbursement of finance

3. The sources of finance whose repayment period is more than five years is described as.....

A. Short term

B. Medium term

C. Long term

D. Payment term

4. Sources of finance may be classified under various categories based on
EXCEPT

A. ownership

B. term

C. generation

D. leadership

5. Which of the following is not a short-term source of finance?

A. Bank Credit

B. Customer Advances

C. Debenture

D. Factoring

6. An ownership source of finance includes all the following EXCEPT.....

A. Shares capital

B. Retained earnings

C. Surplus and Profits

D. Bank Loan

7. Security finance consists of the following important features EXCEPT.....:

A. Long-term sources of finance.

B. It is also called as corporate securities.

C. Security finance includes both shares and debentures.

D. Repayment of finance is very limited.

8. Equity in financial management is also known as

A. Ordinary shares.

B. Preference shares

C. Debenture

D. Bank Loan

9. The demerit of Equity Shares is

A. Permanent sources of finance

B. Non-Voting rights

C. No fixed dividend

D. Less cost of capital

10. Retained earnings also have certain disadvantages EXCEPT:

A. Misuses

B. Leads to monopolies

C. Over capitalization

D. Tax planning

Theoretical Questions

1. Differentiate between Long Term Financial Requirement and Short-Term Financial Requirement
2. Describe the term Sources of Finance
3. Differentiate between Ordinary and Preference Shares
4.
 - a. Define the term Debentures
 - b. Explain any three types of Debenture known to you
5.
 - a. Describe Preference Shares
 - b. State four advantages and four disadvantages of Preference Shares

CHAPTER 4

FINANCIAL RATIO AND ANALYSIS

4.0 Learning Objectives

After studying this chapter, candidates should be able to:

1. Understand the Meaning of Financial Statements and Identify the Components of an IFRS Compliant Financial Statements
2. Correctly describe the Concept of Financial Statement Analysis and its Types.
3. Apply the various techniques of Financial Statement Analysis for effective decision making by the different stakeholders and
4. Accept Ratio Analysis as a common tool for Financial Statement Analysis to be used as a Compliment of other techniques.

4.1 Introduction

A financial statement is an official document of the firm, which explores the entire financial information of the firm. The main aim of the financial statement is to provide information and understand the financial aspects of the firm. Hence, preparation of the financial statement is important as much as the financial decisions.

4.2 Meaning and Definition

Financial Statement can be defined as a quantitative report which is prepared by the management that shows the state of affairs and financial position of an enterprise over a period of time. It is a statement that shows the performance, position, prospect and operation of an enterprise over a period of time usually twelve calendar months and prepared by the management. It is also known as management report or audited report as the case may be.

Financial statements (or financial reports) are formal records of the financial activities and position of a business, person, or other entity. Relevant financial information is presented in a structured manner and in a form, which is easy to understand. According to Hamptors John, the financial statement is an organized collection of data according to logical and consistent accounting procedures. Its purpose is to convey an understanding of financial aspects of a business firm. It may show a position at a moment of time as in the case of a balance-sheet or may reveal a service of activities over a given period of time, as in the case of an income statement. Financial statements are the summary of the accounting process, which, provides useful information to both

internal and external parties. John N. Nyer (2018) also defines it as “Financial statements provide a summary of the accounting of a business enterprise, the balance-sheet reflecting the assets, liabilities and capital as on a certain date and the income statement showing the results of operations during a certain period”.

4.3 Components of Financial Statements

The components of financial statements generally consist of the following vital statements:

- (i) The income statement or profit or loss account.
- (ii) Balance sheet or the statement of financial position.
- (iii) Statement of changes in owner’s equity.
- (iv) Notes to the Accounts

Apart from that, the business concern also prepares some of the other parts of statements, which are very useful to the internal purpose such as:

- (i) Income statement is also called as profit and loss account, which reflects the operational position of the firm during a particular period. Normally it consists of one accounting year. It determines the entire operational performance of the concern like total revenue generated and expenses incurred for earning that revenue. Income statement helps to ascertain the gross profit and net profit of the concern. Gross profit is determined by the preparation of trading or manufacturing account and net profit is determined by the preparation of profit or loss account.
- (ii) Statement of Financial Position: Position statement is also called as balance sheet, which reflects the financial position of the firm at the end of the financial year. Position statement helps to ascertain and understand the total assets, liabilities and capital of the firm. One can understand the strength and weakness of the concern with the help of the position statement.
- (iii) Statement of Changes in Owner’s Equity: It is also called as statement of retained earnings. This statement provides information about the changes or position of owner’s equity in the company. However, the retained earnings are employed in the business concern. Nowadays, preparation of this statement is not popular and nobody is going to prepare the separate statement of changes in owner’s equity.
- (iv) Notes to the accounts: shows only various break downs to the figures in the income statement, statement of financial position, changes in equity and cash flow statement.

Statement of changes in financial position involves two important areas such as fund flow statement which involves the changes in working capital position and cash flow statement which involves the changes in cash position.

4.4 Definition and Meaning of Financial Statement Analysis

This is the critical examination of the financial report of an enterprise which users used in making business decisions. In account or finance it is also called RATIO ANALYSIS. It can also be defined as the in-depth examination of the financial statement of an enterprise which measures the profitability, position, prospect and operation over a period of time which is used to make effective decision

4.5 Types of Financial Statement Analysis

Analysis of Financial Statement is also necessary to understand the financial positions during a particular period. According to Myres (2022), “Financial statement analysis is largely a study of the relationship among the various financial factors in a business as disclosed by a single set of statements and a study of the trend of these factors as shown in a series of statements.”

Analysis of financial statement may be broadly classified into two important types on the basis of material used and methods of operations:

1. Based on Material Used

Based on the material used, financial statement analysis may be classified into two major types such as External analysis and internal analysis.

A. External Analysis

Outsiders of the business concern normally do external analysis but they are indirectly involved in the business concern such as investors, creditors, government organizations and other credit agencies. External analysis is very much useful to understand the financial and operational position of the business concern. External analysis mainly depends on the published financial statement of the concern. This analysis provides only limited information about the business concern.

B. Internal Analysis

The company itself does disclose some of the valuable information to the business concern in this type of analysis. This analysis is used to understand the operational performances of each and every department and unit of the business concern. Internal analysis helps to take decisions regarding achieving the goals of the business concern.

2. Based on Method of Operation

Based on the methods of operation, financial statement analysis may be classified into two major types such as horizontal analysis and vertical analysis.

A. Horizontal Analysis

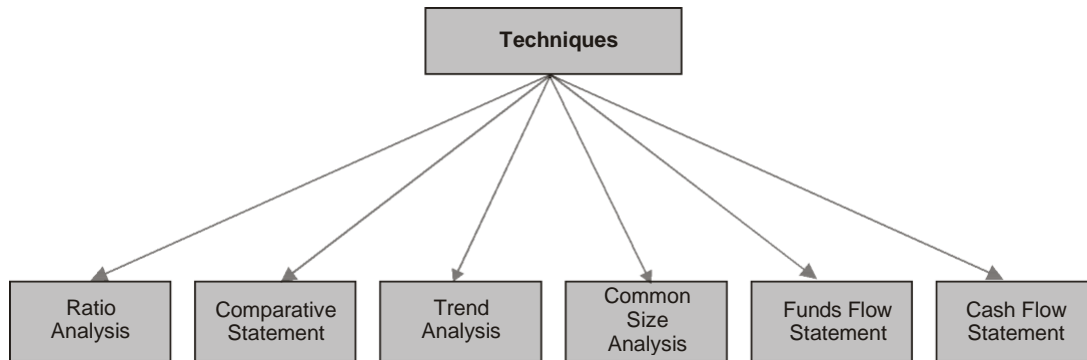
Under the horizontal analysis, financial statements are compared with several years and based on that, a firm may take decisions. Normally, the current year's figures are compared with the base year (base year is considered as 100) and how the financial information are changed from one year to another. This analysis is also called dynamic analysis.

B. Vertical Analysis

Under the vertical analysis, financial statements measure the quantities relationship of the various items in the financial statement on a particular period. It is also called static analysis, because, this analysis helps to determine the relationship with various items appeared in the financial statement. For example, a sale is assumed as 100 and other items are converted into sales figures.

4.6 Techniques of Financial Statement Analysis

Financial statement analysis is interpreted mainly to determine the financial and operational performance of the business concern. A number of methods are used to analyse the financial statements. The following are the common techniques, widely used by the businesses.



1. Comparative Statement Analysis
 - A. Comparative Income Statement Analysis
 - B. Comparative Position Statement Analysis
 - C. Trend Analysis
2. Common Size Analysis
3. Fund Flow Statement
4. Cash Flow Statement
5. Ratio Analysis

Comparative Statement Analysis

Comparative statement analysis is an analysis of financial statement at different period of time. This statement helps to understand the comparative position of financial and operational performance at different period of time. Comparative financial statements again is classified into two major parts such as comparative balance sheet analysis and comparative profit and loss account analysis.

Comparative Balance Sheet Analysis

Comparative balance sheet analysis concentrates only the balance sheet of the concern at different period of time. Under this analysis the balance sheets are compared with previous year's figures

or one-year balance sheet figures are compared with other years. Comparative balance sheet analysis may be horizontal or vertical basis. This type of analysis helps to understand the real financial position of the concern as well as how the assets, liabilities and capitals are placed during a particular period.

Comparative Profit and Loss Account Analysis

Another comparative financial statement analysis is comparative profit and loss account analysis. Under this analysis, only profit and loss account is taken to compare with previous year's figure or compare within the statement. This analysis helps to understand the operational performance of the business concern in a given period. It may be analysed on horizontal basis or vertical basis.

Trend Analysis

The financial statements may be analysed by computing trends of series of information. It may be upward or downward directions which involve the percentage relationship of each and every item of the statement with the common value of 100%. Trend analysis helps to understand the trend relationship with various items, which appear in the financial statements. These percentages may also be taken as index number showing relative changes in the financial information resulting with the various period of time. In this analysis, only major items are considered for calculating the trend percentage.

Common Size Analysis

Another important financial statement analysis technique is common size analysis in which figures reported are converted into percentage to some common base. In the balance sheet the total assets figures is assumed to be 100 and all figures are expressed as a percentage of this total. It is one of the simplest methods of financial statement analysis, which reflects the relationship of each and every item with the base value of 100%.

Funds Flow Statement

Funds flow statement is one of the important tools, which is used in many ways. It helps to understand the changes in the financial position of a business enterprise between the beginning and ending financial statement dates. It is also called as statement of sources and uses of funds.

According to Institute of Cost and Works Accounts of India, funds flow statement is defined as “a statement prospective or retrospective, setting out the sources and application of the funds of an enterprise. The purpose of the statement is to indicate clearly the requirement of funds and how they are proposed to be raised and the efficient utilization and application of the same”.

Cash Flow Statement

Cash flow statement is a statement which shows the sources of cash inflow and uses of cash out-flow of the business concern during a particular period of time. It is the statement, which involves only short-term financial position of the business concern. Cash flow statement provides a summary of operating, investment and financing cash flows and reconciles them with changes in its cash and cash equivalents such as marketable securities. Institute of Chartered Accountants of India issued the Accounting Standard (AS-3) related to the preparation of cash flow statement in 1998.

Difference Between Funds Flow and Cash Flow Statement

Funds Flow Statement	Cash Flow Statement
1. Funds flow statement is the report on the movement of funds or working capital	1. Cash flow statement is the report showing sources and uses of cash.
2. Funds flow statement explains how working capital is raised and used during the particular	2. Cash flow statement explains the inflow and out flow of cash during the particular period.
3. The main objective of fund flow statement is to show how the resources have been balanced mobilized and used.	3. The main objective of the cash flow statement is to show the causes of changes in cash between two balance sheet dates.
4. Funds flow statement indicates the results of current financial management.	4. Cash flow statement indicates the factors contributing to the reduction of cash balance in spite of increase in profit and vice-versa.
5. In a funds flow statement increase or decrease in working capital is recorded.	5. In a cash flow statement only, cash receipt and payments are recorded.
6. In funds flow statement there is no opening and closing balances.	6. Cash flow statement starts with opening

	cashbalance and ends with closing cash balance.
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Financial Ratio Analysis

Financial ratio analysis is critical examination of financial statement by measuring one variable against another variable. Ratio analysis is a commonly used as a tool for Financial Statement Analysis. Ratio is a mathematical relationship between one number to another number. Ratio is used as an index for evaluating the financial performance of the business concern. An accounting ratio show the mathematical relationship between two figures, which have meaningful relation with each other. Ratio can be classified into various types.

4.7 Classification of Financial statement Analysis

Financial statement analysis is classified as follows

1. Profitability classification
2. Liquidity classification
3. Management efficiency classification
4. Solvency classification
5. Investment classification

4.7.1 Profitability Classification: These are ratios that measure the performance of an enterprise over a period of time. It includes:

- i. $\text{Margin} = \frac{\text{Profit}}{\text{Turnover}} \times 100\%$
- ii. $\text{Mark-up} = \frac{\text{Profit}}{\text{Cost of sales}} \times 100\%$
- iii. $\text{Returns on Capital Employed (ROCE)} = \frac{\text{Profit before interest and tax}}{\text{Shareholders' funds} + \text{Preference share}} \times 100\%$

- iv. Returns on Share Capital

$$= \frac{\text{Profit after tax}}{\text{Ordinary share capital + reserve}} \times 100\%$$
- v. Returns on Assets

$$= \frac{\text{Profit before interest and tax}}{\text{Total Assets}} \times 100\%$$
- vi. Assets Turnover Ratio

$$= \frac{\text{Turnover}}{\text{Share capital + reserve + long-term debt}} \times 100\%$$
- vii. Expenses Ratio = $\frac{\text{Total expenses}}{\text{Total turnover}} \times 100\%$
 Or $\frac{\text{Individual expenses}}{\text{Turnover}} \times 100\%$

Classification of Expenses

1. Selling and distribution expenses
2. Admin expenses
3. Finance expenses

4.7.2 Liquidity Classification: These are ratios that measures the liquidity position of an enterprise i.e. how an organization is able to pay its short-term obligation. They include the following:

- i. Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}} = \text{xx}:1$
- ii. Quick Ratio/Acid Test Ratio = $\frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}} = \text{xx}:1$
- iii. Inventory Turnover Ratio = $\frac{\text{Cost of Sales}}{\text{Average Inventories}} = \text{xx times}$
- iv. Trade receivable turnover = $\frac{\text{Credit sales}}{\text{Trade Receivables}} = \text{xx times}$
- v. Trade Payable turnover = $\frac{\text{Credit Purchase}}{\text{Trade payables}} = \text{xx times}$

4.7.3 Management Efficiency Classification/Ratio: These are ratios that measure how the management of an organization is able to meet the stakeholders' interest in relation to time. The ratios include:

- i. Trade Receivable Collection Period = $\frac{\text{Trade receivable}}{\text{Credit Sales}} \times 365 \text{ days}$
- ii. Trade Payable Payment Period = $\frac{\text{Trade payable}}{\text{Credit Purchase}} \times 365 \text{ days}$
- iii. Inventory Turnover Period = $\frac{\text{Total Inventories}}{\text{Cost of sales}} \times 365 \text{ days}$
- iv. Inventory Turnover Ratio = $\frac{\text{Cost of sales}}{\text{Average inventories}} = \text{xx times}$

4.8.4 Solvency Classification/Long-term Debt Ratios: These are ratios that measure how an organization is able to pay its long-term obligations or commitment to capital providers. They include:

- i. Gearing Ratio = $\frac{\text{Long-term debts}}{\text{Share capital + reserve}} \times 100\%$
Or $\frac{\text{Long-term debts}}{\text{Equity + long-term debts}} \times 100\%$
- ii. Interest Cover Ratio = $\frac{\text{Profit before interest and tax}}{\text{Total interest + charge}} = \text{xx times}$
- iii. Proprietors Share Ratio = $\frac{\text{Equity}}{\text{Total Liabilities}} \times 100\%$

4.8.5 Investment Ratios: These are ratios that measure how organization is able to attract investors. There are two types of investors

(a) Existing investors (b) potential investors

- i. Dividend Per share = $\frac{\text{Total dividend}}{\text{No of ordinary shares ranking for dividend}}$
Where total dividend = interim + final dividend
- ii. Earnings Per share (EPS) = $\frac{\text{Profit after tax}}{\text{No of shares ranking for dividend}}$
- iii. Market Value Per share = $\frac{\text{Total market value}}{\text{No of ordinary shares ranking for dividend}}$
- iv. Price Earnings Ratio = $\frac{\text{Market price per share}}{\text{Earnings per share}}$
- v. Dividend Yield = $\frac{\text{Dividend per share}}{\text{Market price per share}} \times 100\%$
- vi. Dividend Cover Ratio = $\frac{\text{Earnings per share}}{\text{Dividend per share}} = \text{xx times}$
- vii. Earning Yield = $\frac{\text{Earnings per share}}{\text{Market price per share}} \times 100\%$

4.8 Types of Financial Statement Analysis

There are four types of financial statement analysis:

1. Vertical Analysis
2. Horizontal Analysis
3. Inter-company Analysis
4. Trend Analysis

4.8.1 Vertical Analysis: This is the critical examination and interpretation by measuring all variable in the income statement with total asset and expressed in percentage. It is calculated

measuring all variables in the financial position with total asset expressed in percentage and it is calculated as

$$\text{Income Statement Analysis} = \frac{\text{Any variable}}{\text{Turnover}} \times 100\%$$

$$\text{Financial Position Analysis} = \frac{\text{Any variable}}{\text{Total Assets}} \times 100\%$$

4.8.2. Horizontal Analysis: This is an in-depth examination or critical comparison of two comparatives of an organization by determining the strength and weakness of all variables in the financial statement. It is calculated as:

$$\frac{\text{Current year variable} - \text{previous year variables}}{\text{Previous year variable}} \times 100\%$$

4.8.3. Inter-Company Analysis: This is the critical examination of all variable in the financial statement for two or more companies in the same industry in order to determine their strength of weakness.

4.8.4. Trend Analysis: This is the critical examination of key variables of an enterprise for at least 5 accounting year by measuring the strength and weakness

Illustration 1

OBJ PLC has presented you with the following financial information for two comparative years 20X2 and 20X3.

The Statement of Financial Position stood as:

Non-Current Assets:

	20X3	20X2
	N' Million	N' Million
Property, Plant and Equipment	260	200
Investment	<u>40</u>	<u>30</u>
	300	230
Goodwill	60	70

Current Assets:

Inventory	120	100
Trade Receivables	70	50
Cash/Bank	20	20
Prepayments	<u>20</u>	<u>25</u>
	<u>595</u>	<u>495</u>

Liabilities falling due(<1yr)

Trade Payables	80	15
Accruals	20	5
Tax payables	<u>29</u>	<u>5</u>

	129	25
Loans(24% interest)	100	120

Equity and Capital:

Ordinary Shares (N5 each)	250	250
Reserves	100	100
Retained Earnings	<u>16</u>	<u>--</u>
	<u>595</u>	<u>495</u>

	20X3	20X2
The Income Statements showed:	‘N Million	‘N Million
Turnover	600	500
Cost of Sales	<u>(300)</u>	<u>(260)</u>
Gross Profit	300	240
Admins Expenses	(100)	(90)
Selling and Distr. Expenses	<u>(50)</u>	<u>(60)</u>
Profit before Interest &Tax	150	90
Finance Expense (Interest)	<u>(24)</u>	<u>(28.8)</u>
Profit Before Tax	126	61.20
Tax Expenses (Provision)	<u>(60)</u>	<u>(21.20)</u>
Profit After Tax	66	40
Proposed Dividend	<u>(50)</u>	<u>(40)</u>
Retained Earnings	16	Nil

The Estimated Market Value per share is N2.00 and N1.80 for year 20X3 and 20X2 respectively.

1. You are required to prepare at least 3 types ratio under the following classification:

- Profitability
- Liquidity
- Management Efficiency
- Solvency
- And Investment

2. You are also required to prepare the company’s comparative analysis for

- Vertical Analysis
- Horizontal Analysis

Suggested Solutions

a. Profitability Ratios

i. Margin = $\frac{\text{Profit}}{\text{Turnover}} \times 100\% = \frac{300\text{m}}{600\text{m}} \times 100\%$

$$\frac{300\text{m}}{600\text{m}} = 50\%$$

ii. Mark=up = $\frac{\text{Profit}}{\text{Turnover}} \times 100\% = \frac{300\text{m}}{600\text{m}} \times 100\%$

- Cost of sales 300m = 100
- iii. Returns on Capital Employed
 = $\frac{\text{Profit before tax}}{\text{Shareholders fund + Preference share capital}} \times 100\%$
 = $\frac{\text{N126m}}{\text{N266m}} \times 100\% = 34.43\%$
- iv. Returns on Share Capital = $\frac{\text{PAT}}{\text{OSI + Reserve}} \times 100\%$
 = $\frac{\text{N66m}}{\text{N336m}} \times 100\% = 18.03\%$
- v. Return on Assets = $\frac{\text{PBIT}}{\text{Total Assets}} \times 100\%$
 = $\frac{\text{N150m}}{\text{N595m}} \times 100\% = 25.21\%$
- vi. Asset Turnover = $\frac{\text{Turnover}}{\text{SC + LTB}} \times 100\%$
 = $\frac{\text{N600m}}{(\text{N366m} + 1000)} \times 100\%$
 = $\frac{\text{N600m}}{\text{N466m}} \times 100\%$
 = 128.76%
- vii. Expenses Ratio = $\frac{\text{Total expenses}}{\text{Turnover}} \times 100\% = \frac{174\text{m}}{600\text{m}} \times 100\%$
- b. Liquidity Ratio
- i. Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}} \times 100\%$
- ii. Quick Ratio = $\frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}} = \frac{230\text{m} - 120\text{m}}{129\text{m}} = \frac{110\text{m}}{129\text{m}} = 0.85:1$
- iii. Inventory Turnover Ratio = $\frac{\text{Cost of sales}}{\text{Average inventory}} = \frac{300\text{m}}{60\text{m}} = 5\text{times}$
- iv. Trade Receivable Turnover = $\frac{\text{Credit sales}}{\text{Trade receivable}} = \frac{\text{N600m}}{70\text{m}} = 8.57\text{times}$
- v. Trade Payable Turnover = $\frac{\text{Credit Purchase}}{\text{Trade payable}} = \frac{\text{N300m}}{\text{N80m}} = 3.75\text{times}$
- c. Management Efficiency Ratios
- i. $\frac{\text{Trade receivables}}{\text{Credit sales}} \times 365 \text{ days} = \frac{70}{600 \times 365\text{days}} = 42.58\text{days}$
 Note: Where there is no credit sales use Turnover
- ii. Trade payable payment period

$$\frac{\text{Trade payable} \times 365 \text{ days}}{\text{Credit purchase}} = \frac{80}{320} \times 365 \text{ days} = 91.25 \text{ days}$$

Note: Where there is no purchase use cost of sales

- iii. Inventory Turnover Period = $\frac{\text{Total inventories}}{\text{Cost of sales}} \times 365 \text{ days}$
 $= \frac{120}{300} \times 365 \text{ days} = 146 \text{ days}$
- iv. Inventory Turnover Ratio = $\frac{\text{Cost of Sales}}{\text{Average inventories}} = \frac{300\text{m}}{60\text{m}} = 5 \text{ times}$

d. Solvency Classification/Ratio

- i. Gearing Ratio = $\frac{\text{Long term debts}}{\text{Share capital} + \text{reserve}} \times 100\%$
 $= \frac{100}{250 + 100 + 6} \times 100\% = \frac{100}{366} \times 100\% = 27.32\%$

Or long-term debt (LTD) = $\frac{\text{N100m}}{\text{Equity} + \text{Long-term debt}} \times 100$
 $= \frac{100}{366 + 100} \times 100$

- ii. Interest Cover Ratio: $\frac{\text{Profit before interest and tax}}{\text{Total interest} + \text{charger}} = \frac{150}{24} = 6.25 \text{ times}$
- iii. Proprietors share ratio: $\frac{\text{Equity}}{\text{Total liabilities}} \times 100\%$
 $= \frac{366}{229} \times 100\% = 159.83\%$

- iv. Trade payment period (Purchase = 320)
 N'm

Closing stock	120
Cost of sales	<u>300</u>
Goods available for sales	420
Less opening stock	<u>100</u>
Purchase	<u>320</u>

e. Investment Ratio

- i. Dividend per share = $\frac{\text{Total dividend}}{\text{No of ordinary share ranking}}$
 $= \frac{50,000,000}{50,000,000}$ i.e. $\frac{250}{50} = 50$
 N5each 50 = N1.00
- ii. Earnings per share = $\frac{\text{Profit after tax}}{\text{No of ordinary shares}} = \frac{66\text{m}}{50 \text{ units}} = \text{N1.32kobo}$
- iii. Market value per share = $\frac{\text{Total market value}}{\text{No of ordinary shares}}$ MVPS = N20

Market value of the business

$$= \text{MPS} \times \text{No of ordinary share} = \text{N20} \times 50\text{million} = 1 \text{ billion}$$

- iv. Price earnings ratio = $\frac{\text{MPS}}{\text{EPS}} = \frac{\text{N20}}{\text{N1.32}} = 15.15$

- v. Dividend yield = $\frac{\text{DPS}}{\text{MPS}} \times 100\% = \frac{1.00}{2000} \times 100 = 5\%$
- vi. Earning yield = $\frac{\text{Earnings per share}}{\text{Market price per share}} \times 100\%$
 $= \frac{N1.32}{N20} \times 100\% = 6.6\%$
- vii. Dividend cover ratio = $\frac{\text{Earnings per share}}{\text{Dividend per share}} = \text{xx times}$
 $= \frac{N1.32}{N1.00} = 1.32 \text{ times}$

2. Vertical Analysis of Financial Statement

Income Statement Analysis

	₦'m	
Turnover	600m	100%
Cost of sales	(300)	50%
Gross profit	300	50%
Less Expenses		
Admin	(100)	16.67%
Selling and Distribution	(50)	8.33%
Profit before interest tax	150	25%
Finance expenses (Interest)	(24)	4%
Profit before tax	126	21%
Profit expenses (provision)	(60)	10%
Profit after tax	66	11%
Proposed divided	(50)	8.33%
Retailed earnings	16	2.67%

Workings

Cost of sales	=	$\frac{300\text{m}}{600\text{m}} \times 100\%$	= 50%
Gross Profit	=	$\frac{300\text{m}}{600\text{m}} \times 100\%$	= 50%
Admin Expenses	=	$\frac{100\text{m}}{600\text{m}} \times 100\%$	= 16.67%
Selling & Distribution expenses	=	$\frac{100\text{m}}{600\text{m}} \times 100\%$	= 8.33%
Profit before interest & tax	=	$\frac{150\text{m}}{600\text{m}} \times 100\%$	= 25%
Finance Expenses	=	$\frac{24\text{m}}{600\text{m}} \times 100\%$	= 4%

PBT	=	<u>12m</u>	x 100%
		600m	= 21%
Tax Expenses	=	<u>60m</u>	x 100%
		600m	= 10%
Profit After Tax	=	<u>66m</u>	x 100%
		600m	= 11%
Dividend	=	<u>50m</u>	x 100%
		600m	= 8.33%
Retained Earnings	=	<u>16m</u>	x 100%
		600m	= 2.67%

Statement of Financial Analysis

Non-Current Assets	N'm	%
Property, Plant and Equipment	260	43.697
Investment	40	6.72%
Goodwill	60	10.08%
	<u>360</u>	
<u>Current Assets</u>		
Inventory	120	20.17
Trade Receivables	70	11.76
Cash & Bank	25	4.20
Prepayment	<u>20</u>	3.36
	<u>595</u>	100
<u>Current Liabilities</u>		
Trade Payable	80	13.45
Accruals	20	3.36
Tax Payables	<u>29</u>	4.87
	129	
Long Term Liabilities (Loan)	<u>100</u>	16.81
<u>Equity & Capital</u>		
Ordinary Shares N5 each	250	42.62
Reserves	100	16.81
Retained Earnings	<u>16</u>	2.69
	595	100
Workings		
PPE	=	<u>260m</u> x 100%
		595 = 43.70%
Investment	=	<u>40m</u> x 100%
		595 = 6.72%
Goodwill	=	<u>60m</u> x 100%
		595 = 10.08%

Inventory	=	<u>120m</u>	x 100%
	595		= 20.17%
Trade Receivable	=	<u>120m</u>	x 100%
	595		= 11.76%
Cash & Bank	=	<u>25m</u>	x 100%
	595		= 4.20%
Prepayment	=	<u>20m</u>	x 100%
	595		= 3.36%
Trade Payable	=	<u>80m</u>	x 100%
	595		= 13.45%
Accruals	=	<u>20m</u>	x 100%
	595		= 3.36%
Tax Payable	=	<u>29m</u>	x 100%
	595		= 4.87%
Long-term Liabilities (Loan)	=	<u>100m</u>	x 100%
	595		= 16.81%
Ordinary Share Capital	=	<u>250m</u>	x 100%
	595		= 42.62%
Reserve	=	<u>100m</u>	x 100%
	595		= 16.81%
Retained Earnings	=	<u>16m</u>	x 100%
	595		= 2.69%

Easy Going Plc
Horizontal Analysis (Income Statement)

	2015	2014	DH	%
Turnover	600	500	100	20
Cost of sales	<u>(300)</u>	<u>(260)</u>	<u>(40)</u>	15.38
Gross profit	300	240	60	25
Admin Expenses	(100)	(90)	10	11.11
Selling and Distribution	<u>(50)</u>	<u>(60)</u>	<u>(10)</u>	-16.67
Profit before interest tax	150	(90)	60	66.67
Finance expenses (Interest)	<u>(24)</u>	<u>(28.8)</u>	<u>4.8</u>	16.67
Profit before tax	126	61.20	64.8	
Tax expenses (provision)	<u>60</u>	<u>21.20</u>		
Profit after tax	66	40		
Proposed divided	<u>(50)</u>	<u>40</u>		
Retained earnings	(16)			

Horizontal Analysis = $\frac{\text{Current Year Value} - \text{Previous Year Value}}{\text{Previous Year Value}}$

$$\text{Turnover} = \frac{600 - 500}{500} \times 100\%$$

Cost of Sales	=	$\frac{300 - 260}{260} \times 100\%$	= 15.38%
Gross Profit	=	$\frac{300 - 240}{500} \times 100\%$	= 25%
Admin Expenses	=	$\frac{100 - 90}{90} \times 100\%$	=
Selling and Distribution Exp.	=	$\frac{50 - 60}{60} \times 100\%$	= -16.67%
Profit Before Int & Tax	=	$\frac{150 - 90}{90} \times 100\%$	= 66.67%
Profit Before Tax	=	$\frac{126 - 61.20}{61.20} \times 100\%$	= 105.88%
Tax Expenses	=	$\frac{60 - 21.20}{21.20} \times 100\%$	=
Profit After Tax	=	$\frac{66 - 40}{40} \times 100\%$	=
Proposed Dividend	=	$\frac{50 - 40}{40} \times 100\%$	=
Retained Earnings	=	$\frac{16 - 0}{0} \times 100\%$	= 1

4.9 Importance/Reasons for Financial Statement Analysis and Interpretation

The main reasons for Financial Statement Analysis and Interpretation are:

- i. For performance measurement of an entity
- ii. For appraisal and monitoring of constituents of capital structure and cost of capital
- iii. For evaluation of liquidity position of an enterprise
- iv. For examining the solvency position of a firm
- v. For comparison of operational results of two or more firms in the same industry.
- vi. For the purpose of establishing whether a firm is growing over years or not.

4.10 Tools used for analyzing and interpretation of financial statement

- a. Trend analysis based on absolute value i.e *looking at figures over past records and comparing these figures stating the differences in absolute values and suggesting reasons for that.*
- b. Trend analysis based on percentages i.e *the performance or the event given will be expressed in percentage(s) instead of absolute figure or as an addition to absolute figures.*
- c. Detailed analysis of statement of cash flow i.e *this provides information about the cash receipts and payments of an enterprise over a given period of time*

- d. Detailed analysis statement of value added i.e *this statement shows the wealth created by the reporting entity and how such wealth has been applied to financial statement users especially the employees, the government, and the providers of capital*
- e. Analysis of statistical and quantitative information included in Annual Report i.e *this shows the statistical and other quantitative information included in annual report in form of pie charts, bar charts, histogram and other presentation which are shown in pictorial form to highlight some performances in the current financial year and in some cases relate this past year*
- f. Computation and interpretation of significant ratios i.e *this show the important aspect of account analysis. It involves calculating significant ratios and reading meaning to the ratios computed so as to make judgment and draw conclusions which will be used by financial statement users to make business decision.*

4.11 Limitations of Financial Ratios

- a. The difference in the methods adopted by two enterprises may distort the results of analysis and therefore misinform judgment.
- b. There is inherent assumption that historical data used for ratio analysis are inviolate, fixed and applicable under all situation.
- c. Just as mathematics, which engages in arm – chair, reasoning and does not concern itself with what goes on in the empirical world, ratio analysis are not supposed to be ends in themselves.
- d. It may trigger off points for further investigations.
- e. Ratios may not be relied on because, organizations may use different accounting policies even in the same industry.
- f. Other external factors may favour and harm an entity in a particular period, but ratio will not take care of that.

Practice Questions

Multiple Choice Questions

1. The components of financial statements generally consist of the following important statements except
 - A. Income statement or profit and loss account.
 - B. Statement of financial position.
 - C. Statement of changes in owner's equity.
 - D. Report statement**
2. measures the profitability, position, prospect and operation over a period of time
 - A. Statement of financial position
 - B. Ratio analysis**
 - C. Capital budgeting
 - D. Statement of profit and loss
3. Ratios that measure how an organization is able to pay its long-term obligations or commitment to capital providers is called
 - A. Profitability
 - B. Solvency ratio**
 - C. Investment Ratios
 - D. Liquidity
4. The critical examination of all variable in the financial statement for two or more companies in the same industry in order to determine their strengths or weaknesses is
 - A. Trend analysis
 - B. Intra group analysis
 - C. Inter group analysis**
 - D. Vertical analysis
5. The challenges of financial analysis include the following EXCEPT:
 - A. difference in methods adopted may lead to misinform judgment
 - B. is inherent assumption that historical data used for ratio analysis are inviolate
 - C. It may trigger off points for further investigations
 - D. it increases competition**

Use the table below to answer question 6-10

	₤
Turnover	120,000
Net profit before interest and tax	60,000
Debenture interest	2,000
Net profit after interest	58,000
Stock	2,500
Debtors	5,000
Other current assets	24,000
Current liabilities	10,500
Tax for the year	20%

6. Calculate Acid test ratio
 - A. **2.76:1**
 - B. 3.45:1
 - C. 2.29:1
 - D. 4.43:1

7. Calculate current ratio
 - A. 5.17:1
 - B. 3.00:1**
 - C. 6.03:1
 - D. 2.51:1

8. Calculate gross profit margin
 - A. 44.00%
 - B. 60.83%
 - C. 50.00%**
 - D. 33.45%

9. Calculate profit after tax margin
 - A. 56.10%
 - B. 48.33%
 - C. 45.19%
 - D. 38.67%**

10. Calculate interest times earned
 - A. 62 times
 - B. 30 times**
 - C. 45 times
 - D. 12 times

Theoretical Questions

1. Describe the term Financial Statement and explain four main contents of Financial Statement
2. Differentiate between Vertical Ratio Analysis and Horizontal Ratio Analysis
3. a. Define Financial Statement Analysis
b. State five importance of Financial Statement Analysis
4. Discuss four classifications of Financial Statement Analysis and mention any three examples under each classification
5. State six limitations of Ratio Analysis

CHAPTER 5

CAPITAL BUDGETING DECISION

Learning Objectives

After studying this chapter, candidates should be able to:

1. Understand the Meaning, Importance and Features of Capital Budgeting decisions,
2. Appropriately classify Capital Budgeting decisions,
3. Evaluate Capital Budgeting decisions using the Discounted and Non-Discounted Cashflow Techniques,
4. Correctly distinguish Decision making under situations of Risks, Uncertainties and Certainty, and
5. Apply various techniques of Capital budgeting under situations of Risks and Uncertainties.

5.1 Introduction

The word Capital refers to be the total investment of a company of firm in money, tangible and intangible assets. Whereas budgeting defined by the “**Rowland and William**” it may be said to be the art of building budgets. Budgets are a blue print of a plan and action expressed in quantities and manners

The examples of capital expenditure:

1. Purchase of fixed assets such as land and building, plant and machinery, good will, etc.
2. The expenditure relating to addition, expansion, improvement and alteration to the fixed assets.
3. The replacement of fixed assets.
4. Research and development project.

5.2 Meaning and Definitions of Capital Budgeting

According to the definition of C. T. Horngreen (2002), “capital budgeting is a long-term planning for making and financing proposed capital out lays. According to the definition of G.C. Philippatos (1991), “capital budgeting is concerned with the allocation of the firm’s source financial resources among the available opportunities. The consideration of investment opportunities involves the comparison of the expected future streams of earnings from a project

with the immediate and subsequent streams of earning from a project, with the immediate and subsequent streams of expenditure”.

According to the definition of Richard and Green law (2023), “capital budgeting is acquiring inputs with long-term return”. According to the definition of Lyrich (2020), “capital budgeting consists in planning development of available capital for the purpose of maximizing the long-term profitability of the concern”.

It is clearly explained in the above definitions that a firm’s scarce financial resources are utilizing the available opportunities. The overall objectives of the company is to maximize the profits and minimize the expenditure of cost.

5.3 Needs and Importance or Objectives of Capital Budgeting Decisions

1. **Huge investments:** Capital budgeting requires huge investments of funds, but the available funds are limited, therefore the firm before investing projects, plan, control its capital expenditure.
2. **Long-term:** Capital expenditure is long-term in nature or permanent in nature. Therefore, financial risks involved in the investment decision are more. If higher risks are involved, it needs careful planning of capital budgeting.
3. **Irreversible:** The capital investment decisions are irreversible, are not changed back. Once the decision is taken for purchasing a permanent asset, it is very difficult to dispose of those assets without involving huge losses.
4. **Long-term effect:** Capital budgeting not only reduces the cost but also increases the revenue in long-term and will bring significant changes in the profit of the company by avoiding over or more investment or under investment. Overinvestments leads to be unable to utilize assets or over utilization of fixed assets. Therefore, before making the investment, it is required carefully planning and analysis of the project thoroughly.

5.4 Capital Budgeting Process

Capital budgeting is a difficult process to the investment of available funds. The benefit will attain only in the near future but, the future is uncertain. However, the following steps followed for capital budgeting, then the process may be easier are.

1. **Identification of various investments proposals:** The capital budgeting may have various investment proposals. The proposal for the investment opportunities may be defined from the top management or may be even from the lower rank. The heads of various department analyse the various investment decisions, and will select proposals submitted to the planning committee of competent authority.
2. **Screening or matching the proposals:** The planning committee will analyse the various proposals and screenings. The selected proposals are considered with the available resources of the concern. Here, resources are referred to as the financial part of the proposal. This reduces the gap between the resources and the investment cost.
3. **Evaluation:** After screening, the proposals are evaluated with the help of various methods, such as payback period proposal, net discovered present value method, accounting rate of return and risk analysis. Each method of evaluation used in detail in the later part of this chapter. The proposals are evaluated by.

- (a) Independent proposals
- (b) Contingent of dependent proposals
- (c) Partially exclusive proposals.

Independent proposals are not compared with other proposals and the same may be accepted or rejected. Whereas higher proposals acceptance depends upon the other one or more proposals. For example, the expansion of plant machinery leads to constructing of new building, additional manpower etc. Mutually exclusive projects are those which competed with other proposals and to implement the proposals after considering the risk and return, market demand etc.

4. **Fixing property:** After the evolution, the planning committee will predict which proposals will give more profit or economic consideration. If the projects or proposals are not suitable for the concern's financial condition, the projects are rejected without considering other nature of the proposals.
5. **Final approval:** The planning committee approves the final proposals, with the help of the following:
 - (a) Profitability
 - (b) Economic constituents
 - (c) Financial violability
 - (d) Market conditions.

The planning committee prepares the cost estimation and submits to the management.

6. **Implementing:** The competent authority spends the money and implements the proposals. While implementing the proposals, assign responsibilities to the proposals, assign responsibilities for completing it, within the time allotted and reduce the cost for this purpose. The network techniques used such as PERT and CPM. It helps the management for monitoring and containing the implementation of the proposals.
7. **Performance review of feedback:** The final stage of capital budgeting is actual results compared with the standard results. The adverse or unfavourable results identified and removing the various difficulties of the project. This is helpful for the future of the proposals.

5.5 Types of Capital Budgeting Decisions

The overall objective of capital budgeting is to maximize the profitability. If a firm concentrates on returns on investment, this objective can be achieved either by increasing the revenues or reducing the costs. The increasing revenues can be achieved by expansion or the size of operations by adding a new product line. Reducing costs mean representing obsolete return on assets.

5.6 Methods of Capital Budgeting Decisions and Evaluation

This is by matching the available resources and projects it can be invested. The funds available are always living funds. There are many considerations taken for investment decision process such as environment and economic conditions.

The methods of evaluations are classified as follows:

(A) Traditional methods (or Non-discount methods)

- (i) Pay-back Period Methods
- (ii) Post Pay-back Methods
- (iii) Accounts Rate of Return

(B) Modern methods (or Discount methods)

- (i) Net Present Value Method
- (ii) Internal Rate of Return Method
- (iii) Profitability Index Method

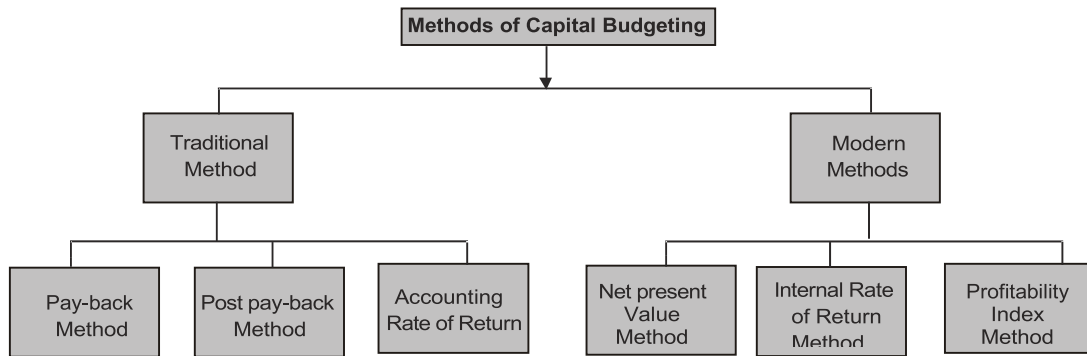


Fig. 9.2 Capital Budgeting Methods

Pay-back Period

Pay-back period is the time required to recover the initial investment in a project. (It is one of the non-discounted cash flow methods of capital budgeting).

$$\text{Pay-back period} = \frac{\text{Initial investment}}{\text{Annual cash inflows}}$$

Merits of Pay-back method

The following are the important merits of the pay-back method:

1. It is easy to calculate and simple to understand.
2. Pay-back method provides further improvement over the accounting rate return.
3. Pay-back method reduces the possibility of loss on account of obsolescence.

Demerits

1. It ignores the time value of money.
2. It ignores all cash inflows after the pay-back period.
3. It is one of the misleading evaluations of capital budgeting.

Accept/Reject Criteria

If the actual pay-back period is less than the predetermined pay-back period, the project would be accepted. If not, it would be rejected.

Illustration 1

Project cost is N30,000 and the cash inflows are N10,000, the life of the project is 5 years. Calculate the pay-back period.

Solution

$$\begin{aligned} \text{PBP} &= \frac{\text{N30,000}}{\text{N10,000}} \\ &= 3 \text{ Years} \end{aligned}$$

$$\text{Unadjusted rate of return} = \frac{\text{Annual Return}}{\text{Investment}}$$

The annual cash inflow is calculated by considering the amount of net income on the amount of depreciation project (asset) before taxation. The income precision earned is expressed as a percentage of initial investment, is called unadjusted rate of return. The above problem will be calculated as below:

Uneven Cash Inflows

The pay-back term may be computed based on cumulative cash inflows and then interpreted in situations when projects do not experience uniform cash inflows.

Illustration 2

Certain projects require an initial cash outflow of N25,000. The cash inflows for 6 years are N5,000, N8,000, N10,000, N12,000, N7,000 and N3,000.

Solution

Year	Cash Inflows (N)	Cumulative Cash Inflows
------	------------------	-------------------------

		(N)
1	5,000	5,000
2	8,000	13,000
3	10,000	23,000
4	12,000	35,000
5	7,000	42,000
6	3,000	45,000

The above calculation shows that in 3 years N23,000 has been recovered, N2,000, is balance out of cash outflow. In the 4th year the cash inflow is N12,000. It means the pay-back period is three to four years, calculated as follows

$$\begin{aligned} \text{Pay-back period} &= 3 \text{ years} + \frac{2000}{12000} \times 12 \text{ months} \\ &= 3 \text{ years } 2 \text{ months.} \end{aligned}$$

Post Pay-back Profitability Method

One of the major limitations of pay-back period method is that it does not consider the cash inflows earned after pay-back period and if the real profitability of the project cannot be assessed. To improve over this method, it can be made by considering the receivable after the pay-back period. These returns are called post pay-back profits.

Accounting Rate of Return

Average rate of return means the average rate of return or profit taken for considering the project evaluation. This method is one of the traditional methods for evaluating the project proposals:

Merits

1. It is easy to calculate and simple to understand.
2. It is based on the accounting information rather than cash inflow.
3. It is not based on the time value of money.
4. It considers the total benefits associated with the project.

Demerits

1. It ignores the time value of money.
2. It ignores the reinvestment potential of a project.
3. Different methods are used for accounting profit. So, it leads to some difficulties in the calculation of the project.

Accept/Reject Criteria

If the actual accounting rate of return is more than the predetermined required rate of return, the project would be accepted. If not, it would be rejected.

Illustration 3

A company has two alternative proposals. The details are as follows:

	Proposal I	Proposal II
	Automatic Machine	Ordinary Machine
Cost of the machine	N 2,20,000	N 60,000
Estimated life	5½ years	8 years
Estimated sales p.a.	N150,000	N150,000
Costs: Material	50,000	50,000
Labour	12,000	60,000
Variable Overheads	24,000	20,000

Solution

Profitability Statement

	Automatic Machine	Ordinary Machine
Cost of the machine	N220,000	N60,000
Life of the machine	5½ years	8 years
	N	N
Estimated Sales	(A) 150,000	150,000
Less: Cost: Material	50,000	50,000
Labour	12,000	60,000
Variable overheads	24,000	20,000
Depreciation (1)	40,000	7,000
Total Cost	<u>(B) 126,000</u>	<u>137,000</u>
Profit (A) – (B)	24,000	12,500

Working:

(1) Depreciation = Cost \square

Life = 220,000 \square 5½ = 40,000

Automatic machine

Ordinary machine = 60,000 \square 8 = 7,500

Return on investment = $\frac{\text{Average Profit}}{\text{Original investment}}$

= 2,20,000 \times 100

60,000 \times 100

10.9% 20.8%

Automatic machine is more profitable than the ordinary machine

Net Present Value

Net present value method is one of the modern methods for evaluating the project proposals. In this method cash inflows are considered with the time value of the money. Net present value is described as the summation of the present value of cash inflow and present value of cash outflow. Net present value is the difference between the total present value of future cash inflows and the total present value of future cash outflows.

Merits

1. It recognizes the time value of money.
2. It considers the total benefits arising out of the proposal.
3. It is the best method for the selection of mutually exclusive projects.
4. It helps to achieve the maximization of shareholders' wealth.

Demerits

1. It is difficult to understand and calculate.
2. It needs the discount factors for calculation of present values.
3. It is not suitable for the projects having different effective lives.

Accept/Reject Criteria

If the present value of cash inflows is more than the present value of cash outflows, it would be accepted. If not, it would be rejected.

Illustrations 4

From the following information, calculate the net present value of the two project and suggest which of the two projects should be accepted a discount rate of the two:

	Project X	Project Y
--	------------------	------------------

Initial Investment	N20,000	N30,000
Estimated Life	5 years	5 years
Scrap Value	N1,000	N2,000

The profits before depreciation and after taxation (cash flows) are as follows:

	Year 1	Year 2	Year 3	Year 4	Year 5
	N	N	N	N	N
Project x	5,000	10,000	10,000	3,000	2,000
Project y	20,000	10,000	5,000	3,000	2,000

Note: The following are the present value factors @ 10% p.a.

Solution

Year	Cash Inflows		Present Value of N1 @ 10%	Present Value of Net Cash Inflow	
	Project X N	Project Y N		Project X N	Project Y N
1	5,000	20,000	0.909	4,545	18,180
2	10,000	10,000	0.826	8,260	8,260
3	10,000	5,000	0.751	7,510	3,755
4	3,000	3,000	0.683	2,049	2,049
5	2,000	2,000	0.621	1,242	1,242
Scrap Value	1,000	2,000	0.621	621	1,245
Total present value Initial Investments				24,227	34,728
Net present value				4,227	4,728

Project Y should be selected as net present value of project Y is higher.

Internal Rate of Return

Internal rate of return is a time adjusted technique and covers the disadvantages of the traditional techniques. In other words, it is a rate at which discount cash flows to zero. It is expected by the following ratio:

$$\frac{\text{Cash inflow}}{\text{Investment initial}}$$

Steps to be followed:

Step 1. Determine the factor

Factor is calculated as follows:

$$F = \frac{\text{Cash outlay (or) initial investment}}{\text{Cash inflow}}$$

Step 2. Determine positive net present value

Step 3. Determine negative net present value

Step 4. Determine formula net present value

Formula

$$\text{IRR} = \text{Base factor} + \frac{\text{Positive net present value}}{\text{Difference in positive and Negative net present value}} \times \text{DP}$$

Base factor = Positive discount rate
DP = Difference in percentage

Merits

1. It considers the time value of money.
2. It takes into
3. account the total cash inflow and outflow.
4. It does not use the concept of the required rate of return.
5. It gives the approximate/nearest rate of return.

Demerits

1. It involves complicated computational method.
2. It produces multiple rates which may be confusing for taking decisions.
3. It is assumed that all intermediate cash flows are reinvested at the internal rate of return.

Accept/Reject Criteria

If the present value of the sum total of the compounded reinvested cash flows is greater than the present value of the outflows, the proposed project is accepted. If not it would be rejected.

Illustration 5

The initial of an equipment is N10,000. Cash inflow for 5 years are estimated to be N3,500 per year. The management is desired for minimum rate of excess present value index.

Solution

Present value of N1 received annually for 5 years can be had from the annuity table.

Present value of 3,500 received annually for 5 years

$$\begin{aligned} \text{Excess present value index} &= \frac{\text{Total present value of cash inflows}}{\text{Total present value of cash outflows}} \\ &= \frac{11,732}{10,000} \times 100 \\ &= 117,32\% \end{aligned}$$

Capital Rationing

In the rationing the company has only limited investment the projects are selected according to the profitability. The project has selected the combination of proposal that will yield the greatest portability.

Illustration 7

Let us assume that a firm has only N2,000,000 to invest and funds cannot be provided. The various proposals along with the cost and profitability index are as follows.

Proposal	Pool of the project	Profitability Index
----------	---------------------	---------------------

1	600,000	1.46
2	200,000	.098
3	1,000,000	2.31
4	400,000	1.32
5	300,000	1.25

Solution

In this example all proposals except number 2 give profitability exceeding one and are profitable investments. The total outlay required to be invested in all other (profitable) project is N 25,00,000(1+2+3+4+5) but total funds available with the firm are N2,000,000 and hence the firm has to do capital combination of project within a total which has the lowest profitability index along with the profitable proposals cannot be taken.

Accounting Rate of Return (ARR)

This technique is assessed by calculating the return on investment (ROI) i.e. it is based on Return on Capital Employed – ROCE.

ARR is entirely an accounting-based technique of investment appraisal. It makes use of the accounting concepts of accounting profits and “capital employed” hence it uses accounting profit instead of economic profit.

It can be calculated as follows:

$$\text{ARR} = \frac{\text{Estimated total profits}}{\text{Estimated initial investment}} \times 100$$

$$\text{or } \text{ARR} = \frac{\text{Estimated total profits}}{\text{Estimated average investment}} \times 100$$

$$\text{or } \text{ARR} = \frac{\text{Estimated average profits}}{\text{Estimated average investment}} \times 100$$

$$\text{or } \text{ARR} = \frac{\text{Estimated total profits}}{\text{Estimated average investment}} \times 100$$

Estimated initial investment

Illustration 8:

Ebonyi Plc is to undertake a project requiring an investment of ₦100,000 on necessary plant and machinery. The project is to last for 5 years at the end of which the plant and machinery will have net book value of ₦20,000. Profits before depreciation are as follows:

Yr	Profit (₦)
1	40,000
2	44,000
3	48,000
4	52,000
5	58,000

You are required to calculate the ARR of the project.

Solution:

Workings:

i. Calculation of depreciation

Cost	-	₦100,000
NBV	-	<u>₦ 20,000</u>
Accum. Depr	-	<u>₦ 80,000</u>

Average depr/year = $\frac{₦80,000}{5}$ i.e. ₦16,000

ii. Calculation of Average Investment

This is calculated by adding the initial investment to the net book value and divide the product by 2.

Please Note

4. It presents the analysis in terms of a familiar percentage figure that can be easily understood and interpreted by all the users of the data.
5. It could be used to compare performance for many companies.

Disadvantages Of ARR

1. It suffers from definition problems, in that it can be calculated in several ways.
2. It takes no account of the time value of money.
3. There are no rules for setting the minimum acceptable ARR by the management.
4. There is no clear definition in accounting of profit and capital employed.
5. It uses accounting profit rather than cash as the measure of benefit.
6. When dealing with mutually exclusive projects, it will favour a project having an ARR of 10% on ₦100,000 to a project having an ARR of 8% of ₦1,000,000.
7. It ignores risk and management's attitude to risk.

Pay Back Period

Whenever capital is invested in a project, money is 'tied up' until the project begins to earn profits, which pay back the investment. Money tied up in one project cannot be invested anywhere else until the profits come in. Management should be aware of the benefits of early repayments from an investment, which will provide the money for other investments. This is where the importance of payback period comes in.

The CIMA's official terminology defines payback as follows:

"The period, usually expressed in years, which it takes the cash inflows from a capital investment project to equal the cash outflows".

The payback period technique – PBP – is used to determine how quickly a project repays its outlay.

It concentrates on how rapidly the project pays back its outlay.

It can be calculated in two ways depending on whether

- i. the cash flows are constant – annual constant cash flows i.e. the same amount every year or
- ii. non-constant (irregular) cash flows.

i. If the annual cash flows are constant

The PBP is calculated as follows:

$$= \text{OUTLAY} / \text{ACCF} \quad (\text{Annual Constant Cash Flow})$$

ii. If the cash flows are not constant

the PBP is calculated by recouping as follows:

Yr	Outlay	Cash flow	Balance
0	(T)		(T)
1		A	(T) + A
2		B	(T) + A + B
3		C	(T) + A + B + C <i>until the balance is zero</i>

Illustration 9

Adamawa Plc is to undertake a project requiring ₦1,000,000 outlay.

Required: What is the PBP if

- (a) the project generates ₦250,000 annually
- (b) the project has the following cash flow profile

Yr	CF
1	200,000
2	220,000
3	230,000
4	220,000

5 195,000

Solution:

$$(a) \quad \text{PBP} = \frac{\text{Outlay i.e. } 1,000,000}{\text{ACCF } 250,000} = 4 \text{ years}$$

(b) YR	OUTLAY	CF	BALANCE
0	(1,000,000)		(1,000,000)
1	200,000		(800,000)
2	220,000		(580,000)
3	230,000	(350,000)	
4	220,000		(130,000)
5	195,000		-

$$= 4^{130/195} \text{ years} \quad \text{i.e. } \underline{\underline{4.67 \text{ years}}}$$

Decision Rules

A. Independent Projects

1. Accept if the project has a PBP that is equal to or less than that set by the management.
2. Reject if the project has a PBP that is greater than that set by the management.

B. Mutually Exclusive PROJECTS

1. Select the project with the least PBP.
2. Ensure that the project selected has a PBP that is equal to or less than that set by the management.

Advantages Of PBP

1. It is simple to calculate and understand.
2. Of all the appraisal techniques, it is the least affected by uncertainties. The reason is that it focuses on the shortness of projects as far as life span is concerned as it places emphasis on

liquidity because the lower the PBP the more liquid the company becomes. Forecasting errors due to long term estimates are therefore reduced.

3. Unlike ARR, it uses cash profit instead of accounting profit. Cash profit is superior to accounting profit.
4. It serves as a “first screening process” i.e. as a simple initial screening process for new projects.
5. It is often used in risk analysis in that it is believed that the higher the payback period of a project, the riskier the project.

Disadvantages Of PBP

1. Unless the DCF payback period is used, it ignores the time value of money.
2. There are no rules for setting the maximum acceptable PBP by the management.
3. It ignores the cash flows after the payback period.
4. It may lead to excessive investment in short-term projects.
5. It takes account of the timing of cash flows but not the variability of those cash flows.
6. It is unable to distinguish between projects with the same payback period.
7. It suffers definition problems of what the outlay is and where the payback period starts from e.g.
 - (a) What is the outlay of the project below?
 - (b) What does the PBP start?

Yr	0	1	2	3	4	5
CF	(5,000)	3,000)	(2,500)	3,500	(2,000)	4,000

PBP Reciprocal

An alternative way to express the PBP is the payback period reciprocal which is the inverse of PBP. i.e. $\frac{1}{\text{PBP}}$ x 100%

PBP

PBP with Bail Out Factor

With this technique, the possibility of using the scrap value to rescue a project while calculating its payback is considered.

Illustration:

Yemco Nig. Plc is to undertake a project having the following data:

Yr	Outlay	Cashflow	Scrap Value
0	(100,000)		-
1		30,000	20,000
2		30,000	15,000
3		30,000	12,000
4		40,000	-
5		20,000	-

You are required to calculate a PBP using the scrap value as the bail out factor.

Solution:

Yr	CF	S/Value	Cum CF
0	(100,000)	-	
1	30,000	20,000	30,000
2	30,000	15,000	60,000
3	30,000	12,000	102,000
4	40,000	-	-
5	20,000	-	-

Decision: Therefore, the payback period is 3 years.

N. B. The scrap value occurs at the end of the year and so there can be no fraction.

5.7 Risk and Uncertainly In Capital Budgeting

Capital budgeting requires the projection of cash inflow and outflow of the future. The future is always uncertain, estimate of demand, production, selling price, cost etc., cannot be exact. For example: The product at any time it become obsolete therefore, the future is unexpected. The following methods for considering the accounting of risk in capital budgeting. Various evaluation methods are used for risk and uncertainty in capital budgeting are as follows:

- (i) Risk-adjusted cut off rate (or method of varying discount rate)
- (ii) Certainly, equivalent method.
- (iii) Sensitivity technique.
- (iv) Probability technique
- (v) Standard deviation method.
- (vi) Co-efficient of variation method.
- (vii) Decision tree analysis.

(i) Risk-adjusted cutoff rate (or Method of varying)

This is one of the simplest methods while calculating the risk in capital budgeting increase cut of rate or discount factor by certain percentage an account of risk.

Illustration

The Ramakrishna Ltd., in considering the purchase of a new investment.

Two alternative investments are available (X and Y) each costing N150,000. Cash inflows are expected to be as follows:

Cash Inflows

Year	Investment XN	Investment
------	---------------	------------

		YN
1	60,000	65,000
2	45,000	55,000
3	35,000	40,000
4	30,000	40,000

The company has a target return on capital of 10%. Risk premium rate are 2% and 8% respectively for investment X and Y. Which investment should be preferred?

Solution

The profitability of the two investments can be compared on the basis of net present values cash inflows adjusted for risk premium rates as follows:

Year	Investment X			Investment Y		
	Discount Factor 10% + 2% = 12%	Cash Inflow N	Present Value N	Discount Factor 10% + 8% = 18%	Cash Inflow N	Present Values
1	0.893	60,000	53,580	0.847	85,000	71,995
2	0.797	45,000	35,865	0.718	55,000	39,490
3	0.712	35,000	24,920	0.609	40,000	24,360
4	0.635	30,000	19,050	0.516	40,000	20,640
			1,33,415			1,56,485

Investment X

$$\begin{aligned} \text{Net present value} &= 133415 - 150000 \\ &= -N 16585 \end{aligned}$$

Investment Y

$$\begin{aligned} \text{Net present value} &= 156485 - 150000 \\ &= N 6485 \end{aligned}$$

As even at a higher discount rate investment Y gives a higher net present value, investment Y should be preferred.

(ii) Certainly, equivalent method

It is also another simplest method for calculating risk in capital budgeting info reduced expected cash inflows by certain amounts it can be employed by multiplying the expected cash inflows by certainly equivalent co-efficient in order the uncertain cash inflow to certain cash inflows.

Illustration

There are two projects A and B. Each involves an investment of N 50,000. The expected cash inflows and the certainly co-efficient are as under:

Year	Project A		Project B		
	Cash inflows	Certainly, co-efficient	Cash inflows	Certainly, efficient	Co-
1	35,000	.8	25,000	.9	
2	30,000	.7	35,000	.8	
3	20,000	.9	20,000	.7	

Risk-free cutoff rate is 10%. Suggest which of the two projects. Should be preferred.

Solution

Calculations of cash Inflows with certainly:

the three situations differ widely it implies that there is a great risk in the project and the investor's decision to accept or reject a project will depend upon his risk bearing activities.

Illustration

Mr. Selva is considering two mutually exclusive project 'X' and 'Y'. You are required to advise him about the acceptability of the projects from the following information.

	Project XN	Project YN
Cost of the investment	1,0,0000	1,00,000
Forecast cash inflows per annum for 5 years		
Optimistic	60,000	55,000
Most likely	35,000	30,000
Pessimistic	20,000	20,000

(The cut-off rate may be assumed to be 15%).

Solution

Calculation of net present value of cash inflows at a discount rate of 15%. (Annuity of Re. 1 for 5 years).

For Project X

Event	Annual cash Inflow N	Discount factor @ 15 %	Present valueN	Net Present value N
Optimistic	60,000	3.3522	2,01,132	1,01,132
Most likely	35,000	3.3522	1,17,327	17,327
Pessimistic	20,000	3.3522	67,105	(32,895)

For Project Y

Event	Annual cash Inflow N	Discount factor @ 15 %	Present valueN	Net Present value N
Optimistic	55,000	3.3522	1,84,371	84,371
Most likely	30,000	3.3522	1,00,566	566
Pessimistic	20,000	3.3522	67,105	(32,895)

The net present values on calculated above indicate that project Y is riskier as compared to project X. But at the same time during favourable condition, it is more profitable also. The acceptability of the project will depend upon Mr. Selva's attitude towards risk. If he could afford to take higher risk, project Y may be more profitable.

(iv) Probability technique

Probability technique refers to each event of future happenings are assigned with relative frequency probability. Probability means the likelihood of future event. The cash inflows of the future years further discounted with the probability. The higher present value may be accepted.

Illustration

Two mutually exclusive investment proposals are being considered. The following information is available.

	Project A (N)	Project B (N)
Cost	10,000	10,000

Cash inflows	N	Probability	N	Probability
---------------------	----------	--------------------	----------	--------------------

Year				
1	10,000	.2	12,000	.2
2	18,000	.6	16,000	.6
3	8,000	.2	14,000	.2

Assuming cost of capital at (or) advise the selection of the project:

Solution

Calculation of net project values of the two projects.

Project A

Year	P.V. Factor @ 10 %	Cash Inflow	Probability	Monetary Value	Present Value N
1	0.909	10,000	.2	2,000	1,818
2	0.826	18,000	.6	10,800	8,921
3	0.751	8,000	.2	1,600	1,202

Total Present value 11,941

Cost of Investment 10,000

Net present value 1,941

Project B

Year	P.V. Factor @ 10 %	Cash Inflow	Probability	Monetary Value	Present Value N
1	0.909	12,000	.2	2,400	2,182
2	0.826	14,000	.6	8,400	6,938
3	0.751	14,000	.2	2,800	2,103

11,22

Total present value	3
Cost of investment	10,00
	0
Net present value	<u>1,223</u>

As net present value of project A is more than that of project B after taking into consideration the probabilities of cash inflows project A is more profitable one.

(v) Standard deviation method

Two Projects have the same cash outflow and their net values are also the same, standard durations of the expected cash inflows of the two Projects may be calculated to measure the comparative and risk of the Projects. The project having a higher standard deviation is said to be riskier as compared to the other.

Illustration

From the following information, ascertain which project should be selected on the basis of standard deviation.

Project X		Project Y	
Cash inflow	Probability	Cash inflow	Probability
3,200	.2	32,000	.1
5,500	.3	5,500	.4
7,400	.3	7,400	.4
8,900	.2	8,900	.1

Solution

Project X

Cash inflow	Deviation from Mean (d)	Square Deviations d^2	Probability	Weighted Deviations (td^2)
1	2	3	4	5
3,200	(-) 6,250	9,30,25,000	.2	18,60,500
5,500	(-) 750	56,2,500	.3	1,68,750
7,400	(+) 1,150	13,22,500	.3	3,96,750
8,900	(+) 2,650	70,22,500	.2	14,04,500

$$n = 1 \quad \Sigma fd^2 = 38,30,500$$

$$\begin{aligned} \text{Standard Deviation } (\sigma) &= \sqrt{\frac{\Sigma fd^2}{n}} \\ &= \sqrt{\frac{3830500}{1}} \end{aligned}$$

$$= 1957.2$$

Project Y

1	2	3	4	5
3,200	(-) 3,050	9,30,25,000	.1	9,30,250
5,500	(-) 750	5,62,500	.4	2,25,000
7,400	(+) 1,150	13,22,500	.4	5,29,000
8,900	(+) 2,650	70,22,500	.1	7,02,250

$$n = 1 \quad \Sigma fd^2 = 3830500$$

$$\begin{aligned} \text{Standard deviation } (\sigma) &= \sqrt{\frac{\Sigma fd^2}{n}} \\ &= \sqrt{\frac{2386500}{1}} \end{aligned}$$

$$= 1544.8$$

As the standard deviation of project X is more than that of project Y, A is more risky.

(i) Co-efficient of variation method

Co-efficient of variation is a relative measure of dispersion. If the projects here is of the same cost but different net present values, relative measure, i.e., co-efficient of variation should be risk induced. It can be calculated as:

$$\text{Co-efficient of variation} = \frac{\text{Standard deviation}}{\text{Mean}}$$

Exercise 13

Using figure of previous example compute the co-efficient of variation and suggest which proposal should be accepted:

Solution

$$\begin{aligned} \text{For project X} &= \frac{1957.2}{6250} \\ &= 31.31\% \end{aligned}$$

As the co-efficient of variation of project 'X' is more than that of 'Y', then project X is more risky. Hence, project Y should be selected.

(ii) Decision tree analysis

In the modern business world, putting the investments are becoming more complex and taking decisions in the risky situations. So, the decision tree analysis is helpful for taking risky and complex decisions, because it considers all the possible events and each possible event is assigned with the probability.

Construction of Decision Tree

1. Define the problem
2. Evaluate the different alternatives
3. Indicate the decision points
4. Assign the probabilities of the monetary values
5. Analyse the alternatives.

Accept/Reject Criteria

If the net present values are in positive the project may be accepted otherwise it is rejected.

Illustration

Mr. Kumar is considering an investment proposal of N40,000. The expected returns during the life of the investment are as under:

Year I

Event	Cash Inflow	Probability
(i)	16,000	.3
(ii)	24,000	.5
(iii)	20,000	.2

Year II

Cash inflows in **Year 1** are:

	16,000		24,000		20,000	
	Cash Inflows (N)	Prob	Cash Inflows (N)	Prob	Cash Inflows (N)	Prob
(i)	30,000	.2	40,000	.1	5,000	.2
(ii)	40,000	.6	60,000	.8	8,000	.5
(iii)	50,000	.2	80,000	.1	12,000	.3

Using 10% as the cost of capital, advise about the acceptability of the proposal.

Practice Questions

Multiple Choice Questions

1. The overall objective of any business organization is
 - A. Creation of wealth
 - B. Maximize expenditure
 - C. Huge investments
 - D. Maximize the profits**
2. is the process of evaluating and selecting long term investment projects that yield future cashflows?
 - A. Working capital
 - B. Ratio analysis
 - C. Capital budgeting**
 - D. Statement of cashflow
3. Profitability index is calculated as
 - A. the ratio of present value of cash inflows to cashflows**
 - B. the ratio of initial investment to annual cash inflows
 - C. the ratio of total cash inflow to total cash outflows
 - D. the ratio of net asset income to assets
4. Which of this is a traditional method
 - A. net present value
 - B. internal rate of return
 - C. profitability index
 - D. account rate of return**
5. Baale has a project the project has Present Value of ₦33,845,000 at a cost of ₦30,000,000 and first-year inflow of N3,000,000, calculate the NPV
 - A. ₦ 63,845,000
 - B. ₦66,845,000
 - C. ₦3,845,000**
 - D. ₦845,000
6. A project cost N30,000 and the cashflow are ₦10,000 the life of the project is 5 years calculate the payback period
 - A. 5 years
 - B. 3 months
 - C. 3 years**
 - D. 3 weeks
7. The discount factor of 15% at 3 years is

- A. 0.4326
- B. 0.3375
- C. 0.6575**
- D. 0.5322

8. A situation where a company places a limit on the total size of capital investment it can undertake during a particular period is referred to as.....
- A. Cost of capital
 - B. Capital rationing**
 - C. capital budgeting
 - D. capital movement
9. Calculate the payback period from the following information: Cash outlay ₦50,000 and cash inflow ₦12,500.
- A. 4 years**
 - B. 5 years
 - C. 6 years
 - D. 7 years

Use the question below to solve 10-12

SP Limited company is having one project, requiring a capital outflow of ₦300,000. The expected annual income after depreciation but before tax is as follows:

Year	₦
1	9,000
2	80,000
3	70,000
4	60,000
5	50,000

Depreciation may be taken as 20% of original cost and cost of capital is 15%:

10. You are required to calculate Net Present Value
- A. ₦37,467
 - B. ₦74,636**
 - C. ₦34,464
 - D. ₦25,745
11. You are required to calculate Net Present Value Index
- A. 12.49%
 - B. 8.58%
 - C. 11.49%

D. **24.87%**

12. You are required to calculate Account rate of return

A. 36.14%

B. 35.87%

C. 45.21%

D. 78.00%

Theoretical Questions

1. What is capital budgeting? Explain its needs and importance.
2. What are the stages of capital budgeting process?
3. Explain the various methods of capital budgeting techniques.
4. What is risk and uncertainty?
5. Calculate the payback period from the following information:
Cash outlay N50,000 and cash inflow N12,500.
6. From the following information, calculate the pay-back periods for the 3 projects.
Which liquors N200,000 each? Suggest the most profitable project.

Year	Project I	Project II	Project III
1	50,000	60,000	35,000
2	50,000	70,000	45,000
3	50,000	75,000	85,000
4	50,000	45,000	50,000
5	50,000	–	35,000

7. The machine cost N100,000 and has scrap value of N10,000 after 5 years. The net profits before depreciation and taxes for the five years period are to be projected that N20,000, N24,000, N30,000, N26,000 and N22,000. Taxes are 50%. Calculate the pay-back period and accounting rate of return.
8. A company has to choose one of the following two actually exclusive machines. Both the machines have to be depreciated. Calculate NPV.

Cash inflows

Year	Machine X	Machine Y
0	–20,000	–20,000
1	5,500	6,200
2	6,200	8,800
3	7,800	4,300
4	4,500	3,700

5	3,000	2,000
---	-------	-------

9. A machine cost N 1,25,000. The cost of capital is 15%. The net cash inflows are as under:

Year	N
1	25,000
2	35,000
3	50,000
4	40,000
5	25,000

Calculate internal rate of return and suggest whether the project should be accepted or not.

10. Which project will be selected under NPV and IRR?

	A	B
Cash outflow	2,00,000	3,00,000
Cash inflows at the end of		
1 Year	60,000	40,000
2 Year	50,000	50,000
3 Year	50,000	60,000
4 Year	40,000	90,000
5 Year	30,000	1,00,000
Cost of capital is 10%.		

11. SP Limited company is having two projects, requiring a capital outflow of N300,000. The expected annual income after depreciation but before tax is as follows:

Year	N
1	9,000
2	80,000
3	70,000
4	60,000
5	50,000

Depreciation may be taken as 20% of original cost and taxation at 50% of net income:

You are required to calculate

- (a) Pay-back period
- (b) Net present value
- (c) According rate of return
- (d) Net present value index.
- (e) Internal rate of return.

CHAPTER 6

WORKING CAPITAL MANAGEMENT

Learning Objectives

After studying this chapter, you should be able to:

1. Understand the Meaning and Rudiments of Working Capital and Working Capital Management
2. Explain the dynamics and Importance of Working Capital to Organizations
3. Explore the various sources of Working Capital and vividly understand the types of Working Capital in operation.
4. Identify the factors affecting the determination of Working Capital
5. Estimate correctly the Working Capital needs of an organization and determine the Optimal Finance mix
6. Formulate a good Working Capital Policy for an Organization while optimizing the tools of effective Working Capital Management, and
7. Clearly understand the effects of Overcapitalization and Undercapitalization on Organizations.

6.1 Introduction

Working capital management is also one of the important parts of the financial management. It is concerned with short-term finance of the business concern which is a closely related trade between profitability and liquidity. Efficient working capital management leads to improve the operating performance of the business concern and it helps to meet the short-term liquidity. Hence, the study of working capital management is not only an important part of financial management but also an overall management of the business concern.

6.2 Meaning of Working Capital

Working capital is described as the capital which is not fixed but the more common uses of the working capital is to consider it as the difference between the book value of current assets and current liabilities. According to the definition of Mead, Baker and Malott (Insert Year), “Working Capital means Current Assets”. According to the definition of J.S.Mill (2016), “The sum of the current asset is the working capital of a business.” According to the definition of Weston and Brigham (2009), “Working Capital refers to a firm’s investment in short-term

assets, cash, short-term securities, accounts receivables and inventories”. According to the definition of Bonneville (2023), “Any acquisition of funds which increases the current assets, increase working capital also for they are one and the same”. According to the definition of Shubin (2009), “Working Capital is the amount of funds necessary to cover the cost of operating the enterprises.” According to the definition of Genestenberg, “Circulating capital means current assets of a company that are changed in the ordinary course of business from one form to another, for example, from cash to inventories, inventories to receivables, receivables to cash.”

6.3 Importance of Working Capital

Working Capital is an essential part of the business concern. Every business concern must maintain certain amount of Working Capital for their day-to-day requirements and meet the short-term obligations.

Working Capital is needed for the following purposes.

1. **Purchase of raw materials and spares:** The basic part of manufacturing process is raw materials. It should purchase frequently according to the needs of the business concern. Hence, every business concern maintains certain amount as Working Capital to purchase raw materials, components, spares, etc.
2. **Payment of wages and salary:** The next part of Working Capital is payment of wages and salaries to labour and employees. Periodical payment facilities make employees perfect in their work. So, a business concern maintains adequate amount of working capital to make the payment of wages and salaries.
3. **Day-to-day expenses:** A business concern has to meet various expenditures regarding the operations for daily basis like fuel, power, office expenses, etc.
4. **Provide credit obligations:** A business concern is responsible to provide credit facilities to the customer and meet the short-term obligation. So, the business entity must provide adequate Working Capital.

6.4 Sources of Working Capital

Capital of the concern may be divided into two major headings.

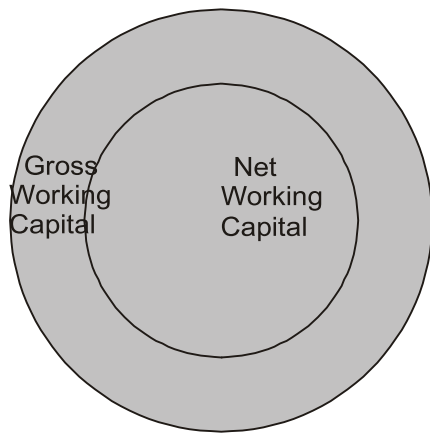


Fig. 10.2 Working Capital Concept

Gross Working Capital

Gross Working Capital is the general concept which determines the working capital concept. Thus, the gross working capital is the capital invested in total current assets of the business concern.

$$\boxed{\text{GWC} = \text{CA}}$$

Gross Working Capital is simply called as the total current assets of the concern.

Net Working Capital

Net Working Capital is the specific concept, which, considers both current assets and current liability of the concern.

Net Working Capital is the excess of current assets over the current liability of the concern during a particular period.

If the current assets exceed the current liabilities it is said to be positive working capital;

$$\boxed{\text{NWC} = \text{CA} - \text{CL}}$$

if it is reverse, it is said to be Negative working capital.

6.5 Concept of Working Capital

Working capital can be classified or understood with the help of the following two important

concepts.

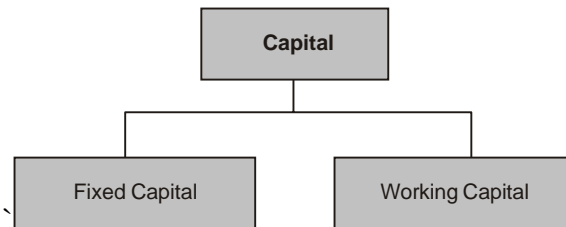


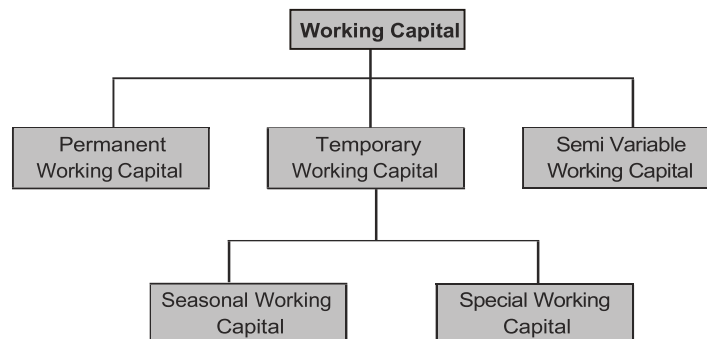
Fig. 6.1 Capital of the Business

Fixed capital means that capital, which is used for long-term investment of the business concern. For example, purchase of permanent assets. Normally it consists of non-recurring in nature.

Working Capital is another part of the capital which is needed for meeting day to day requirement of the business concern. For example, payment to creditors, salary paid to workers, purchase of raw materials etc., normally it consists of recurring in nature. It can be easily converted into cash. Hence, it is also known as short-term capital.

6.6 Types of Working Capital

Working Capital may be classified into three important types on the basis of time



Permanent Working Capital

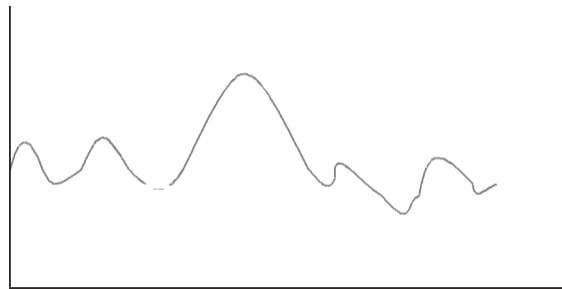
Fixed Working Capital is another name for it. It is capital; the company concern must constantly

maintain a minimum level of capital. The level of Permanent Capital depends upon the nature of the business. Permanent or Fixed Working Capital will not change irrespective of time or volume of sales.

Temporary Working Capital

It is also known as variable working capital. It is the amount of capital which is required to meet the cyclical demands and some special purposes. It can be further classified into Seasonal Working Capital and Special Working Capital.

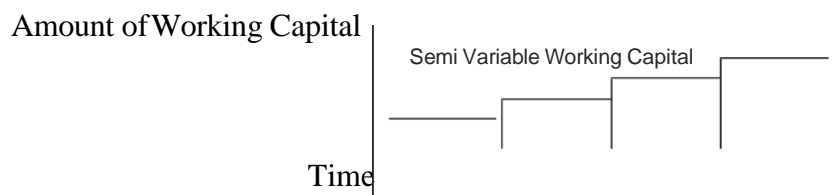
The capital required to meet the seasonal needs of the business concern is called as Seasonal Working Capital. The capital required to meet the special exigencies such as launching of extensive marketing campaigns for conducting research, etc.



Amount of Working Capital

Semi Variable Working Capital

Certain amount of Working Capital is in the field level up to a certain stage and after that it will increase depending upon the change of sales or time.



Semi Variable Working Capital

6.7 Working Capital Position/ Balanced Working Capital Position

A business concern must maintain a sound Working Capital position to improve the efficiency of business operation and efficient management of finance. Both excessive and inadequate Working Capital primes to some problems in the business concern.

A. Causes and effects of excessive working capital.

- (i) Excessive Working Capital leads to unnecessary accumulation of rawmaterials, components and spares.
- (ii) Excessive Working Capital results in locking up of excess Working Capital.
- (iii) It creates bad debts, reduces collection periods, etc.
- (iv) It leads to decrease of profits.

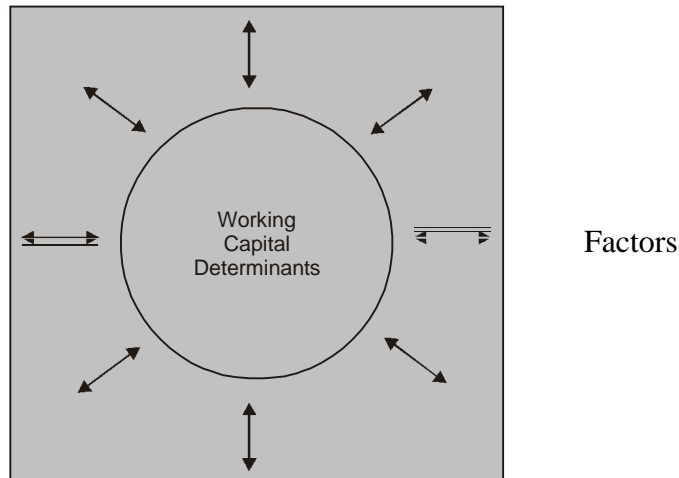
B. Causes and effects of inadequate working capital

- (i) Inadequate working capital cannot buy its requirements in bulk order.
- (ii) It becomes difficult to implement operating plans and activate the firm's profit target.
- (iii) It becomes impossible to utilize efficiently the fixed assets.
- (iv) The rate of return on investments also falls with the shortage of Working Capital.
- (v) It reduces the overall operation of the business.

6.8 Factors Determining Working Capital Requirements

Working Capital requirements depends upon various factors There are no set of rules or formula to determine the Working Capital needs of the business concern. The following are the major factors which are determining the Working Capital requirements.

Factors



Factors

Factors Determining Working Capital Requirements

1. **Nature of business:** Working Capital of the business concerns largely depend upon the nature of the business. If the business concerns follow rigid credit policy and sell goods only for cash, they can maintain lesser amount of Working Capital. A transport company maintains lesser amount of Working Capital while a construction company maintains larger amount of Working Capital.
2. **Production cycle:** Amount of Working Capital depends upon the length of the production cycle. If the production cycle length is small, they need to maintain lesser amount of Working Capital. If it is not, they have to maintain large amount of Working Capital.
3. **Business cycle:** Business fluctuations lead to cyclical and seasonal changes in the business condition and it will affect the requirements of the Working Capital. In the booming conditions, the Working Capital requirement is larger and in the depression condition, requirement of Working Capital will reduce. Better business results lead to increase in the Working Capital requirements.
4. **Production policy:** It is also one of the factors which affects the Working Capital requirement of the business concern. If the company maintains the unceasing production policy, there is a need of regular Working Capital. If the production policy of the company depends upon the situation or conditions, Working Capital requirement will depend upon the conditions laid down by the company.
5. **Credit policy:** Credit policy of sales and purchase also affect the Working Capital

requirements of the business concern. If the company maintains liberal credit policy to collect the payments from its customers, they have to maintain more Working Capital. If the company pays the dues on the last date it will create the cash maintenance in hand and bank.

6. **Growth and expansion:** During the growth and expansion of the business concern, Working Capital requirements are higher, because it needs some additional Working Capital and incurs some extra expenses at the initial stages.
7. **Availability of raw materials:** Major part of the Working Capital requirements are largely dependents on the availability of raw materials. Raw materials are the basic components of the production process. If the raw material is not readily available, it leads to production stoppage. So, the concern must maintain adequate raw material; for that purpose, they have to spend some amount of Working Capital.
8. **Earning capacity:** If the business concern consists of high level of earning capacity, they can generate more Working Capital, with the help of cash from operation. Earning capacity is also one of the factors which determines the Working Capital requirements of the business concern.

6.9 Computation (Or Estimation) of Working Capital

Working Capital requirement depends upon number of factors, which are already discussed in the previous parts. Now the discussion is on how to calculate the Working Capital needs of the business concern. It may also depend upon various factors but some of the common methods are used to estimate the Working Capital.

1. Estimation of components of working capital method

Working capital consists of various current assets and current liabilities. Hence, we have to estimate how much current assets such as inventories required and how much cash required to meet the short-term obligations.

Finance Manager first estimates the assets and required Working Capital for a particular period.

Percent of sales method

Based on the past experience between Sales and Working Capital requirements, a ratio can be

determined for estimating the Working Capital requirement in future. It is the simple and tradition method to estimate the Working Capital requirements. Under this method, first we have to find out the sales to Working Capital ratio and based on that we have to estimate Working Capital requirements. This method also expresses the relationship between the Sales and Working Capital.

Operating cycle

Working Capital requirements depend upon the operating cycle of the business. The operating cycle begins with the acquisition of raw material and ends with the collection of receivables.

Operating cycle consists of the following important stages:

1. Raw Material and Storage Stage, (R)
2. Work in Process Stage, (W)
3. Finished Goods Stage, (F)
4. Debtors Collection Stage, (D)
5. Creditors Payment Period Stage. (C)

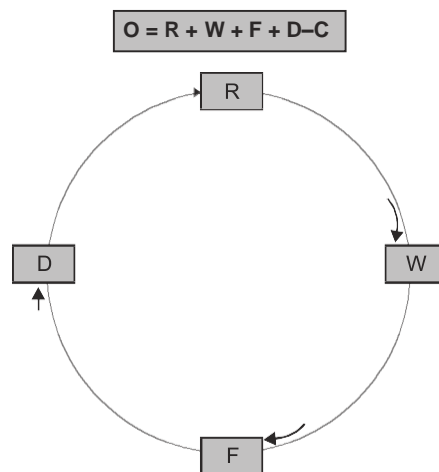


Fig. Working Capital Cycle

Each component of the operating cycle can be calculated by the following formula:

$$R = \frac{\text{Average Stock of Raw Material}}{\quad}$$

Average Raw Material Consumption Per Day

$$W = \frac{\text{Average Work in Process Inventory}}{\text{Average Cost of Production Per Day}}$$

$$F = \frac{\text{Average Finished Stock Inventory}}{\text{Average Cost of Goods Sold Per Day}}$$

$$D = \frac{\text{Average Book Debts}}{\text{Average Credit Sales Per Day}}$$

$$C = \frac{\text{Average Trade Creditors}}{\text{Average Credit Purchase Per Day}}$$

Ajileye Nigeria Ltd is a new manufacturing company that is to engage in the production of shoe soles and leather works.

The company's budget for its first year of operation is as shown below:

	₦	₦
Sales		3,600,000
Direct Materials	1,200,000	
Direct Labour	900,000	
Overheads	<u>600,000</u>	<u>(2,700,000)</u>
		<u>900,000</u>

You are given the following additional information.

1. Debtors - 40% will pay within 30 days of sales, the next 40% will pay within 45 days and the balance within 60 days.
2. Raw materials - will be in store for 36 days on average.
3. Work-in-progress - the production cycle will be 72 days.
4. Finished Goods - will be in store for 45 days on average.
5. Creditors - suppliers of raw materials will give credit of 27 days. Also, 60% of the overheads will be supplied on credit of 15 days.

Required:

- a. Calculate the amount of working capital required by the company.
- b. List the various methods of financing working capital.

Note: Assume 360 days in the year.

Solution

- (a) Working capital required by the company.

Debtors	=	₦	₦
40% of ₦3.6m x $\frac{30}{360}$	=	120,000	
20% of ₦3.6m x $\frac{45}{360}$	=	180,000	
20% of ₦3.6m x $\frac{60}{360}$	=	120,000	420,000
Raw Materials ₦1.2m x $\frac{36}{360}$	=		120,000
Work-in-Progress			
-Rm ₦1.2m x $\frac{72}{360}$	=	240,000	390,000
-Conversion ₦1.5m x $\frac{72}{360} \times 50\%$	=	150,000	390,000
Finished Goods N2.7m x $\frac{45}{360}$	=	337,500	
Creditors			
- Raw Materials N1.2m x $\frac{27}{360}$	=	90,000	
- Overheads 60% of N600,000 x $\frac{15}{360}$	=	15,000	<u>(105,000)</u>
		360	<u>1,162,500</u>

- (b) Methods of Financing Working Capital

1. Overdraft
2. Factoring
3. Franchising
4. Equity - Permanent Component of working capital
5. Acceptance credit
6. Retained earnings

7. Commercial papers

Illustration

Osogbo Breweries Limited is considering a change of its credit policy, which will result in a slowing down in the average collection period from one to two months. The relaxation in credit standards is expected to produce an increase in sales in each year amounting to 25% of the sales.

Sales price per unit	₦10
Variable cost per unit	₦8.50
Current sales per annum	₦2,400,000

The required rate of return on investment is 20%

Assume that the 25% increase in sales would result in additional stocks of N100,000 and additional creditors of N20,000.

Advise the company on whether or not to extend the credit period offered to customers, if:

- (a) all customers take the longer credit of 2 months;
- (b) existing customers do not change their payment habits, and only the new customers take a full 2 months' credit

Solution

Osogbo Breweries Limited

- (a) Contribution/Sales ratio = 15%

Increase in sales = 25% of ₦2,400,000 i.e. ₦600,000

Increase in contribution = 15% of ₦600,000 i.e. ₦90,000

	₦
New Debtors (2/12 x ₦3m)	500,000
Existing Debtors 1/12 x ₦2.4m	(200,000)
Increase in debtors	300,000
Increase in stocks	100,000
Increase in creditors	(20,000)
Net Investment in working capital	380,000
Return on additional working capital	$\frac{₦90,000}{₦380,000} \times 100 = 23.7\%$

₦380,000

The return on the additional working capital is worthwhile.

(b) Increase in sales	<u>₦600,000</u>
	₦
Increase in debtors $2/12 \times \text{₦}600,000 =$	100,000
Increase in stocks	100,000
Increase in creditors	<u>(20,000)</u>
Increase in additional working capital	<u>180,000</u>

Return on additional working capital $\frac{\text{₦}90,000}{\text{₦}180,000} \times 100 = 50\%$

Decision: In both cases (a) and (b) the additional investment in working capital is worthwhile.

Illustration

Benue Limited achieves a current sales level of ₦1,800,000 per annum. The cost of sales is 80% of this amount, but bad debts average 1% of total sales value, and the annual profit is:

	₦
Sales	1,800,000
Costs of sales	<u>1,440,000</u>
	360,000
Bad debt	(18,000)
Profit	342,000

The current debt collection is 1 month, and the management of Benue Limited considers that by easing credit terms, sales would be increased as follows:

	Present Policy	Proposed Option
Additional sales	-	25%
Average collection period	1 month	2 months
Bad debts (% of sales)	1%	3%

The company requires a 20% return on its investments. If the costs of sales are 75% variable and 25% fixed, and on the assumptions that:

- (a) There will be no increase in fixed costs from the extra turnover;
- (b) There would be no increase in average stocks or creditors;

What is the preferable policy ± proposed option, or the present policy?

Solution

	Proposed Option
	<u>₦</u>
Additional sales (25% of ₦ 1.8m)	450,000
Less: Variable costs (60% of ₦ 450,000)	<u>(270,000)</u>
	180,000
Less: Additional bad debt	
(₦67,500-₦18,000)	(49,500)
Less: Cost of finance	
20% x N225,000	<u>(45,000)</u>
Additional Profit	<u>85,500</u>

Recommendation: Proposed option is better as profit will increase by ~~₦~~85,500.

Notes

1. Present sales = ₦1,800,000
2. Additional sales 25% of ~~₦~~1.8m = ~~₦~~450,000
3. New Bad debts 3% of ~~₦~~2.25m = ~~₦~~67,500
4. Present Bad debts 1% of ~~₦~~1.8m = ~~₦~~18,000
5. Percentage of variable cost to sales
 $\frac{\underline{\text{₦1,440,000}}}{\text{₦1,800,000}} \times 75\% = 60\%$
6. Present Investment in working capital
 Debtors $\frac{1}{12} \times \text{₦1.8m} = \text{₦150,000}$
7. New Investment in working capital
 Debtors $\frac{2}{12} \times \text{₦2.25m} = \text{₦375,000}$
8. Additional Debtors = ~~₦~~225,000
 i.e. ~~₦375,000-₦150,000~~

6.10 Factors Affecting the Amount of Investment in Working Capital

- (a) Production cycle
- (b) Nature of business
- (c) Size of business
- (d) Business fluctuations
- (e) Credit policy
- (f) Availability of credit
- (g) Dividend policy
- (h) Operating efficiency
- (i) Price changes

6.11 Sources of Working Capital Finance

- (i) Equity
- (ii) Bank overdraft
- (iii) Creditors
- (iv) Taxation
- (v) Factoring
- (vi) Invoice discounting
- (vii) Loans etc

Other Sources of Working Capital

Capital requirement can be normalized from short-term and long-term sources. Each source will have both merits and limitations up to certain extent. Uses of Working Capital may be differing from stage to stage.

The above sources are also classified into internal sources and external sources of working capital.

Internal sources such as:

- Retained Earnings
- Reserve and Surplus
- Depreciation Funds etc.

External sources such as:

- Debentures and Public Deposits

- Loans from Banks and Financial Institutions
- Advances and Credit
- Financial arrangements like Factoring, etc.

Determining the Finance Mix

Determining the finance mix is an important part of working capital management. Under this decision, the relationship among risk, return and liquidity are measured and also which type of financing is suitable to meet the Working Capital requirements of the business concern. There are three basic approaches for determining an appropriate Working Capital finance mix.

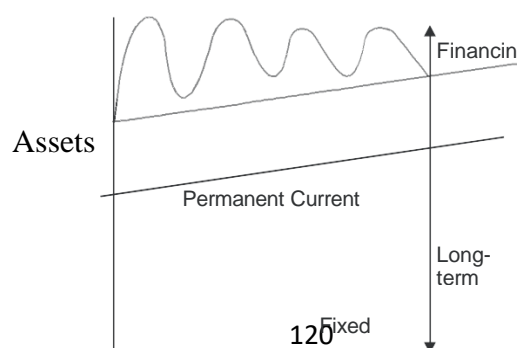
1. Hedging or matching approach
2. Conservative approach
3. Aggressive approach.

Hedging Approach

Hedging approach is also known as matching approach. Under this approach, the business concern can adopt a financial plan which matches the expected life of assets with the expected life of the sources of funds raised to finance assets.

When the business follows matching approach, long-term finance shall be used to fixed assets and permanent current assets and short-term financing to finance temporary or variable assets.

Temporary Current Assets Short-term



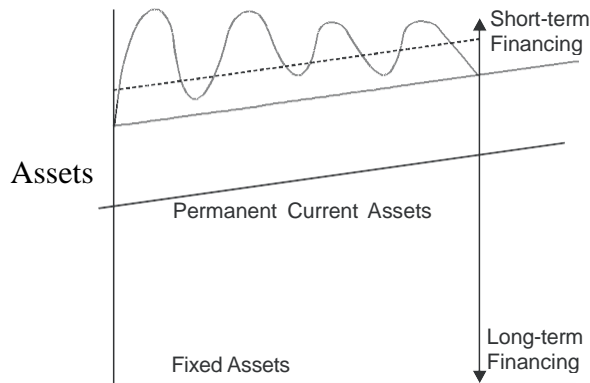
Time

Fig. Financing under Matching Approach

Conservative Approach

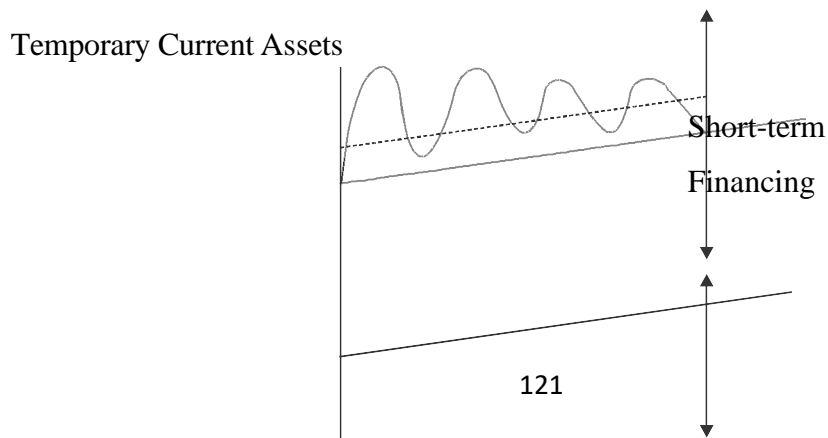
Under this approach, the entire estimated finance in current assets should be financed from long-term sources and the short-term sources should be used only for emergency requirements. This approach is called as “Low Profit – Low Risk” concept.

Temporary Current Assets



Aggressive Approach

Under this approach, the entire estimated requirement of current assets should be financed from short-term sources and even a part of fixed assets financing be financed from short-term sources. This approach makes the finance mix more risky, less costly and more profitable.



6.12 Working Capital Management Policy

Working Capital Management formulates policies to manage and handle efficiently; for that purpose, the management established three policies based on the relationship between Sales and Working Capital:

1. Conservative Working Capital Policy.
2. Moderate Working Capital Policy.
3. Aggressive Working Capital Policy.

Conservative working capital policy:

Conservative Working Capital Policy refers to minimize risk by maintaining a higher level of Working Capital. This type of Working Capital Policy is suitable to meet the seasonal fluctuation of the manufacturing operation.

Moderate working capital policy:

Moderate Working Capital Policy refers to the moderate level of Working Capital maintenance according to moderate level of sales. It means one percent of change in Working Capital, that is Working Capital is equal to sales.

Aggressive working capital policy:

Aggressive Working Capital Policy is one of the high risky and profitability policies which maintains low level of Aggressive Working Capital against the high level of sales, in the business concern during a particular period.

Summary

Working capital and working capital management is a strong financial tool that assist the manager to perform well in their areas of functions. This chapter made it clear to the reader why it is not advisable to over-stock or under-stock. It also made it clear to the reader to understand the components of working capital.

Practice Questions

Multiple Choice Questions

1. What is working capital management
 - A. Managing the total assets of a company.
 - B. Managing the total liability of a company.

- C. **Managing the difference between current assets and current liabilities.**
- D. Managing the difference between long term assets and long-term liabilities.
2. The importance of effective working capital management for a business include all except.....
- A. It helps to determine the profitability of a business.
- B. It ensures smooth day to day operations.
- C. **It is used to finance long term investment projects.**
- D. It helps to attract investors and secure loans.
3. How can a company optimize its working capital management?
- A. By increasing sales and revenue.
- B. By reducing expenses and costs.
- C. **By managing inventory and accounts receivables efficiently.**
- D. By investing in long term assets.
4. What is cash conversion cash cycle?
- A. The time it takes for a company to convert inventory into cash
- B. The times it takes for a company to convert accounts receivables into cash
- C. The time it takes for a company to convert account payables into cash
- D. **The time it takes for a company to convert all current assets into cash**
5. The maintenance of higher level of Working Capital to minimize risk id known as.....
- A. **Conservative Working Capital**
- B. Aggressive Working Capital
- C. Moderate Working Capital
- D. Influence Working Capital
6. The amount of capital which is required to meet the seasonal demands and some special purposes is described as.....
- A. permanent working capital
- B. fixed Working Capital
- C. variable Working Capital
- D. **special working capital**
7. What is the formula to calculate return on working capital?
- A. $\frac{\text{net profit}}{\text{working capital}}$
- B. $\frac{\text{current assets}}{\text{current liabilities}}$
- C. $\frac{\text{total assets}}{\text{total liabilities}}$

- D. $\frac{\text{gross profit}}{\text{operating expenses}}$
8. The benefits of efficient working capital management are itemized below:
except.....
- A. increased profitability and return on investment
 - B. improved cashflow and liquidity
 - C. low financial stability**
 - D. reduced risk
9. The difference between total assets and liabilities is defined.....
- A. Working capital
 - B. Net assets**
 - C. Loose capital
 - D. Fluctuating assets
10. What is the formula to calculate current ratio?
- A. $\frac{\text{net profit}}{\text{working capital}}$
 - B. $\frac{\text{current assets} - \text{current liabilities}}{\text{current liabilities}}$**
 - C. $\frac{\text{total assets}}{\text{total liabilities}}$
 - D. $\frac{\text{gross profit}}{\text{operating expenses}}$

Theoretical Questions

1. Describe the concept of Working Capital
2. State six importance of Working Capital
3. Describe any five sources of Working Capital

4. Differentiate between gross working capital and net working capital
5. Discuss the two Types Working Capital
6. Explain any five factors that determine Working Capital Requirements
7. Describe the methods of financing Working Capital Requirements

CHAPTER 7
CAPITAL STRUCTURE

Learning Objectives

After studying this chapter, you should be able to:

1. Understand the Meaning, Objectives, and Importance of Capital Structure
2. Explain the Types, Features, Elements and Determinants of Capital Structure
3. Identify the Factors determining Capital Structure and understand their Implications
4. Compare and Contrast the various theories of Capital Structure and
5. Formulate an Optimal Capital Structure for your Firm

7.1 Introduction

Capital is the major part of all kinds of business activities, which are determined by the size, and nature of the business concern. Capital may be raised with the help of various sources. If the company maintains proper and adequate level of capital, it will earn high and they can provide more dividends to its shareholders

7.2 Meaning of Capital Structure

Capital structure refers to the kind of securities and the proportionate amount that make up capitalization. It is the mix of different sources of long-term sources of funds such as equity shares, debentures, long-term loans and retained profits. The term capital structure therefore refers to the relationship between the various long-term sources such as equity capital, preference share capital and debt capital. Deciding the suitable capital structure is the important decision of financial management because it closely related to the value of the firm. Capital structure is the combination of capitals from different sources of finance. The capital of a company consists of equity holders fund, preference share capital and long-term external debts. The source and quantum of capital is decided keeping in mind following factors:

1. **Control:** capital structure should be designed in such a manner that existing shareholders continue to hold majority stack.
2. **Risk:** capital structure should be designed in such a manner that financial risk of the company does not increase beyond tolerable limit.
3. **Cost:** overall cost of capital remains minimum.

Practically it is difficult to achieve all of the above three goals together hence a finance manager has to make a balance among these three objectives.

However, the objective of a company is to maximise the value of the company and its prime objective while deciding the optimal capital structure. Capital Structure decision refers to deciding the forms of financing (which sources to be tapped); their actual requirements (amount to be funded) and their relative proportions (mix) in total capitalisation.

$$\text{Value of the firm} = \frac{\text{EBIT}}{\text{Overall cost of capital / Weighted average cost of capital}}$$

$$K_o = (\text{Cost of debt} \times \text{weight of debt}) + (\text{Cost of equity} \times \text{weight of equity})$$

$$K_o = \left\{ \frac{K_d \times D}{D+S} \right\} + \left\{ \frac{K_e \times S}{D+S} \right\}$$

Where:

- ◆ K_o is the weighted average cost of capital (WACC)
- ◆ K_d is the cost of debt
- ◆ D is the market value of debt
- ◆ S is the market value of equity
- ◆ K_e is the cost of equity

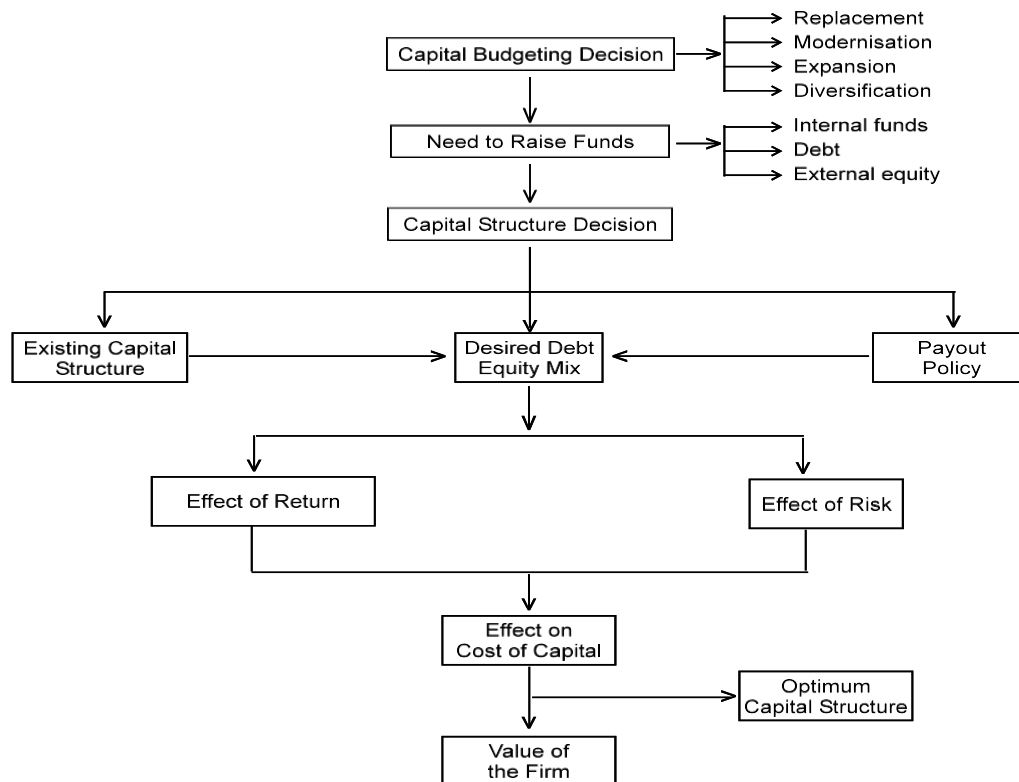
Capital structure decision will decide weight of debt and equity and ultimately overall cost of capital as well as Value of the firm. So capital structure is relevant in maximizing value of the firm and minimizing overall cost of capital.

Whenever funds are to be raised to finance investments, capital structure decision is involved. A demand for raising funds generates a new capital structure since a decision has to be made as to the quantity and forms of financing. The process of financing or capital structure decision is depicted in the figure below:

7.3 Capital Structure Theories

The following approaches explain the relationship between cost of capital, capital structure and value of the firm:

- (a) Net Income (NI) approach
- (b) Traditional approach.
- (c) Net Operating Income (NOI) approach
- (d) Modigliani-Miller (MM) approach

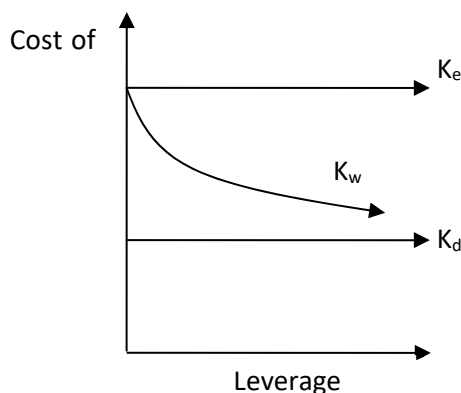


However, the following assumptions are made to understand this relationship.

- ◆ There are only two kinds of funds used by a firm i.e. debt and equity.
- ◆ The total assets of the firm are given. The degree of average can be changed by selling debt to purchase shares or selling shares to retire debt.
- ◆ Taxes are not considered.
- ◆ The payout ratio is 100%.
- ◆ The firm's total financing remains constant.
- ◆ Business risk is constant over time.
- ◆ The firm has perpetual life.

Net Income (NI) Approach

According to this approach, capital structure decision is **relevant** to the value of the firm. An increase in financial leverage will lead to decline in the weighted average cost of capital (WACC), while the value of the firm as well as market price of ordinary share will increase. Conversely, a decrease in the leverage will cause an increase in the overall cost of capital and a consequent decline in the value as well as market price of equity shares.



From the above diagram, K_e and K_d are assumed not to change with leverage. As debt increases, it causes weighted average cost of capital (WACC) to decrease.

The value of the firm on the basis of Net Income Approach can be ascertained as follows:

$$\text{Value of Firm (V)} = S + D$$

Where,

V = Value of the firm

S Market value of equity
D = Market value of debt

$$\text{Market value of equity (S)} = \frac{\text{NI}}{K_e}$$

Where,

NI = Earnings available for equity shareholders

K_e = Equity Capitalisation rate

Under, NI approach, the value of the firm will be maximum at a point where weighted average cost of capital (WACC) is minimum. Thus, the theory suggests total or maximum possible debt financing for minimising the cost of capital. The overall cost of capital under this approach is:

$$\text{Overall cost of capital} = \frac{\text{EBIT}}{\text{Value of the firm}}$$

Thus, according to this approach, the firm can increase its total value by decreasing its overall cost of capital through increasing the degree of leverage. The significant conclusion of this approach is that it pleads for the firm to employ as much debt as possible to maximise its value.

Illustration 1 Rupa Ltd.'s EBIT is N500,000. The company has 10%, 20 lakh debentures. The equity capitalization rate i.e. K_e is 16%.

You are required to CALCULATE:

1. Market value of equity and value of firm
2. Overall cost of capital.

Solution

Statement showing value of firm

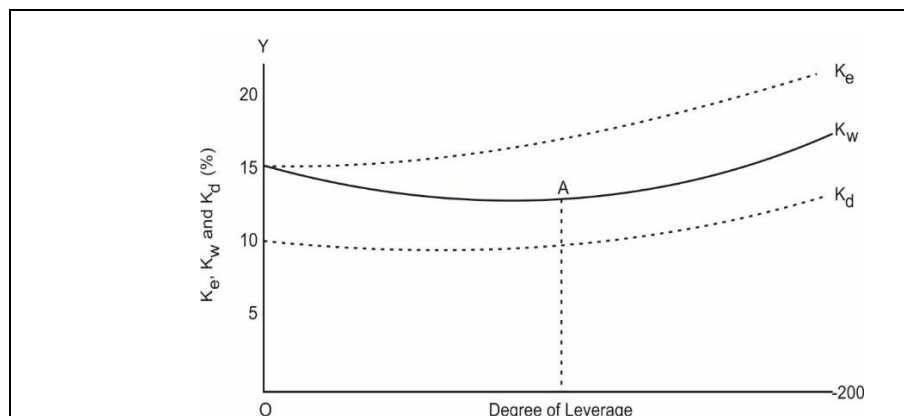
EBIT	500,000
<i>Less:</i> Interest on debentures (10% of N2,000,000)	(200,000)
Earnings available for equity holders i.e. Net Income (NI)	300,000
Equity capitalization rate (K_e)	16%
Market value of equity (S) $\frac{\text{NI} \times 100}{K_e} = \frac{3,00,000 \times 100}{16.00}$	1,875,000
Market value of debt (D)	2,000,000
Total value of firm $V = S + D$	3,875,000

Traditional Approach

This approach favours that as a result of financial leverage up to some point, cost of capital comes down and value of firm increases. However, beyond that point, reverse trends emerge. The principle implication of this approach is that the cost of capital is dependent on the capital structure and there is an optimal capital structure which minimises cost of capital.

Under this approach:

- The rate of interest on debt remains constant for a certain period and thereafter with an increase in leverage, it increases.
- The expected rate by equity shareholders remains constant or increase gradually. After that, the equity shareholders start perceiving a financial risk and then from the optimal point and the expected rate increases speedily.
- As a result of the activity of rate of interest and expected rate of return, the WACC first decreases and then increases. The lowest point on the curve is optimal capital structure.



Optimum capital structure occurs at the point where value of the firm is highest and the cost of capital is the lowest.

According to net operating income approach, capital structure decisions are totally irrelevant. Modigliani-Miller supports the net operating income approach but provides behavioural justification. The traditional approach strikes a balance between these extremes.

Main Highlight of Traditional Approach

Determine the optimal capital structure of a company from the following information:

<i>Options</i>	<i>Cost of Debt (Kd) in %</i>	<i>Cost of Equity (Ke) in %</i>	<i>Percentage of Debt on total value (Debt +Equity)</i>
1	11	13.0	0.0
2	11	13.0	0.1
3	11.6	14.0	0.2
4	12.0	15.0	0.3
5	13.0	16.0	0.4
6	15.0	18.0	0.5
7	18.0	20.0	0.6

Solution

Note that the ratio given in this question is not debt to equity ratio. Rather than it is the debt to value ratio. Therefore, if the ratio is 0.6, it means that capital employed comprises 60% debt and 40% equity.

In this question total of weight is equal to 1 in all cases, hence we need not to divide by it.

- 1) $K_0 = 11\% \times 0 + 13\% \times 1 = 13\%$
- 2) $K_0 = 11\% \times 0.1 + 13\% \times 0.9 = 12.8\%$
- 3) $K_0 = 11.6\% \times 0.2 + 14\% \times 0.8 = 13.52\%$
- 4) $K_0 = 12\% \times 0.3 + 15\% \times 0.7 = 14.1\%$
- 5) $K_0 = 13\% \times 0.4 + 16\% \times 0.6 = 14.8\%$
- 6) $K_0 = 15\% \times 0.5 + 18\% \times 0.5 = 16.5\%$
- 7) $K_0 = 18\% \times 0.6 + 20\% \times 0.4 = 18.8\%$

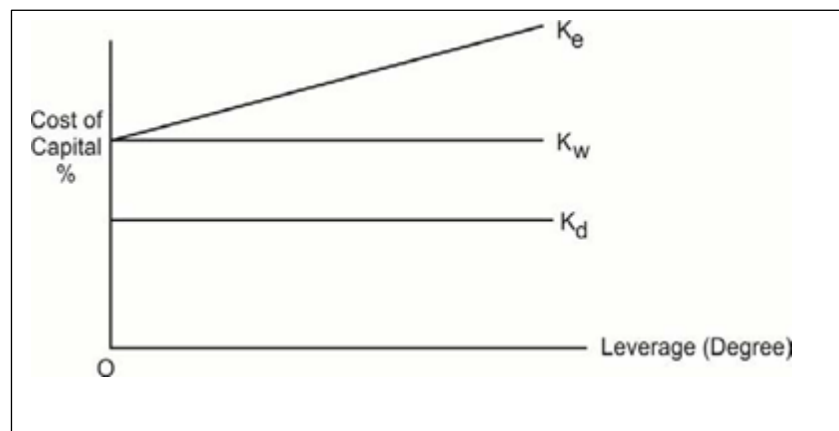
Decision: 2nd option is the best because it has lowest WACC.

Net Operating Income Approach (NOI)

NOI means earnings before interest and tax (EBIT). According to this approach, capital structure decisions of the firm are **irrelevant**.

Any change in the leverage will not lead to any change in the total value of the firm and the market price of shares, as the overall cost of capital is independent of the degree of leverage. As a result, the division between debt and equity is irrelevant.

As per this approach, an increase in the use of debt which is apparently cheaper is an offset by an increase in the equity capitalisation rate. This happens because equity investors seek higher compensation as they are opposed to greater risk due to the existence of fixed return securities in the capital structure.



The above diagram shows that K_o (Overall capitalisation rate) and (debt – capitalisation rate) are constant and K_e (Cost of equity) increases with leverage.

Illustration 4

Bella Ltd's operating income (EBIT) is N500,000. The firm's cost of debt is 10% and currently the firm employs N1,500,000 of debt. The overall cost of capital of the firm is 15%.

You are required to CALCULATE:

Total value of the firm.

Cost of equity.

Solution

Statement showing value of the firm

Net operating income/EBIT	500,000
Less: Interest on debentures (10% of N1,500,000)	(150,000)
Earnings available for equity holders	3,50,000
Total cost of capital (K0) (given)	15%
Value of the firm $V = \frac{\text{EBIT}}{k_0} = \frac{\text{N}500,000}{0.15}$	3,333,333

Calculation of cost of equity

Market value of debt (D)	1,500,000
Market value of equity (s) $S = V - D = \text{N}3,333,333 - \text{N}1,500,000$	1,833,333

$$K_e = \frac{\text{Earnings available for equity holders}}{\text{Value of equity}(S)}$$

Market value of equity N1,833,333

Modigliani-Miller Approach (MM)

The NOI approach is definitional or conceptual and lacks behavioural significance. It does not provide operational justification for irrelevance of capital structure. However, Modigliani-Miller approach provides behavioural justification for constant overall cost of capital and therefore, total value of the firm. This approach describes, in a perfect capital market where there is no transaction cost and no taxes, the value and cost of capital of a company remain unchanged irrespective of change in the capital structure. The approach is based on further additional assumptions like:

- a. Capital markets are perfect. All information is freely available and there are no transaction costs.
- b. All investors are rational.
- c. Firms can be grouped into 'Equivalent risk classes' based on their business

risk.

d. Non-existence of corporate taxes.

Based on the above assumptions, Modigliani-Miller derived the following three propositions:

Total market value of a firm is equal to its expected net operating income divided by the discount rate appropriate to its risk class decided by the market.

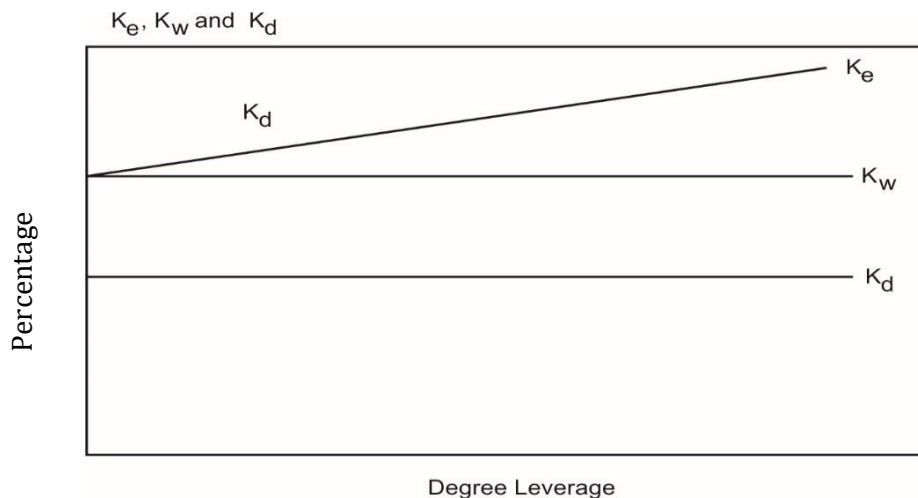
Value of levered firm (V_L) = Value of unlevered firm (V_U)

$$\text{Value of a firm} = \frac{\text{Net Operating Income (NOI)}}{K_0}$$

1. A firm having debt in capital structure has higher cost of equity than an unlevered firm. The cost of equity will include risk premium for the financial risk. The cost of equity in a levered firm is determined as under:

$$K_e = K_0 + (K_0 - K_d) \frac{\text{Debt}}{\text{Equity}}$$

2. The structure of the capital (financial leverage) does not affect the overall cost of capital. The cost of capital is only affected by the business risk.



It is evident from the above diagram that the average cost of the capital (K_0) is a constant and not affected by leverage.

The operational justification of Modigliani-Miller hypothesis is explained through the functioning of the arbitrage process and substitution of corporate leverage by personal leverage. Arbitrage refers to buying asset or security at lower price in one market and selling it at a higher price in another market. As a result, equilibrium is attained in different markets. This is illustrated by taking two identical firms of which one has debt in the capital structure while the other does not. Investors of the firm whose value is higher will sell their shares and instead buy the shares

of the firm whose value is lower. They will be able to earn the same return at lower outlay with the same perceived risk or lower risk. They would, therefore, be better off.

The value of the levered firm can neither be greater nor lower than that of an unlevered firm according to this approach. The two must be equal. There is neither advantage nor disadvantage in using debt in the firm's capital structure.

The approach considers capital structure of a firm as a whole pie divided into equity, debt and other securities. No matter how the capital structure of a firm is divided (among debt, equity etc.), there is a conservation of investment value. Since the total investment value of a corporation depends upon its underlying profitability and risk, it is invariant with respect to relative changes in the firm's financial capitalisation.

According to MM, since the sum of the parts must equal the whole, therefore, regardless of the financing mix, the total value of the firm stays the same.

The shortcoming of this approach is that the arbitrage process as suggested by Modigliani-Miller will fail to work because of imperfections in capital market, existence of transaction cost and presence of corporate income taxes.

In 1963, MM model was amended by incorporating tax, they recognised that the value of the firm will increase, or cost of capital will decrease where corporate taxes exist. As a result, there will be some difference in the earnings of equity and debt-holders in levered and unlevered firm and value of levered firm will be greater than the value of unlevered firm by an amount equal to amount of debt multiplied by corporate tax rate.

MM has developed the formulae for computation of cost of capital (K_0), cost of

(i) Value of a levered company = Value of an unlevered company + Tax benefit

Or,
$$V_g = V_u + TB$$

(ii) Cost of equity in a levered company (K_{eg}) = $K_{eu} + (K_{eu} - K_d) \frac{\text{Debt}}{\text{Debit + Equity}}$

equity (K_e) for the levered firm.

Where,

K_{eg} = Cost of equity in a levered company

K_{eu} = Cost of equity in an

unlevered company K_d = Cost of debt
 t = Tax rate

(iii) WACC in a levered company $(K_{og}) = K_{eu}(1-tL)$

Where,

K_{og} = WACC of a levered company

K_{eu} = Cost of equity in an unlevered company
 t = Tax rate

L =

Illustration 6:

There are two companies N Ltd. and M Ltd., having same earnings before interest and taxes i.e. EBIT of N20,000. M Ltd. is a levered company having a debt of N100,000@ 7% rate of interest. The cost of equity of N Ltd. is 10% and of M Ltd. is 11.50%.

Compute how arbitrage process will be carried on?

Solution

	Company	
	M Ltd.	N Ltd.
EBIT (NOI)	20,000	20,000
Debt (D)	100,000	---
K_e	11.50%	10%
K_d	7%	---

The Trade-Off Theory

The trade-off theory of capital structure refers to the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. Trade-off theory of capital structure basically entails offsetting the costs of debt against the benefits of debt.

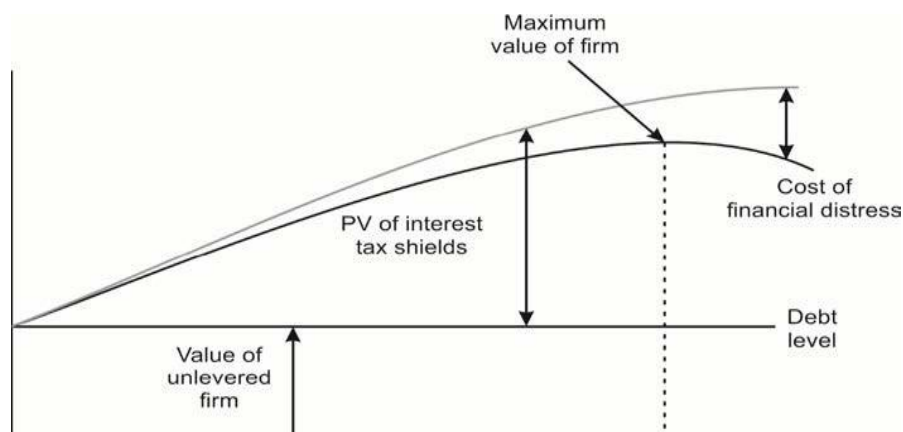
Trade-off theory of capital structure primarily deals with the two concepts - cost of financial distress and agency costs. An important purpose of the trade-off theory of capital structure is to explain the fact that corporations usually are financed partly with debt and partly with equity.

It states that there is an advantage to financing with debt, the tax benefits of debt and there is a cost of financing with debt, the costs of financial distress including bankruptcy costs of debt and non-bankruptcy costs (e.g. staff leaving, suppliers demanding disadvantageous payment terms, bondholder/ stockholder infighting, etc). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. Modigliani and Miller in 1963 introduced the tax benefit of debt. Later work led to an optimal capital structure which is given by the trade-off theory.

According to Modigliani and Miller, the attractiveness of debt decreases with the personal tax on the interest income. A firm experiences financial distress when the firm is unable to cope with the debt holders' obligations. If the firm continues to fail in making payments to the debt holders, the firm can even be insolvent.

The first element of Trade-off theory of capital structure, considered as the cost of debt is usually the financial distress costs or bankruptcy costs of debt.

The **direct cost of financial distress** refers to the cost of insolvency of a company. Once the proceedings of insolvency start, the assets of the firm may be needed to be sold at **distress price**, which is generally much lower than the current values of the assets. A huge amount of administrative and **legal costs** is also associated with the insolvency. Even if the company is not insolvent, the financial distress of the company may include a number of **indirect costs** like - cost of employees, cost of customers, cost of suppliers, cost of investors, cost of managers and cost of shareholders



The firms may often experience a dispute of interests among the management of the firm, debt holders and shareholders. These disputes generally give birth to agency problems that in turn give rise to the agency costs.

The agency costs may affect the capital structure of a firm. There may be two types of conflicts - shareholders-managers conflict and shareholders-debt holders' conflict. The introduction of a dynamic Trade-off theory of capital structure makes the predictions of this theory a lot more accurate and reflective of that in practice. As the Debt-equity ratio (i.e. leverage) increases, there is a trade-off between the interest tax shield and bankruptcy, causing an optimum capital structure.

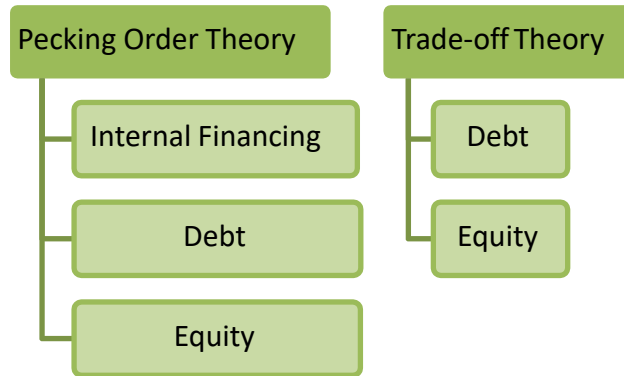
Pecking Order Theory

This theory is based on Asymmetric information, which refers to a situation in which different parties have different information. In a firm, managers will have better information than investors. This theory states that firms prefer to issue debt when they are positive about future earnings. Equity is issued when they are doubtful and internal finance is insufficient. The pecking order theory argues that the capital structure decision is affected by manager's choice of a source of capital that gives higher priority to sources that reveal the least amount of information.

Myres has given the name 'PECKING ORDER' theory as here is no well-defined debt- equity target and there are two kind of equity internal and external. Now Debt is cheaper than both internal and external equity because of interest. Further internal equity is less than external equity particularly because of no transaction/issue cost, no tax etc.

Pecking order theory suggests that managers may use various sources for raising of fund in the **following order**.

- a. Managers first choice is to use **internal finance**
- b. In absence of internal finance, they can use secured **debt**, unsecured debt, hybrid debt etc.
- c. Managers may issue new **equity** shares as a last option.



7.4 Factors Determining Capital Structure

Choice of source of funds

A firm has the choice to raise funds for financing its investment proposals from different sources in different proportions. It can:

- Exclusively use debt (in case of existing company), or
- Exclusively use equity capital, or
- Exclusively use preference share capital (in case of existing company), or
- Use a combination of debt and equity in different proportions, or
- Use a combination of debt, equity and preference capital in different proportions, or
- Use a combination of debt and preference capital in different proportion (in case of existing company).

The choice of the combination of these sources is called capital structure mix. But the question is which of the pattern should the firm choose.

7.5 Factors Affecting Capital Structure

While choosing a suitable financing pattern, certain fundamental principles should be kept in mind, to design capital structure, which are discussed below:

1. **Financial leverage of Trading on Equity:** The use of long-term fixed interest-bearing debt

and preference share capital along with equity share capital is called financial leverage or trading on equity. The use of long-term debt increases the earnings per share if the firm yields a return higher than the cost of debt. The earnings per share also increase with the use of preference share capital but due to the fact that interest is allowed to be deducted while computing tax, the leverage impact of debt is much more. However, leverage can operate adversely also if the rate of interest on long-term loan is more than the expected rate of earnings of the firm. Therefore, it needs caution to plan the capital structure of a firm.

2. **Growth and stability of sales:** The capital structure of a firm is highly influenced by the growth and stability of its sale. If the sales of a firm are expected to remain fairly stable, it can raise a higher level of debt. Stability of sales ensures that the firm will not face any difficulty in meeting its fixed commitments of interest repayments of debt. Similarly, the rate of the growth in sales also affects the capital structure decision. Usually, greater the rate of growth of sales, greater can be the use of debt in the financing of firm. On the other hand, if the sales of a firm are highly fluctuating or declining, it should not employ, as far as possible, debt financing in its capital structure.
3. **Cost Principle:** According to this principle, an ideal pattern or capital structure is one that minimises cost of capital structure and maximises earnings per share (EPS). For e.g. Debt capital is cheaper than equity capital from the point of its cost and interest being deductible for income tax purpose, whereas no such deduction is allowed for dividends.
4. **Risk Principle:** According to this principle, reliance is placed more on common equity for financing capital requirements than excessive use of debt. Use of more and more debt means higher commitment in form of interest payout. This would lead to erosion of shareholders' value in unfavourable business situation. With increase in amount of Debt, financial risk increases and vice versa.
5. **Control Principle:** While designing a capital structure, the finance manager may also keep in mind that existing management control and ownership remains undisturbed. Issue of new equity will dilute existing control pattern and also it involves higher cost. Issue of more debt causes no dilution in-control but causes a higher degree of financial risk.
6. **Flexibility Principle:** By flexibility it means that the management chooses such a combination of sources of financing which it finds easier to adjust according to changes in need of funds in future too. While debt could be interchanged (If the company is loaded with a debt of 18% and funds are available at 15%, it can return old debt with new debt,

at a lesser interest rate), but the same option may not be available in case of equity investment.

7. **Other Considerations:** Beside the above principles, other factors such as nature of industry, timing of issue and competition in the industry should also be considered. Industries facing severe competition also resort to more equity than debt.

Thus, a finance manager in designing a suitable pattern of capital structure must bring about satisfactory compromise between the above principles. The compromise can be reached by assigning weights to these principles in terms of various characteristics of the company.

7.6 Optimal Capital Structure

Objective of financial management is to maximize wealth. Therefore, the manager should choose a capital structure which maximizes wealth. For this purpose, the following analysis should be done:

1. **EBIT-EPS-MPS Analysis:** select a capital structure which maximizes market price per share. For that, start with same EBIT for all capital structures and calculate EPS. Thereafter either multiply EPS by price earning ratio or divide it by cost of equity to arrive at MPS.
2. **Indifference Point Analysis:** in the above analysis, we have considered value at a given EBIT only. What will happen if EBIT changes? Will it change your decision also? To answer this question, you can do indifference point analysis.
3. **Financial Break-Even Point Analysis:** With change in capital structure, financial risk also changes. Though this risk has already been considered in PE ratio or in cost of equity in point one above, but one may calculate and consider it separately also by calculating financial BEP.

EBIT-EPS-MPS Analysis

Relationship between EBIT - EPS-MPS

The basic objective of financial management is to design an appropriate capital structure which can provide the highest wealth, i.e., highest MPS, which in turn depends on EPS.

Given a level of EBIT, EPS will be different under different financing mix depending upon the

extent of debt financing. The effect of leverage on the EPS emerges because of the existence of fixed financial charge i.e., interest on debt financial fixed dividend on preference share capital. The effect of fixed financial charge on the EPS depends upon the relationship between the rate of return on assets and the rate of fixed charge.

If the rate of return on assets is higher than the cost of financing, then the increasing use of fixed charge financing (i.e., debt and preference share capital) will result in increase in the EPS. This situation is also known as favourable financial leverage or Trading on Equity. On the other hand, if the rate of return on assets is less than the cost of financing, then the effect may be negative and, therefore, the increasing use of debt and preference share capital may reduce the EPS of the firm.

The fixed financial charge financing may further be examined with reference to the choice between the debt financing and the issue of preference shares. Theoretically, the choice is tilted in favour of debt financing for two reasons:

- i. the explicit cost of debt financing i.e., the rate of interest payable on debt instruments or loans is generally lower than the rate of fixed dividend payable on preference shares, and
- ii. interest on debt financing is tax-deductible and therefore the real cost (after-tax) is lower than the cost of preference share capital.

Thus, the analysis of the different types of capital structure and the effect of leverage on the expected EPS and eventually MPS will provide a useful guide to selection of a particular level of debt financing. The EBIT-EPS analysis is of significant importance and if undertaken properly, can be an effective tool in the hands of a financial manager to get an insight into the planning and designing of the capital structure of the firm.

Summary

- ◆ **Capital Structure:** Capital structure refers to the mix of a firm's capitalisation (i.e. mix of long-term sources of funds such as debentures, preference share capital, equity share capital and retained earnings for meeting total capital requirement). While choosing a suitable financing pattern, certain factors like cost, risk, control, flexibility and other considerations like nature of industry,

competition in the industry etc. should be considered

- ◆ **Capital Structure Theories:** The following approaches explain the relationship between cost of capital, capital structure and value of the firm: Net income approach, Net operating income approach, Modigliani-Miller approach, Traditional approach

This is a capital expenditure decision, which this chapter has been able to discuss extensively. It aids the reader to understand what to perform before decision to embark on any business and their interest. It discussed the factors that determined the profitability and viability of any project before the execution.

Practice Questions

Multiple Choice Questions

1. Under Net Income approach; An increase in financial leverage will lead to_
 - A. Increase in WACC
 - B. Decrease in WACC**
 - C. Increase in cost of equity
 - D. Decrease in cost of equity

2. Under, Net Income approach, the value of the firm will be maximum at a point where WACC is

- A. **Minimum**
- B. Maximum
- C. Constant
- D. None of the above

Using Net Income approach, use the below information to answer question 3-5.

GREAT Ltd.s EBIT is N500,000. The company has 10%, N2,000,000 debentures. The equity capitalization rate i.e. Ke is 16%.

3. What is the market value of equity for the firm

- A. **N3,000,000**
- B. N1,875,000
- C. N3,875,000
- D. N3,125,000

4. What will be the Value of the firm

- A. N3,125,000
- B. **N3,875,000**
- C. N2,500,000
- D. N1,875,000

5. What will be the overall cost of capital rate

- A. 12%
- B. 26.67%
- C. **12.9%**
- D. 25%

6. The following are the factors affecting capital structure EXCEPT.....

- A. Financial leverage
- B. Cost of capital
- C. Growth and stability of sales
- D. **Investment in stock**

7. The assumptions of Modigliani and Miller approach include the following, except

- A. There is a perfect capital market
- B. There are no corporate taxes
- C. The investor act rationally
- D. **There is retained earnings**

8. The capital of a company consists of EXCEPT....
- A. equity shareholders fund
 - B. preference share capital
 - C. long term external debts.
 - D. Prepayment and trade receivables**
9. These are all assumptions of capital structure except that
- A. The firm's total financing remains constant
 - B. Taxes are not considered.
 - C. The pay-out ratio is 100%
 - D. The firm has no perpetual life**
10. Under which approach is capital structure decisions of the firm are **irrelevant**.
- A. Traditional approach
 - B. Net Income approach
 - C. Net operating Income approach**
 - D. Modigliani and Miller approach

Theoretical Questions

1. Explain the concept of Capital Structure and two main sources of Capital Structure
2. Discuss the factors affecting capital structure
3. Discuss Pecking Order Theory and its criticism
4. Explain six factors determining capital structure
5. Differentiate between Traditional approach and Net Income approach

CHAPTER 8

DIVIDEND POLICY DECISION

Learning Objectives

After studying this chapter, you should be able to:

1. Understand the Meaning, and Significance of Dividend to Investors
2. Explain the different types of dividends and understand the Concept of Dividend Payout and Retention Ratio
3. Illustrate the various Theories and Policies of Dividend
4. Recommend the best form of Dividend and type of Dividend Policy to your Organization and
5. Determine and Compute correctly the amount of Dividend Payable to Investors.

8.1 Introduction

The financial manager must take careful decisions on how the profit should be distributed among shareholders. It is very important and crucial part of the business concern, because these decisions are directly related with the value of the business concern and shareholder's wealth. Like financing decision and investment decision, dividend decision is also a major part of the financial manager. When the business concerns decide dividend policy, they have to consider certain factors such as retained earnings and the nature of shareholder of the business concern.

8.2 Meaning of Dividend

Dividend refers to the business concerns net profits distributed among the shareholders. It may also be termed as the part of the profit of a business concern, which is distributed among its shareholders. According to the Institute of Chartered Accountant of India (2010), dividend is defined as "a distribution to shareholders out of profits or reserves available for this purpose".

8.3 Types/Form of Dividend

Dividend may be distributed among the shareholders in the form of cash or stock. Hence, Dividends are classified into:

- A. Cash dividend
- B. Stock dividend
- C. Bond dividend
- D. Property divided

Cash Dividend

If the dividend is paid in the form of cash to the shareholders, it is called cash dividend. It is paid periodically out by the business concerns from EAIT (Earnings after interest and tax). Cash dividends are common and popular types followed by majority of the business concerns.

Stock Dividend

Stock dividend is paid in the form of the company stock due to raising of more finance. Under this type, cash is retained by the business concern. Stock dividend may be bonus issue. This issue is given only to the existing shareholders of the business concern.

Bond Dividend

Bond dividend is also known as script dividend. If the company does not have sufficient funds to pay cash dividend, the company promises to pay the shareholder at a future specific date with the help of issue of bond or notes.

Property Dividend

Property dividends are paid in the form of some assets other than cash. It will be distributed under the exceptional circumstance.

8.4 Dividend Decision

Dividend decision of the business concern is one of the crucial parts of the financial manager, because it determines the amount of profit to be distributed among shareholders and amount of profit to be treated as retained earnings for financing its long – term growth. Hence, dividend decision plays very important part in the financial management. Dividend decision consists of two important concepts which are based on the relationship between dividend decision and value of the firm.

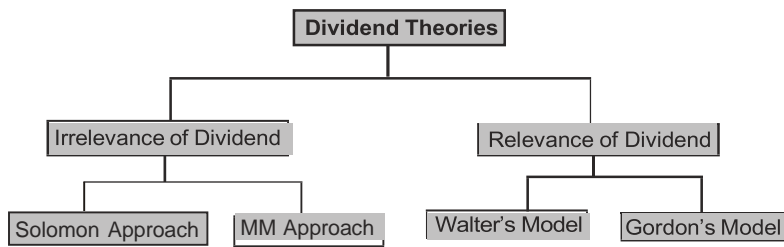


Fig. 8.2 Dividend Theories

According to professors **Soloman, Modigliani and Miller**, dividend policy has no effect on the share price of the company. There is no relation between the dividend rate and value of the firm. Dividend decision is irrelevant of the value of the firm. Modigliani and Miller contributed a major approach to prove the irrelevance dividend concept.

Modigliani and Miller’s Approach

According to MM, under a perfect market condition, the dividend policy of the company is irrelevant and it does not affect the value of the firm.

“Under the conditions of perfect market, rational investors, absence of tax discrimination between dividend income and capital appreciation, given the firm’s investment policy, its dividend policy may have no influence on the market price of shares”.

Assumptions: MM approach is based on the following important assumptions:

1. Perfect capital market.
2. Investors are rational.
3. There is no tax.
4. The firm has fixed investment policy.
5. No risk or uncertainty.

Proof for MM approach

MM approach can be proved with the help of the following formula:

$$\frac{P_0(D_1 + P_1)}{(1 + Ne)}$$

Where:

P_o = Prevailing market price of a share.

K_e = Cost of equity capital.

D_1 = Dividend to be received at the end of period one.

P_1 = Market price of the share at the end of period one.

P_1 can be calculated with the help of the following formula.

$$P_1 = P_o (1 + K_e) - D_1$$

The number of new shares to be issued can be determined by the following formula:

$$M \times P_1 = I - (X - nD_1)$$

Where,

M = Number of new shares to be issued.

P_1 = Price at which new issue is to be made. I =
Amount of investment required.

X = Total net profit of the firm during the period. nD_1 =
Total dividend paid during the period.

Illustration 1

X Company Ltd., has 100000 shares outstanding, the current market price of the shares N15 each. The company expects the net profit of N200,000 during the year and it belongs to a rich class for which the appropriate capitalisation rate has been estimated to be 20%. The company is considering dividend of N2.50 per share for the current year.

What will be the price of the share at the end of the year?

- (i) if the dividend is paid and
- (ii) if the dividend is not paid.

Criticism of MM approach

MM approach consists of certain criticisms also. The following are the major criticisms of MM

approach.

- MM approach assumes that tax does not exist. It is not applicable in the practical life of the firm.
- MM approach assumes that there is no risk and uncertain of the investment. It is also not applicable in present day business life.
- MM approach does not consider floatation cost and transaction cost. It leads to affect the value of the firm.
- MM approach considers only single decrement rate, it does not exist in real practice.
- MM approach assumes that, investor behaves rationally. But we cannot give assurance that all the investors will behave rationally.

8.5 Relevance of Dividend

According to this concept, dividend policy is considered to affect the value of the firm. Dividend relevance implies that shareholders prefer current dividend and there is no direct relationship between dividend policy and value of the firm. Relevance of dividend concept is supported by two eminent persons like Walter and Gordon.

Walter's Model

Prof. James E. Walter argues that the dividend policy almost always affects the value of the firm.

Walter model is based on the relationship between the following important factors:

- Rate of return (r)
- Cost of capital (k)

According to the Walter's model, if $r > k$, the firm is able to earn more than what the shareholders could by reinvesting, if the earnings are paid to them. The implication of $r > k$ is that the shareholders can earn a higher return by investing elsewhere.

If the firm has $r = k$, it is a matter of indifferent whether earnings are retained or distributed.

Assumptions

Walters model is based on the following important assumptions:

1. The firm uses only internal finance.
2. The firm does not use debt or equity finance.
3. The firm has constant return and cost of capital.
4. The firm has 100 percent payout.
5. The firm has constant EPS and dividend.
6. The firm has a very long life.

Walter has evolved a mathematical formula for determining the value of market share.

Criticism of Walter's Model

The following are some of the important criticisms against Walter model:

Walter model assumes that there is no extracted finance used by the firm. It is not practically applicable. There is no possibility of constant return. Return may increase or decrease, depending upon the business situation. Hence, it is applicable.

According to Walter model, it is based on constant cost of capital. But it is not applicable in the real life of the business.

Gordon's Model

Myron Gordon suggests one of the popular models which assume that dividend policy of a firm affects its value, and it is based on the following important assumptions:

1. The firm is an all equity firm.
2. The firm has no external finance.
3. Cost of capital and return are constant.
4. The firm has perpetual life.
5. There are no taxes.
6. Constant relation ratio ($g=br$).
7. Cost of capital is greater than growth rate ($K_e > br$).
8. Gordon's model can be proved with the help of the following formula:
9. $P = \frac{D_1}{K_e - br}$
10. $N_e - br$

Where,

P = Price of a share

E = Earnings per share

$1 - b$ = D/p ratio (i.e., percentage of earnings distributed as dividends)

K_e = Capitalization rate

br = Growth rate = rate of return on investment of an all equity firm.

8.6 Factors Determining Dividend Policy

Profitable Position of the Firm

Dividend decision depends on the profitable position of the business concern. When the firm earns more profit, they can distribute more dividends to the shareholders

Uncertainty of Future Income

Future income is a very important factor, which affects the dividend policy. When the shareholder needs regular income, the firm should maintain regular dividend policy.

Legal Constrains

The Companies Act 1956 has put several restrictions regarding payments and declaration of dividends. Similarly, Income Tax Act, 1961 also lay down certain restrictions on payment of dividends.

Liquidity Position

Liquidity position of the firms leads to easy payments of dividend. If the firms have high liquidity, the firms can provide cash dividend otherwise, they have to pay stock dividend.

Sources of Finance

If the firm has finance sources, it will be easy to mobilise large finance. The firm shall not go for retained earnings.

Growth Rate of the Firm

High growth rate implies that the firm can distribute more dividend to its shareholders

Tax Policy

Tax policy of the government also affects the dividend policy of the firm. When the government gives tax incentives, the company pays more dividend.

Capital Market Conditions

Due to the capital market conditions, dividend policy may be affected. If the capital market is perfect, it leads to improve the higher dividend.

Practice Questions

Multiple Choice Questions

1. Dividends are classified into the following

- A. Cash, stock, bonds and property dividend
 - B. Cash, stock, property and preference dividend
 - C. Bond, stock, equity and preference dividend**
 - D. Cash, bond, equity and preference dividend
2. The following are the major criticisms of MM approach except
- A. MM approach assumes that tax does not exist.
 - B. MM approach assumes that there is no risk and uncertain of the investment.
 - C. MM approach assumes that, investor behaves rationally.
 - D. MM approach assumes that the firm has constant return and cost of capital
3. Under the Gordon Model,
- A. Cost of capital is less than growth rate ($K_e < r$).
 - B. Cost of capital is equal to growth rate ($K_e = r$).
 - C. Cost of capital is greater than growth rate ($K_e > r$).
 - D. None of the above
4. If the capital market is perfect, it leads
- A. to improve the higher dividend.
 - B. to decrease in the dividend
 - C. to constant dividend
 - D. to flexible dividend
5. All of the following factors determine the dividend policy except
- a) Profit, liquidity position, growth rate and tax policy
 - b) Growth rate, tax policy, legal constraints and capital market condition
 - c) Investor relation, growth rate, liquidity position and capital structure
 - d) Tax policy, profit, liquidity position and capital market condition
6. Walters model is based on the following important assumptions except
- a) The firm uses only internal finance.
 - b) The firm does not use debt or equity finance.
 - c) The firm has constant return and cost of capital.
 - d) The firm has no constant EPS and dividend.
7. When the government gives tax incentives,
- a) The company pay less dividend

- b) The company does not pay any dividend
 - c) The company pays more dividend.
 - d) The company pays extra dividend.
8. MM approach is based on the following important assumptions except
- a) There is perfect capital market.
 - b) Investors behave rationally
 - c) There are no corporate taxes
 - d) The firm has no fixed investment policy.
9. Walter model is based on one of the relationships between the following important factors
- a) Eps and dividend ratio
 - b) Rate of return (r) and Cost of capital (k)
 - c) Cost of capital and the dividend ratio
 - d) Rate of return and Eps
10. Gordon Model is based on the relationship between
- a) Dividend payout ratio and the retention ratio
 - b) Growth rate and dividend payout ratio
 - c) Retention ratio and growth rate
 - d) None of the above

Theoretical Questions

1. Define Dividend and explain four Significance of Dividend to Investors
2. Explain any three different types of dividends.
3. What do you understand by the Concept of Dividend Payout and Retention Ratio
4. Explain any two theories and policies of Dividend
5. Describe Dividend Policy and three types of Dividend Policy to your Organization.

CHAPTER 9

CAPITAL AND FINANCIAL MARKET

Learning Objectives

After studying this chapter, you should be able to:

1. Understand the Meaning, Features, and Importance of the Financial Market
2. Identify the Participants/Players on the Financial Market and their respective roles
3. Correctly explain the operation of Instruments traded on the Money and Capital Market, and
4. Describe the recent reforms in the Nigerian Financial Market

9.1 Introduction

The main entities seeking to raise long-term funds on the primary capital markets are governments (which may be municipal, local, or national) and business enterprises (companies). Governments issue only bonds, whereas companies often issue both equity and bonds. The main entities purchasing the bonds or stock include pension funds, hedge funds, sovereign wealth funds, and less commonly wealthy individuals and investment banks trading on their own behalf. In the secondary market, existing securities are sold and bought among investors or traders, usually on an exchange, over-the-counter, or elsewhere. The existence of secondary markets increases the willingness of investors in primary markets, as they know they are likely to be able to swiftly cash out their investments if the need arises.^[2]

A second important division falls between the stock markets (for equity securities, also known as shares, where investors acquire ownership of companies) and the bond markets (where investors become creditors).

Transactions on capital markets are generally managed by entities within the financial sector or the treasury departments of governments and corporations, but some can be accessed directly by the public. As an example, in the United States, any American citizen with an internet connection can create an account with Treasury, Direct and use it to buy bonds in the primary market, though sales to individuals forms only a tiny fraction of the total volume of bonds sold. Various private companies provide browser-based platforms that allow individuals to buy shares and sometimes even bonds in the secondary markets. There are many thousands of such systems, most serving only small parts of the overall capital markets. Entities hosting the systems include stock exchanges, investment banks, and government departments. Physically,

the systems are hosted all over the world, though they tend to be concentrated in financial centres like London, New York, and Hong Kong.

9.2 Meaning of Capital Market and Financial Market

Capital market is a financial market in which long-term debt (over a year) or equity-backed securities are bought and sold, in contrast to a money market where short-term debt is bought and sold. Capital markets channel the wealth of savers to those who can put it to long-term productive use, such as companies or governments making long-term investments. Financial regulators like Securities and Exchange Board of India (SEBI), Bank of England (BoE) Nigerian Stock Exchange (NSE), Jonesburg Stock Exchange and the U.S. Securities and Exchange Commission (SEC) oversee capital markets to protect investors against fraud, among other duties

A capital market can be either a primary market or a secondary market. In a primary market, new stock or bond issue are sold to investors, often via a mechanism known as underwriting.

Financial markets are markets where financial transactions are conducted. Financial transactions generally refer to creation or transfer of financial assets, also known as financial instruments or securities. Financial transactions channel funds from investors who have an excess of available funds to issuers or borrowers who must borrow funds to finance their spending.

Since the early 1970s, financial markets in various countries have experienced significant development. As a result, world financial markets are larger, are highly integrated, and have a wide range of financial instruments available for investing and financing.

9.3 Characteristic f Efficient Functioning Financial Market

The under-listed are the key features of an efficient financial market.

- i. Individual investors, commercial banks, financial institutions, insurance companies, business corporations, and retirement funds are some significant suppliers of funds in the market.
- ii. Investors offer money intending to make capital gains when their investment grows with time. In addition, they enjoy perks like dividends, interests, and ownership rights.

- iii. Companies, entrepreneurs, governments, etc., are fund-seeker. For instance, the government issues debt instruments and deposits to fund the economy and development projects.
- iv. Usually, long-term investments such as shares, debt, government securities, debentures, bonds, etc., are traded here. In addition, there are also hybrid securities such as convertible debentures and preference shares.
- v. Stock exchanges operate the market predominantly. Other intermediaries include investment banks, venture capitalists, and brokers.
- vi. Regulatory bodies have the authority to monitor and eliminate any illegal activities in the capital market. For instance, the Securities and Exchange Commission overlooks the stock exchange operations.
- vii. The capital market and money market are not the same. Securities exchanged in the former would typically be a long-term investment with over a year lock-in period. Short-term investments trade in the money markets and include a certificate of deposits, bills of exchange, promissory notes, etc.

9.4 Important of Financial Market

It mobilizes parties' savings from cash and other forms to financial markets. It bridges the gap between people who supply capital and people in need of money.

Any initiative requires cash to materialize. Financial markets are central to national and economic development as they provide rich sources of funds. For example, the World Bank collaborates with global capital markets to mobilize funds to achieve its goals, such as poverty elimination.

- The International Bank for Reconstruction and Development (IBRD) has assisted over 70 countries by raising nearly \$ 1 trillion since the first bond in 1947. Likewise, a report suggested that the European Union companies need to turn to this market to manage their pandemic balance sheet as banks alone will not suffice.
- For the participants, the exchange instruments possess liquidity, i.e., they can be converted into cash and cash equivalents.
- Also, the trading of securities becomes easier for investors and companies. It helps minimize transaction and information costs.
- With higher risks, investors can gain more profits. However, there are many products for those with a low-risk appetite. In addition, there are some tax benefits obtained from investing in the stock market.

- Usually, the market securities can work as collateral for getting loans from banks and financial institutions.

9.5 Components of Financial Market

Financial markets comprise five key components: the debt market, the equity market, the foreign-exchange market, the mortgage market, and the derivative market. From the 1980s, each component market has been expanding in size, and an extensive array of new financial instruments have been initiated, especially in the mortgage market and the derivative market.

Debt instruments are traded in the debt market, also often referred to as the bond market. The debt market is important to economic activities because it provides an important channel for corporations and governments to finance their operations. Interactions between investors and borrowers in the bond market determine interest rates. The size of the world bond market was estimated at around \$37 trillion at the start of 2002 (all currency figures are in U.S. dollars). Bonds denominated in dollars currently represent roughly half the value of all outstanding bonds in the world.

Financial markets are broken down into various components based on the asset that is traded and the length of financing offered:

- **Capital Markets:** Capital markets are concerned with raising capital for entities through issuing equity stock or long-term debt. Let us explore some of the elements of capital markets.
- **Stock markets:** There are markets that companies leverage to raise capital by creating shares. The shares are sold to external investors, who can either be corporations or individual buyer. Companies can sell the shares on their own or engage the services of stockbroker.
- **Bond markets:** When organizations need large-scale financing, they may resort to bonds. Bonds are borrowing instruments which generate a fixed interest rate after a predefined period. Different types of bonds include treasury bonds, corporate bonds, and municipal bonds.
- **Commodity Markets:** This is where companies trade in natural resources such as oil, corn, or gold, for short-term financing

- **Money Markets:** Money market instruments are also referred to as 'paper'. They entail trading of financial instruments which are highly liquid and have short-term maturity dates. The maturity dates of papers could be as short as a few hours but not more than one year.
- **Derivatives Markets:** These are markets that facilitate the trading of financial instruments like futures contracts or options which are derived from other forms of assets like stocks, bonds, commodities, and market index price.
- **Futures Markets:** A futures market is one where participants agree to buy or sell an asset at a future date at an agreed-upon price.
- **Insurance Markets:** Insurance markets are a means of protection against financial loss or any other uncertain loss. Insurance companies compensate the insured party in case of occurrence of the insured loss.

9.6 Participants in Financial Markets

Firms use stock and bond markets to raise capital from investor. Speculators look to various asset classes to make directional bets on future prices, while hedgers use derivatives markets to mitigate various risks, and arbitrageurs seek to take advantage of mispricing or anomalies observed across various markets. Brokers often act as mediators that bring buyers and sellers together, earning a commission or fee for their services. These are some functions of participant of financial and capital market.

- Banks:** Banks participate in the capital market and money market. Within the capital market, banks take active part in bond markets. Banks may invest in equity and mutual funds as a part of their fund management. Banks take active trading interest in the bond market and have certain exposures to the equity market also. Banks also participate in the market as clearing houses.
- Primary Dealers (PDS):** PDs deal in government securities both in primary and secondary markets. Their basic responsibility is to provide two-way quotes and act as market makers for government securities and strengthen the government securities market.
- Stock Exchanges:** A Stock exchange is duly approved by the regulators to provide sale and purchase of securities by “open cry” or “on-line” on behalf of investors through broker. The stock exchanges provide clearing house facilities for netting of

payments and securities delivery. Such clearing houses guarantee all payments and deliveries. Securities traded in stock exchanges include equities, debt, and derivatives.

- iv. **Brokers:** Only brokers approved by Capital Market Regulator can operate on stock exchange. Brokers perform the job of intermediating between buyers and seller of securities. They help build up order book, price discovery, and are responsible for a contract being honoured. For their services brokers earn a fee known as brokerage.

9.7 Distinction Between Financial Market and Intermediaries

Financial Market	Intermediaries
It acts as a platform for sellers and buyers to connect and deal in their desired financial assets at a price determined by market forces	They are real brokers or agent shuttles between stock buyers and sellers.
It brings together the sellers and buyers to deal in their desired financial assets at a determined price.	This intermediary step gives you more opportunities to convince them to shift from an advisory role to a full-time team member.

9.8 Product f Capital Market and Financial Market

Capital markets are used primarily to sell financial products such as equities and debt securities. Equities are stocks, which are ownership shares in a company. Debt securities, such as bonds, are interest-bearing IOUs.

9.9 Money Market Instruments and Features

Money market instruments are short-term financing instruments which can be converted easily to cash. Interbank loans (loans between banks), money market mutual funds, commercial paper, Treasury bills and securities lending and repurchase agreements, are all examples of money markets instruments.

There are majorly two ways in which an investor parks their monetary capital. It includes money market mutual funds and money market bank accounts. For premature withdrawal, customers have to sell their funds resulting in lesser yields than post-maturity withdrawals. The provision of a premature withdrawal facility allows these instruments to have relatively higher liquidity,

9.9.1 Features of Money Market

Investors opt for a money market with a specific goal in mind. Their major focus usually is not related to capital gains or wealth creation but rather to safekeeping funds for a limited tenure. Investors invest in Money Market Instruments with the purpose to resell the funds with a slight appreciation. They serve the purpose of meeting financial requirements in the short term. It is highly captivating for short-term investor Features provided by money market instruments are as follows.

- i. **Liquidity Factor:** The money market allows customers to convert their funds to readily available monetary assets. The high liquidity ratio of these investment tools makes them a go-to financial solution for many. Money market investments can be seen as a safe locker for investors to take out their investments anytime. However, many banks have a policy of minimum balance requirement with a specific minimum tenure.
- ii. **Medium Risk:** Although money market investments are considered to be less risky than stocks and bonds counterparts, they still relatively carry a certain rate of risk owing to the market dynamics. In scenarios of market crashes, money market investments have volatility to crash as well.
- iii. **Return factor:** The money market has the potential to create higher short-term returns compared to a regular savings account. This gives the investment tool a higher possibility to be picked as a source of income than a savings account.

9.10 Capital Market Instrument and Features

Capital market is an organised market where businesses and individuals are able to buy and sell debt and equity securities. Features of the capital market are as follows: Capital market is a market where medium, and long-term securities are traded. It offers higher returns on investment.

9.10.1 Features of Capital Market

- i. **Link between Savers and Investment Opportunities:** Capital market is a crucial link between saving and investment process. The capital market transfers money from savers to entrepreneurial borrower
- ii. **Deals in Long Term Investment:** Capital market provides funds for long and medium term. It does not deal with channelising saving for less than one year.

- iii. **Utilises Intermediaries:** Capital market makes use of different intermediaries such as brokers, underwriters, depositories etc. These intermediaries act as working organs of capital market and are very important elements of capital market.
- iv. **Determinant of Capital Formation:** The activities of capital market determine the rate of capital formation in an economy. Capital market offers attractive opportunities to those who have surplus funds so that they invest more and more in capital market and are encouraged to save more for profitable opportunities.
- v. **Government Rules and Regulations:** The capital market operates freely but under the guidance of government policies. These markets function within the framework of government rules and regulations, e.g., stock exchange works under the regulations of SEBI which is a government body.

9.11 The Reform Act of Undertaking in Nigeria

In recent times, there has been proposed regular and constant legal reforms as way to resolve some of the social and political challenges confronting the nation's justice administration. Arguments have been for the law reform of advance freedom, which is important for comprehensive national development.

In emphasizing on the important of legal reform, this expert stressed the need to directly establish its contribution to economic development. They also pointed out the need for the reforms to cope with new tricky situation in the world, adding that such is of paramount importance of parliaments and law reform institution all over the world.

Specifically, the expert identified four main methods of reforming the law:

- i. Repeal (removal or reversal of the law)
- ii. Creation of new law
- iii. Consolidation i.e., combination of number of laws into one
- iv. Codification i.e., collection and systematic arrangement.

9.12 The Stock Exchange Automated Quotation System (SEAQ)

This is a computerized information system adopted by the Stock Exchange, which provides screen-based information on the state of the market and dealings to brokers/dealers, both in their offices and on the trading floor and to major investing institutions or other subscribers to the system. Information is fed through the established TOPIC system (Teletext Output of Price

Information by Computer System) to the TOPIC terminals. It is the Stock Exchange's videotext terminal network. It has three levels of information service, namely:

- a. **Level I:** This is called the investor service. It is meant for the investing institutions, which are not members of the Stock Exchange. It is playing the best bid and offer prices for each security on the database. For Alpha Stocks, the number of transactions reported in the last five minutes and the total.
- b. **Level II:** This is called the Delivery Service for members of the Stock Exchange. The various competing market-makers' price is displayed for each security with the number of shares for which the quotation is valid. The best quote in the case of Alpha and Best stocks are shown in yellow band.
- c. **Level III:** This is available to market-makers and allows them to update their prices input trading information i.e., the prices at which they are prepared to trade, and the volume for which these prices are binding.

9.13 Stock Classification

stock traded on the London Stock Exchange are classified according to investor's interest in them and the level of information which is required to be displayed on the SEAQ system to serve the needs of the market. The classifications, which change along with changes in investors' interest, are as follows:

- i. **Alpha Securities:** These are the largest and the most liquid stocks in the market. Up to ten (10) or more competing market-makers deal in Alpha securities which fall within the 100 shares index of the Financial Times.
- ii. **Beta Securities:** They are the next 500 to 600 most actively traded securities. Though the price display and trade reporting obligation for member firms are the same as for alpha securities, trade details are not published in real-time on SEAQ but shown the next day in the daily official list.
- iii. **Gamma Securities:** These are securities of smaller companies. There are about 2000 Gamma stocks, which securities' prices on the SEAQ may be firm or indicative depending on what is declared by market makers on the screen display.
- iv. **Delta Securities:** These are largely illiquid stocks with very few market makers as participants. An index is maintained on TOPIC to allow firms to identify market makers

prepared to deal in them and the indicative mid-prices are also displayed on TOPIC screens.

9.13.1 The Dealing and Transfer System

For Alpha and Beta securities, the stockbroker/dealer calls up on the SEAQ screen the page displaying the relevant securities, selects the market maker showing the best bid/offer price. He then telephones the market maker to place the order for Gamma and Delta securities, However, the broker makes further enquiries as to prices. For all categories of security, the market maker must enter the price and the number of shares dealt into the computer within five minutes of the transaction being executed. All trades are published in the next day's Stock Exchange Daily Official List. If alpha, trades are published immediately on SEAQ.

9.13.2 Contract Note

After a deal, the broker sends the client a contract notes showing full details of the transaction and the time the deal was struck. It contains details such as name and address o broker or dealer, name of client, the fact that it is a purchase or sale, whether broker or dealer is an agent/principal, bargain date, time of deal, number of shares, price, commission, contract levy, VAT, stamp duty, total cost of proceeds and settlement date.

9.13.3 A Purchase or Sale?

If the deal is to purchase, the broker registers the purchase and the new owner with the company concerned and sends the client in due course a certificate evidencing ownership. If a sale., the client receives from the broker, usually along with the contract note, a transfer from the client must sign and return along with the covering certificate to the broker, for onward transmission by the broker to the company or nay other body concerned so that the seller's name is removed from the holder's register.

9.14 Bearer/Unregistered Securities

Bearer securities exist in a situation where the name of the owner is not recorded in the company's or any other issuing body's share/shareholders' register. Though dealing costs of bearer securities are the same as for registered securities, the difference is in transfer.

Bearer securities, generally, have the following characteristics;

- i. Certificates do not include the holder's name, hence, no transfer form.

- ii. Ownership is transferable by mere physical deliver, buyer, either directly by the seller or through a broker.
- iii. No transfer stamp duty is paid (except on the original issue)
- iv. The risk of loss and forgery is very high.
- v. Payment of interest and dividends is problematic, as there is no register of holders. Holders have to chase information regarding dividends, new issues, meetings, and company reports. Interests and dividends are paid by registrars or paying agents.

9.15 Stock Exchange Settlement and Transfer Procedure

After the broker/dealer has carried out the, say "buy" instruction of a customer and has issued the contract note to the customer, then the Stock Exchange system by which securities are paid for and transferred into the customer's name begins. The two basic methods of settlement are as follows:

- i. **For cash settlement:** This concerns bargaining in securities which are on cash basis and for which payment is due the day after the bargain is struck e.g., gilt-edged securities.
- ii. **For account settlement:** This concerns all normal dealings in registered shares and industrial fixed interest stocks. The settlement procedure is through the Stock Exchange computerised settlement system known as TALISMAN (Transfer Accounting Lodging for Investors and Stock Management for Jobbers).

In this system, all stock exchange member firms are required to report details of their bargains to the checking system each day. The checking system validates these details and produces overnight reports for each member firm which provides details of matched and unmatched bargains. Only matched bargains are passed on to TALISMAN where they form the basis of settlement.

9.16 Bulls and Bears

These are speculators, distinct from investors in the stock market, the bull buys in the hope of selling for higher price before the end of the "account". A stale bull buys shares in anticipation of a short-term rise, which fails to occur. A stale bull who lacks cash and does not wish to sell at a loss may be also to "carry the bargain over" into the next account by a "cash and new" deal. The bear is the opposite of the bull. He sells shares he does not own. A bear who owns the share he sells, in anticipation of a fall, is called a "covered bear".

A bullish market connotes a rising market due to optimism in the economy and typified by buying. A bearish market on the other hand, 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.

9.17 Contango

A method of carrying a stock market transaction over to the next account allows shares to be sold for settlement on the normal account day and immediately repurchased on settlement on the following account day. The sale and purchase are carried out at the same price (marking up price), based on the price ruling at the close of business on the last day of the Account.

This is a kind of privilege, and the charge +for it is called “Contango”.

Summary

This chapter made the readers to understand the importance of financial markets, capital market in Nigeria and major form of capital. It extensively discussed the mode of issuing shares and operation of Nigeria stock exchange.

Practice Questions

1. The following are the participants of capital market
 - A. Banks, primary dealers, brokers and stock exchange
 - B. Insurance, brokers, companies and banks
 - C. Stock exchange, brokers, bank and insurance
 - D. None of the above

2. financial market comprises of five key components, which are
 - A. debt market, equity market, foreign-exchange market, mortgage market, and derivative market
 - B. debt market, equity market, foreign-exchange market, forex market, and derivative market
 - C. debt market, equity market, foreign-exchange market, money market, and derivative market
 - D. debt market, equity market, money market, capital market, and derivative market

3. one of these is not a features of money market
 - A. commodity factor
 - B. liquidity factor
 - C. medium risk
 - D. return factor

4. The full meaning of the following abbreviated letter **S.E.A.Q**
 - A. The Stock Exchange Automatic Quotation System
 - B. The Stock Exchange Automated Quotation Services
 - C. The Stock Exchange Auto-mobile Quotation System
 - D. The Stock Exchange Automated Quotation System

5. buys shares in anticipation of a short-term rise, which fails to occur
 - A. A covered bear
 - B. A stale bull
 - C. Investors
 - D. Star

6. sells shares in anticipation of a fall
 - A. A covered bear
 - B. A stale bull
 - C. Investors
 - D. Star

7. After a deal, the broker sends the client a notes showing full details of the transaction and the time the deal was struck.
- A. Transaction notes
 - B. Evidence of ownership notes
 - C. Contract notes
 - D. Certificates notes
8. Short-term investments trade in the....
- A. Capital market
 - B. Money market
 - C. Commodity market
 - D. Stock market
9. Long-term investments trade in the....
- A. Capital market
 - B. Money market
 - C. Commodity market
 - D. Stock market
10. contains details such as name and address o broker or dealer, name of client, the fact that it is a purchase or sale, whether broker or dealer is an agent/principal, bargain date, time of deal, number of shares, price, commission, contract levy, VAT, stamp duty, total cost of proceeds and settlement date.
- A. Transaction notes
 - B. Evidence of ownership notes
 - C. Contract notes
 - D. Certificates notes

Theoretical Questions

1. Define Financial Market and explain five Features of Financial Market
2. Describe five importance of the Financial Market
3. Identify two main Participants/Players on the Financial Market and their respective roles
4. Explain the operation of Instruments traded on the Money and Capital Market
5. Describe the recent reforms in the Nigerian Financial Market

CHAPTER 10

PUBLIC FINANCE

Learning Objectives

After studying this chapter, you should be able to:

1. Understand the Meaning of Public Finance and explore its various definitions
2. Correctly describe the Scope, Significance and Basic Concepts in Public Finance
3. Trace the Origin and Explain the basic Principles of Public Finance
4. Justify the rationale for Public Finance and briefly discuss the Government Machineries for Public Financing and
5. Perform Computations in Public Financing

10.1 Introduction

Public finance is the branch of economics. It is made of two words as public and finance. The term public means government and finance means science of management of money. So literally public finance means the study of allocation of economic resources for achieving the goals of public affair. Thus, public finance is the study of allocation and management of resources and technology for achieving the goals of public organization. However, literally it seems to have narrow meaning, but its scope and definition has been widening and changing through the time. In public finance, we study the finances of the Government. Thus, public finance deals with the question of how the Government raises its resources to meet its ever-rising expenditure.

10.2 Definition of Public Finance:

Public finance is the study of the role of the government in the economy. It is the branch of economics which assesses the government revenue and government expenditure of the public authorities and the adjustment of one or the other to achieve desirable effects and avoid undesirable ones.

As Dalton (2013) puts it, “public finance is “concerned with the income and expenditure of public authorities and with the adjustment of one to the other.” Accordingly, effects of taxation, Government expenditure, public borrowing and deficit financing on the economy constitutes the subject matter of public finance.

Thus, Prof. Otto Eckstein (2008) writes “Public Finance is the study of the effects of budgets on the economy, particularly the effect on the achievement of the major economic objects -

growth, stability, equity and efficiency.” Further, it also deals with fiscal policies which ought to be adopted to achieve certain objectives such as price stability, economic growth, more equal distribution of income. Economic thinking about the role that public finance is expected to play has changed from time to time according to the changes in economic situation.

Before the Great Depression that gripped the Western industrialized countries during the thirties, the role of public finance was considered to be raising sufficient resources for carrying out the Government functions of civil administration and defence from foreign countries. During this period, the classical economists considered it prudent to keep expenditure to the minimum so that taxing of the people is avoided as far as possible.

Further, it was thought that Government budget must be balanced. Public borrowing was recommended mainly for production purposes. During a war, of course, public borrowing was considered legitimate, but it was thought that the Government should repay or reduce the debt as soon as possible.

10.3 Scope of Public Finance

Below is the scope of public finance:

- i. It contributes to financial stabilization by promoting savings and investments through various government policies.
- ii. It ensures economic stability by controlling resource allocation and equal wealth distribution.
- iii. It also assists in enhancing national exports and developing public infrastructure.

10.4 Concept of Public Finance

But under the impact of the Great Depression of thirties and the Keynesian explanation of it, the thinking about and role of public finance underwent a sea change. The classical view of public finance could not meet the requirements of the then prevailing situation. In order to increase aggregate effective demand and thereby raise the level of income and employment in the country, public finance was called upon to play an active role. During the Second World War and after, the Western economies suffered from serious inflationary pressures which were attributed to the excessive aggregate demand.

So, in such inflationary conditions, the public finance was expected to check prices through

reducing aggregate demand. Thus, the budget which was previously meant to raise resources for limited activities of the Government assumed a functional role to serve as an instrument of economic regulation.

It came to be realized that government's taxing and spending policies could go a long way in mitigating economic fluctuations. Balanced budgets are no longer considered sacrosanct, and the governments can spend beyond their resources without offending canons of sound finance to restore the health of the economy. Public borrowing and consequent increase in public debt at the time of depression raises aggregate demand and thereby helps in raising the level of income and employment. Therefore, deficit budget and increase in public debt at such times is a thing to be welcomed.

10.5 Public Finance and Private Finance

Public finance is the study of income, expenditure, borrowing and financial administration of the government. Private finance on the other hand is the study of the income, expenditure, borrowing and financial administration of the individuals and private firms.

Similarities Between Public and Private Finance

- i. **Objectives:** Both public and private finance aims at the satisfaction human wants. The objective of public finance is to satisfy social wants and that of private finance is to satisfy individual wants.
- ii. **Principle:** Both government and individual follow similar principles. The government follows the principle of maximum social benefit while spending its income. Likewise, an individual follows the principle of maximum satisfaction when spending his income.
- iii. **Income, expenditure and borrowing:** Both government and individuals have similar but limited resources/income, from which expenditures are made. If their incomes are insufficient to meet their expenditure, they borrow to repay afterwards.
- iv. **Policies:** Both government and private individuals and firms make good and not so good financial policies sometimes. Sound financial policies lead to maximization of social and individual welfare, respectively. The opposite happens when reverse is the case.

- v. **Administration:** The two sectors require efficient administration for their success. If the government is corrupt and inefficient, it will lead to misuse and wastage of finances and so is the case with the individual or company.

Differences Between Public and Private Finance

Adjustment between income and expenditure: The government first estimates its expenditure and then goes to find how to raise the required amount. The individual on the other hand, determines his expenditure on the basis of his income. While the individual says, “I have so much to spend” the government says, “I have so much to raise”. However, this difference is not perfectly rigid. Under certain circumstances, an individual may work harder to increase his income in order to meet his ever increasing demands/wants and the government adjusts its expenditure to income during economic recession:

- i. **Expenditure:** There are differences in the nature of expenditure between the two. While an individual’s expenditure is dictated by his income, habits, fashion, taste etc.; the government expenditure is a function of its economic and social policies, like reducing unemployment and poverty, reducing income inequalities, providing infrastructural facilities etc.
- ii. **Compulsion:** In public finance, there is compulsion in payment of taxes, failure of which attracts punishment by fine and imprisonment. But an individual or firm cannot enforce compulsion on anybody to pay him money. Also, the government can compel people/institution to lend its money during war or emergency while the individuals cannot.
- iii. **Elasticity:** Public finance has more/greater elasticity than private finance. The government has more means of income whereas the resources of the individual are limited. The government has the whole wealth of the nation/community to draw from, in addition to the possibility of raising income externally. But the income of the individual is limited to his current earnings, savings and borrowings.
- iv. **Motives:** The motive of public finance is public welfare while for private finance, the motive is profit. However, some government public enterprises which are run on profits are meant for public welfare.

- v. **Budgeting:** The duration and nature of public and private budget differ. Public budget is usually for one fiscal/financial year but that of the individual can be daily, weekly or monthly etc. while the government can have a surplus, deficit or balanced budget, the individual tries to have a surplus budget so as to save for the future, though occasionally he can have a deficit budget by borrowing. Further, the government expenditure may be influenced by non-economic considerations such as political polls and pressure that do not maximize social welfare. But the individual on his own spends his income on various goods and services in such a way that the marginal utilities of these expenditures are equal.
- vi. **Secrecy versus openness:** The government finances are usually of open knowledge. The budget is an open public document, which is commented and debated upon and published at various forms. Private finance, on the other hand, is not given to openness, unless under certain conditions.
- vii. **Present versus future:** The government is a permanent structure/organization and as such is usually concerned with both the present and future generations' welfare, while the individual is mainly concerned with his present welfare, profit and gain because of life's uncertainties.
- viii. **Bankruptcy:** The government can only face financial crises and but not go bankrupt. It has many sources of income, even deficit sources e.g., borrowing. But the individual or firm can be bankrupt.

10.6 Economic Nationalism of a Modern State

Economic nationalism is an ideology that prioritizes state intervention in the economy, including policies like domestic control and the use of tariffs and restrictions on labour, goods, and capital movement. The core belief of economic nationalism is that the economy should serve nationalist goals.

Economic nationalists oppose globalization and some question the benefits of unrestricted free trade. They favour protectionism and advocate for self-sufficiency. To economic nationalists, markets are to be subordinate to the state, and should serve the interests of the state (such as providing national security and accumulating military power). The doctrine of mercantilism is

a prominent variant of economic nationalism. Economic nationalists tend to see international trade as zero-sum, where the goal is to derive relative gains (as opposed to mutual gains).

Economic nationalism tends to emphasize industrialization (and often aids industries with state support), due to beliefs that industry has positive spillover effects on the rest of the economy, enhances the self-sufficiency and political autonomy of the country, and is a crucial aspect in building military power.

Modern Example

As a policy is a deliberate system of principles to guide decisions and achieve rational outcomes, the following list of would be examples of an economic nationalistic policy, where there is consistent and rational doctrine associated with each individual protectionist measure:

The reason for a policy of economic protectionism in the cases above varied from bid to bid. In the case of Mittal's bid for Arcelor, the primary concerns involved job security for the Arcelor employees based in France and Luxembourg. The cases of French Suez and Spanish Edessa involved the desire for respective European governments to create a 'national champion' capable of competing at both a European and global level. Both the French and US government used national security as the reason for opposing takeovers of Danone, Unocal, and the bid by DP World for 6 US ports. In none of the examples given above was the original bid deemed to be against the interests of competition. In many cases the shareholders supported the foreign bid. For instance, in France after the bid for Suez by Enel was counteracted by the French public energy and gas company Gaz De France the shareholders of Suez complained and the unions of Gaz De France were in an uproar because of the privatization of their jobs.

More recently, the economic policies advocated by Steve Bannon in the wake of the 2016 United States presidential election have been considered by some scholars and political commentators as a (partial) return to the economic nationalism of the Theodore Roosevelt Era.

The modern phenomenon of the European Union has in part led to a recent resurgence of economic nationalism. Western Europe as a whole has become more economically globalized since the end of World War II, embracing economic integration and introducing the euro. This did lead to positive economic impacts, such as steady wage increases. However, from the 1990s through the Great Recession, there has been an increasing distrust in this globalized system. With rising income inequalities and little protection against natural economic occurrences many Europeans have begun to embrace economic nationalism. This is because modern European nationalists see their nation's economy becoming generally more globalized at the expense of

one's own economic status. Globalization, like the type one can observe in the European Union, is easy to oppose as it creates winners and loser. Those who lost their jobs due to globalization are more likely to be drawn to parties espousing economic nationalism.

Although some European nations were impacted differently, nations that saw an increased exposure to the China trade stock did move significantly further right politically and generally supported more nationalist and protectionist policies.

10.7 Components of Public Finance

By and large, the subject matter of public finance encompasses the following areas:

- a. **Raising of Revenue:** This has to do with various sources from which the government derives its income. These include taxation, borrowing, minting of currency in selecting a source of revenue, consideration must be given to the relative advantages and disadvantages inherent it. For instance, taxation as sources of income involve the problem of incidence of taxation and its effects on the consumption pattern of the people cannot be overlooked.
- b. **Government Expenditure:** The government carries out its expenditure with a view to maximizing the social welfare of the citizens. This occurs at the point where social marginal benefit from expenditure. The quality of each activity brings about equi-marginal social benefit per unit of money spent to produce the goods and services.
- c. **Financial Administration:** This concerns the way the government administers its financial activities. These include the preparation and implementation of budget as well as the management of public debt.
- d. **Stabilization and Growth:** It is the responsibility for the government to curtail wide fluctuation in the prices of goods and services. This can be achieved through direct regulation. Alternatively, the government may decide to use its taxation and expenditure policies to influence the effective demand of the citizen.

10.8 Origin and Development of Public Finance

The existence and the development of the public finances are indissolubly connected with the emergence and development of the state and of the use of money and the value of the forms in the distribution of the gross domestic product (or national income). Conceptually, the word "finance has its origin in Latin. In the early centuries the XIII-XIV, were handled by the

expression, “finantio”, “financias”, “financia pecuniaria”, with meaning "payment in money". It is to be assumed that their origin derived from the word “finis” commonly used in the direction of "payment deadline" Meaning of the word has expanded gradually and has acquired in time, a very broad sense, including the state budget, credit, banking operations, those scholarships. etc.

The concepts of public finances have evolved continuously over the years and have been in close connection with the evolution of the state and of the role assumed by it in different stages. The concept of functions assigned public finance shall designate their ability to mediate (in optimal considered) direct achievement of certain economic processes expressed in the form of payment and carrying out the appropriate relations between participants, that and influencing how to complete them.

Most often, the functions of public finance shall be geared in training, distribution, and use of the funds of monetary resources (financial) available to the public in the context of the activities of the economic and social situation in which they are involved public authorities.

10.9 Allocation of Resources in Public Finance

- i. Resource allocation** is the distribution of finite resources to specified purposes selected from among several feasible possibilities. However, no society has endless resources; resources are limited. Because they're limited, it is vital to choose which commodities and services to create in order to assure efficiency.
- ii. Allocation of resources** is an apportionment of productive assets among different uses. Resource allocation arises as an issue because the resources of a society are in limited supply, whereas human wants are usually unlimited, and because any given resource can have many alternative uses. In free-enterprise systems, the price system is the primary mechanism through which resources are distributed among the uses most desired by consumer in planned economies and in the public sectors of mixed economies, the decisions regarding resource distribution are political. Within the limits of existing technology, the aim of any economizing agency is to allocate resources in a manner that obtains the maximum possible output from a given combination of resources.

How to Allocate Resources

Addressing three essential questions about resource allocation lets us know how to allocate the resources:

- i. What products and services should be produced?
- ii. How will such products and services be produced?
- iii. Who will get to have these goods and services?

i. **What products and services to produce?**

Out of the three, the first topic for society to address is, "What products and services should we create with our finite resources?" For example: Should there be more t-shirts made or more button-ups? Notebooks or planners? Ammunition or laptops? The answer to this is important because resources are limited, whereas needs and desires are not. While it's understandable that a lot of products and services are desired, unfortunately, society cannot produce everything that everyone wants - there are limits. There must be a decision made as to what is best to produce.

ii. **How to produce the products and services?**

The second topic to be addressed is how society's finite resources are utilized to generate products and services. For example: Should water be sold in plastic bottles or glass bottles? Are books to be made with new paper or recycled? Should there be more self-checkouts made for the stores or more human employees kept instead? The decision must be made as to how to allocate limited resources to which commodities. After all, not all products can be produced with the same resources.

iii. **Who gets the goods and services?**

The third of three allocation issues is, "Who obtains" the commodities and services created by society's resources?" Should all of the commodities be supplied to the best workers? Should products be allocated based on age? Income? What about the unemployed then? The production of products is constrained due to limited resources, and due to that, not everyone can get everything they want. There has to be a way to figure out who gets which products and by which criteria they get them.

Resource allocation is like combining several pieces of a puzzle. The intent is to make all of the pieces fit to show the big picture, and to show that all pieces are needed to make a whole. This is exactly what resource allocation does. It combines several factors at once in order to make everything work. All things need to be taken into consideration when it comes to resource allocation, in order to figure out where the resources are most needed.

10.10 Resource Allocation Strategies

Resource allocation techniques are the procedures used to allocate products and services. There are nine fundamental ways, and they are occasionally combined. They are:

1. **Command:** a central authority provides the product or service.
2. **Random:** the service or product is distributed at random, with everybody getting an equal chance of receiving it.
3. **Arbitrary characteristic:** a service or product is granted to an individual due to the fact that they fulfil particular criteria, such as age, location, ethnicity, sex, and so on. Because they can alter, the qualities are seen as arbitrary.
4. **Competition:** the item or service is given to the winner of a tournament, game, or event.
5. **Force:** someone takes the product or a service using legal or illegal means, such as stealing.
6. **Price:** the item or service is awarded to the individual capable and willing to pay more than anyone else for it.
7. **First-come, first-served:** the very first individual to claim a commodity or service, gets the resource. An example of this would be if there are only two copies of a popular book available for purchase. This would be first-come, first-served!
8. **Majority rule:** the individual who receives a majority (or occasionally a plurality) of votes, as in an election, receives the commodity or service.

Resource Allocation Examples

Let's run through example of resource allocation in order to get a clear picture of what it entails. Imagine you were to decide to remodel a room in your house. The questions to ask regarding resource allocation would be the following:

- Who are you going to hire?
- What types of materials are needed?
- What's your budget for the remodel?

- How much of your budget is going to go towards paying the workers and how much of it has to go towards materials?
- By when do you want the remodel to be done?

After you've completed answering all of those questions, there are still parts that need to be given attention. Let's say you wound up having three workers doing the remodel, two ladders, two tool-kits, two buckets of paint, and a deadline of a month. These are the resources. But who is going to remodel which part? Which two of the three workers get to use the tool kits? How are they to divide their time equally to get the remodel done in time? What is the optimum daily workload? These are all questions that needs to be answered.

One of the most critical components of resource allocation is assigning the appropriate people to a certain job. If you assign a basic, entry-level assignment to a skilled employee or a hard job to a new employee or trainee, you will not receive a great outcome. The cost would be unreasonably expensive in the first instance, and the latter would be stressful with disappointing outcomes.

10.11 Types of Resource Allocation

There are mainly two types of resource allocation that are focused on: continuous and one-time.

- Continuous:** It requires a steady intake of the resources necessary. To operate the organization, financial resources, for example, are required on a regular basis.
- One-time:** It indicates that resources are only assigned and used one time in a process. For example, technology and equipment is something that is only needed once, for a company to run its business; more of it is not needed every day. Thus, it is a one-time allocation.

10.12 Benefits of Resource Allocation

Effective resource allocation offers the following benefits:

- Collaboration:** Resource allocation helps facilitate communication among teams and fosters collaboration. A resource allocation strategy allows communication with stakeholders, to keep them informed about progress toward strategic goals.

- ii. **Efficiency:** Resource availability helps teams complete a project on time and use only the resources needed to achieve each goal. A solid resource allocation strategy helps project teams avoid mistakes related to conflicting dependencies.
- iii. **Team morale.:** Resource allocation improves employee engagement and team member morale. Resource allocation allows a more equitable distribution of responsibilities so that no team member is overworked. This approach can improve productivity because as team members' well-being is improved, they have the bandwidth and agency to take on additional work.
- iv. **Cost reduction:** Effective resource allocation can result in significant cost savings because it increases efficiency, reduces waste, and avoids costly mistakes, setbacks, and delays.

10.13 Challenges of Resource Allocation

There are also challenges associated with the resource allocation process, including the following:

- i. **Resource scarcity:** Sometimes there are not enough resources available to achieve the tasks laid out in the project plan. Some resources may only be partially available throughout the project. In other cases, project resources may be available at the beginning of a project but not later on as it progresses.
- ii. **Skill shortages:** If specific skills are in short supply, that can have a negative effect on the project. The additional training or hiring required can take time that may not be built into the project's schedule.
- iii. **Resource over-allocation:** Too many resources can also negatively affect efficiency and productivity. If more resources are allocated to a task than needed, employees may get overwhelmed trying to make use of them all.
- iv. **Visibility:** Poor visibility into the details of how a project is progressing can result in project managers not allocating the right resources where they're needed. A lack of visibility can also negatively affect a business's ability to forecast future project requirements, leading to future misallocation of resources. The lack of a centralized resource planning tool is often the cause of poor visibility.
- v. **Miscommunication:** Poor communication among team members or teams can cause a range of problems. For example, a common point of miscommunication is between the sales and delivery team. If the team delivering the product to the customer isn't informed

of all project requirements, it may not be able to ensure resources are properly allocated and the deliverables adhere to customer expectations.

- vi. **Outdated technology:** Legacy technology, such as a spreadsheet application, may not provide adequate real-time data for tracking. This can lead to missed opportunities or over-allocation of resources as project requirements shift.
- vii. **Scope creep:** Project scope can change at any point in the project lifecycle and lead to fluctuating resource demands. Scope creep is a change to the original goals or tasks of a project and can result in continuous changes or unsustainable growth in the project's scope. If requirements are continually added, resources may be exhausted, and team members can be negatively affected.

10.14 Rational and Function of Government Intervention in Public Finance.

What is Government Intervention?

Government intervention is when the government gets involved in the marketplace for the purpose of impacting the economy. It can often be a very controversial topic and is known to fuel political debate. Those that advocate for government intervention argues that the Law of Supply and Demand is not enough to keep the economy running smoothly, and this intervention will protect against abuses and guard the overall success of the economy.

They argue that it is a responsibility of the government to ensure the best interest of the people and do what is necessary to reduce or eliminate poverty and hardship. Others believe that government intervention is not the answer to every economic problem, and their involvement often does more harm than good.

The government has a number of tools at its disposal to intervene when problems arise. They may use regulations, funding, the creation of new government programs, and taxes or tax breaks. They can also intervene when there are natural disasters too big for local governments to handle. These kinds of disasters cause not only physical and humanitarian problems, but lingering economic problems as well.

Reasons for Government Intervention in the Economy

There are many reasons why the government might intervene in the economy. They may do so in order to promote fair competition or prevent monopolies. They may also intervene when

economic conditions or poverty are worsening, by taking steps to curb inflation or raise or lower interest rates. The government has historically intervened to correct social welfare issues with programs such as unemployment insurance, welfare programs such as the Temporary Assistance for Needy Families (TANF), Medicaid, and free education. They may also use taxes or tax breaks to redistribute income. For example, the Earned Income Tax Credit is a credit given to families with a low or moderate income to reduce their tax burden. The government may use regulations and laws to improve trade, provide public services and goods, or boost the economy.

There are other reasons the government might intervene. For example, they often intervene to protect people or the environment. There are laws to protect the safety of drinking water and air quality, and the use of certain products, such as lead or asbestos, in homes and buildings. In 1970, Congress created the Occupational Safety and Health Administration to ensure safe working conditions for workers. These ~~are~~ interventions do affect the economy, although their benefits are not merely financial.

The government may intervene through:

- Taxes or Tax Breaks
- Subsidies—A benefit given to an individual, business, or institution to relieve a burden or help the overall economy
- Price Controls—Minimum or maximum prices set to manage the affordability of certain goods, such as gas or rent
- Regulations—The Federal Trade Commission, The Food and Drug Administration (FDA)
- Federal Student Loan Programs.

Government Intervention Examples

A. Roosevelt's New Deal: When Franklin D. Roosevelt took office in 1933, he vowed to "wage a war against the emergency" of the Great Depression. His New Deal involved banking reform laws, emergency relief programs, work relief programs, and agricultural programs like farmer subsidies. These programs

expanded government control and set a precedent for government intervention in a struggling economy. Many of these programs still exist today.

B. Government Bailouts: In 2008, the United States was experiencing an economic crisis with a plummeting stock market and high unemployment. To further prevent problems, Congress authorized the Troubled Asset Relief Program, \$426 billion to be lent or invested in banks or corporations in order to slow the downward spiral and prevent further losses. General Motors and Chrysler, two American car manufacturers, were the recipients of 20% in exchange for structural changes to cut their costs. They were required to pay back a portion of the loans over time.

Supporters argued this was necessary to prevent disaster. Employment stabilized, and it has been estimated that the U.S. would have had 2.6 million fewer jobs in 2009 if the government had not stepped in. The government took a \$9 billion loss after the loans were paid back. However, that figure does not consider the billions of dollars in tax revenue that were saved by preventing the loss of those 2.6 million jobs.

C. Covid-19 Pandemic Relief: One example of a government intervention is when a failing industry receives funding from the government that helps them stay in business. These are sometimes referred to as government bailouts. In 2020, after the economy was reeling from a worldwide Covid-19 pandemic, President Donald Trump signed the Coronavirus Aid, Relief, and Economic Security (CARES) Act, which distributed more than \$2 trillion in assistance. This relief package included stimulus checks paid directly to Americans. In 2021, his successor, President Joe Biden, signed the American Rescue Plan, allotting another \$1.9 trillion in relief fundings.

Practice Questions

Multiple Choice Questions

1. The basis of similarities between public finance and private finance the following except one
 - A. Objectives
 - B. Principle
 - C. Motives

- D. Policy
2. Challenges associated with the resource allocation process include the following except
 - A. Resource over-allocation
 - B. Resources scarcity
 - C. Modern technology
 - D. Poor visibility
 3. The basis of differences between public finance and private finance the following except
 - A. Budgeting
 - B. Bankruptcy
 - C. Elasticity
 - D. Objectives
 4. The duration and nature of a private finance budget is usually
 - A. Yearly
 - B. Quarterly
 - C. Daily or weekly
 - D. All of the above
 5. Component of Public Finance include all the following except
 - A. Revenue generation
 - B. Government expenditures
 - C. Government policies
 - D. Financial administration
 6. Government financial administration activities include all except
 - A. Preparation of budget
 - B. Implementation of budget
 - C. Grants
 - D. Public debt management
 7. The scope of public Finance include the following except
 - A. Promotion of investment and savings
 - B. Enhance National export
 - C. Economic stability
 - D. Profitability
 8. Economic nationalism tends to emphasize
 - A. Globalization
 - B. Industrialization

- C. Privatization
 - D. None of the above
9. The duration and nature of a public finance budget is usually
- A. Yearly
 - B. Quarterly
 - C. Daily or weekly
 - D. Monthly
10. A government organization can only face one of the following except
- A. Liquidation
 - B. Wind up
 - C. Financial crises
 - D. Bankruptcy

Theoretical Questions

1. Define Public Finance and explain five features of Public Finance
2. Describe the Scope and Significance of Public Finance
3. Trace the Origin of Public Finance
4. Explain the basic Principles of Public Finance
5. Justify the rationale for Public Finance and briefly discuss the Government Machineries for Public Financing

CHAPTER 11

INTERNATIONAL TRADE AND INSTRUMENT

Learning Objectives:

After studying this chapter, candidates should be able to:

1. Understand the Meaning, Nature, and Scope of International trade
2. Trace the historical development of international trade
3. Justify the reasons for international trade and be familiar with its relevant concepts
4. Identify the Prevailing problems and Challenges of International Trade

5. Describe the terms and documentations in International Trade and determine the best term of Payment and Settlement, and
6. Have a vivid understanding of the different Exchange Rates

11.1 Introduction

International trade and production are a way of life for business managers today. All over the world large numbers of business people find that foreign trade is an importance part of their total activities' countries rely on foreign countries for much of their raw materials or sell a significant portion of their output abroad.

International trade makes available a range of materials and process that could not conceivably exist in one restricted. Webster's New encyclopaedia dictionary defined trade as exchange, interchange or barter.

International trade therefore means the commercial transaction or exchange that occurs between two or more countries. Countries trade because they are different from each other. Countries can benefit from their differences by reaching arrangement in what each does or naturally endowed. International is different from domestic trade which takes place within a country and uses local currency.

11.2 Definition of International Trade

International trade is the exchange of capital, goods and services across international borders or territories. International trade is the trade that takes place between one country and other countries. i.e. it is a trade transaction that takes place between one or more countries. It is different from domestic trade which takes place within a country and uses local currency. International trade involves the use of international currency(ies) and to obtain this, one has to go through some procedures.

International trade to consists of transaction that are devised and carried out across national borders to satisfy the objectives of individuals and operations. International trade uses a variety of currencies, the most important of which are held as foreign resent by governments and central banks. Here the percentage of global cumulative reserves held for each currency between 1995 and 2005 are shown: the US dollar is the most sought-after currency, with the Euro in strong demand as well.

11.3 The Nature and Scope of International Trade

In most countries, international trade represents a significant share of Net National product and Gross Domestic Product. International trade as the meaning implicate has been presented throughout much of history, its economic social and political importance has been on the rise in recent centuries. Industrialization, advanced transportation, globalization, multinational corporations and outsourcing are all having a major impact on the international trade continuance of globalization. Without international trade, nations would be limited to the goods and survives produced within their own borders.

International trade is, in principle, not different from domestic trade as the motivation and the behaviour of parties involved in a trade do not change fundamentally regardless of whether trade is across a border or not. The main difference is that international trade is typically more costly than domestic trade. The reasons is that a border typically imposes additional costs such as tariffs, time costs due to border delays and cost associated with country differences such as language the legal system or culture. Another between domestic and international trade is that factors of production such as capital and labour are typically more mobile within a country than across countries. Thus, international trade is mostly restricted to trade in goods and services, and only to a lesser extent to trade in capital, labour or others.

11.4 Historical Development of International Trade

The barter exchange of products or services between groups of people is a long-established custom that predates the history of humanity. However, international trade particularly refers to a transaction between citizens of various countries, and accounts and explanations of such trade do not start until the end of the European Middle Ages, with the birth of the modern nation-state (although fragmented earlier talks). As political theorists and philosophers started to investigate the nature and purpose of international commerce, it became a focus of their investigation. Therefore, the discovery of one of the oldest forms of commerce is not surprising.

International trade has been in existence since ancient times. Even in the Bible references were made to trading activities between different countries. Illusion was made in the book of Genesis of sons of Jacob who went to Egypt to buy grains. With increase in civilization and traveling added to the known benefits of specialization and division of labour. International trade among countries of the world has even increased tremendously.

Even while early writers were aware of international commerce, they didn't consider it sufficiently distinct from domestic trade to require a separate theory. The classical hypothesis was initially proposed by Adam Smith, whose much-celebrated book "An Inquiry into the Nature and Causes of the Wealth of Nation" was published in 1776. International commerce, according to Ohlin (1933), should be viewed as a specific instance within the broader definition of international economics. He went on to say that countries trade for the same reasons that people or groups inside a country do, rather than each generating what they need independently. The reason is that they are enabled to exploit the substantial advantages of division of labour to their mutual advantage.

Trade between different countries developed first where one country could produce something desirable which others could not International trade. Therefore, owes its origin to the varying resources and climate of different regions

11.5 Basic Concepts and Reasons for International Trade

International trade refers to buying and selling of goods and services between countries e.g. between Nigeria and the United States of America, Ghana or Australia etc. In other words, the term "international trade" refers to exchange of goods and services that take place across international boundaries.

International trade is simply defined as the trade across the borders of a country. This may be between two countries, which is called bilateral trade or trade among many countries called multinational trade. International trade is to enable countries obtain the greatest possible advantage from the exchange of one kind of commodity or another.

Reasons for International Trade

This is simply the value of using a resource; measured in terms of the value of the best alternative for using that resource. International trade occurs because no one nation has the means to create everything in a high-quality manner. What must be sacrificed in order to manufacture a product determines what that country chooses to produce; in other words, whatever resources are used to make one product are no longer accessible to generate another. Opportunity costs are those things we have to give up in order to obtain more of what we desire, and they influence what goods different nations create for international commerce.

11.6 Comparison International Trade and International Business

International trade is a business transaction between the nationals of two different countries. For example, a Nigerian businessman can import a consignment of a product from a British producer. He needs not to know anything about the business environment of Britain. But opening an international business is more involving. The operator must study and understand the international business environment such as culture, a legal, economic factor which prevails in the environment he would want to locate his business.

11.7 Prevailing Problems of International Trade

Engaging in International trade is a sophisticated activity. It requires great corporate, personal and business skill, experience and knowledge. International trade is being influenced by the following problems.

Cultural differences: Deep cultural differences like social expectations, manners and methods of doing business can be persistent problems to a country who is about to enter into a bilateral or multilateral agreement.

Currency problem: Trading between sovereign nation creates financial complications because currencies are not of equal value and the rate of exchange between currencies are not fixed.

Legal protection: Countries frequently use legal tools to restrict international trade. The terms tariff, quota, and embargo are examples. These safeguarding tariffs and quotas are intended to support domestic industry growth and shield it from price competition from international firms.

11.8 Forms of International Trade

There are a number of ways in which nations can participate in international trade. This form of international trade involves soliciting orders from foreign countries for goods and services that are made in a country and then shipped abroad. For example, without international trade, the market for the Nigerian crude oil, columbite, cocoa, rubber, etc would have been limited to domestic economy. Export of goods and services act as foreign exchange earners to the domestic economy. Foreign exchange availability is essential requirement for the survival of any national income.

11.9 International Capital Flow

International Cash Flow means all amounts actually received (or deemed to be received by the LLC pursuant to the provisions of the Operating Agreement) by the LLC from AAG under the terms of the Main License (other than payments in respect of the domestic exploitation of Programs).

Sample 1 Based on 1 documents Free Cash Flow means any available cash for distribution generated from the net income received by a Series, as determined by the Managing Member to be in the nature of income as defined by U.S. GAAP, plus:

- (i) any change in the net working capital (as shown on the balance sheet of such Series)
- (ii) any amortization to the relevant Series Asset (as shown on the income statement of such Series) and
- (iii) any depreciation to the relevant Series Asset (as shown on the income statement of such Series) and
- (iv) any other non-cash Operating Expenses less
 - (a) any capital expenditure related to the Series Asset (as shown on the cash flow statement of such Series)
 - (b) any other liabilities or obligations of the Series, in each case to the extent not already paid or provided for and
 - (c) upon the termination and winding up of a Series or the Company, all costs and expenses incidental to such termination and winding as allocated to the relevant Series.

11.10 Facilities of Export Financing Market

Export business requires sustainable funding over a period of time. The amount of money needed for export is largely dependent on your product and export destination(s). It is therefore vital to ensure that appropriate financing options are explored.

- Five tips for financing
- Seek advice from bankers, financial and export experts
- Explore available government grants and loans
- Grants and loans can be accessed from multilateral organizations and private parties.
- Explore available financing options with NEXIM and financial Institutions.
- Marketing & market entry costs
- Your export budget should cover all costs of marketing your products or services

abroad, including the costs of market entry. Specific costs include:

- Hiring competent staff member(s) for the export business
- Visit(s) to your targeted export destination(s)
- Advertising/Publicity cost

11.11 Payment methods and System

There are different payment methods available in international trade. The main options are:

- Documentary credit (e.g. Letter of Credit)
- Open account (e.g. advanced payment, cash against document, deferred payment)
- Documentary collections (e.g. Bills of collection)
- To ensure repatriation of your export proceeds, it is advisable to consult a financial adviser for appropriate payment options.
- Funding options
- Funding options in export financing include:
 - Loans (commercial banks / family and friends)
 - Self-financing and Joint ventures.
 - Support from financial institutions

11.12 Terms of Trade

Terms of trade is a quantitative measure of the rate at which a country's export exchange for its imports. It is a measure of the purchasing power of its exports expressed in its imports or, alternatively, the price of its imports expressed in terms of its exports. The term of trade is said to be favourable if for some given imports a country pays with smaller exports, or if for some given exports, it gets more imports. Though, the gains from international trade brings about increase in output, except of course Portugal is able to trade some cloth for wine, workers in Portugal will not get much work done, the same applies to England.

Without trade, workers in England will not get much done. But how much cloth must England give in exchange for Portuguese wine is a question that is very much decided by countries terms of trade. In other words, terms of trade is basically expressed as a relationship between a unit prices of a country's export to a unit price of the country's import. In the case of England and Portugal; terms of trade is how much of wine and vice versa.

Essential Features of Terms of Trade

An average: It should be carefully noted that when a country is trading in more than one item a measure of its terms of trade represents an average with prices of individual items of trade scattered around. This is because the measure is derived with the help of price index numbers, which are themselves average of scattered values.

A Derivative: Being a derivative of price index numbers, a measure of terms of trade is bound to suffer from all the limitations which are inherent in the compilation of price index numbers. E.g. choice of base period, the choice of weights, the method of averaging, and so on.

Measures of Terms of Trade

Change in a country's terms of trade has some direct and indirect effect on economic gains from trade, economic growth and potential, and its social welfare. If we take into consideration these "spill-over" effects, several alternative concepts of terms of trade come up for consideration. Hence there exists a plethora of measures of terms of trade going by different names.

Commodity terms of trade (TTC)

This is the most popular measure and it is also known as Net Barter Terms of trade or the unit value index. It is the ratio of the price index number of exports to the price index of imports of the country concerned.

Symbolically, this ratio may be written as: $TTC = \frac{P_x}{P_m} \times 100$

Means of Settlement

A settlement is a colony or any small community of people. If a bunch of people build houses on the moon together, they'll have the first lunar settlement. A settlement is also the resolution of something such as a lawsuit.

Settlement is a place where people live. But it also includes the people who live there, the buildings, the roads, streets and pathways which link up the buildings in the settlement and through which the people communicate.

A settlement has a *site* and a *location*. The site is the land area on which the settlement is built, it can be at the base of a hill, by a riverside or a plain. The location is its position in relation to other cultural features or settlement in the region. Let me use major cities in my country as an example. For instance, when we say that Abuja (the capital of Nigeria) is sited on an undulating plain at the foot of Aso rock, we are describing its site. But when we say that it is located at the

centre of the country and nearly equidistant by air from Lagos, Maiduguri, Sokoto and Calabar, we are describing its location.

Classification of settlements

Settlement is primarily classified according to their *pattern*, *size* and *housing density*. They can also be classified according to the *functions* they perform.

Classification according to pattern

There are five types of settlements classified according to their pattern, these are, isolated, dispersed, nucleated, and linear.

In **isolated settlement** consists of a single farm or house very remote from any other one, usually found in farming or hunting rural communities.

A **dispersed settlement** is made up of several houses, scattered or dispersed (as the name implies). One house may be up to one or more kilometres from the next. This type of settlement is common in the Sahel.

In a **nucleated** or **compact settlement**, the buildings are clustered, linked by roads, and the settlement itself may have a nearly circular or irregular shape. Such settlements can be either cultural or urban, depending on the size and the functions they perform.

A **linear** or **elongated settlement** forms a straight or curved line, following a line of movement, such as a road, river, coastline or the foot of an elongated escarpment. This type of settlement is found in rural area, but linear developments may constitute extensions of towns on their outskirts.

Finally, the **integrated nucleated** and **linear** settlements combine the characteristics of both types of settlement and they are star-like. They often occur at junctions, and a number of them in urban settlements.

Classification according to size and housing density

Size and housing density are used together with settlement functions to classify settlements into major categories i.e. rural and urban. *Rural settlements* are often small in size and have low

housing and population densities. *Urban settlements* are larger in size and have many houses built close together.

Rural settlements can further be broken down into these four grades on the basis of size; homestead*, *farmstead*, *hamlet* and *village*.

A **single homestead** has just one compound, usually isolated and owned by a family, and one may be many kilometres from the next.

A **farmstead** consists of two or more homesteads, usually dispersed in a farmland and occupied by up to fifty individuals.

A **hamlet** is made up of several dispersed, nucleated or linear homesteads generally with shops, schools or other service centers and occupied by some hundreds of persons who are engaged in primary activities like farming, hunting and fishing.

A **village**, like a hamlet, may be dispersed, nucleated or both nucleated or linear, but the village has more homesteads and the population may be up to several thousands. The people engage in primary occupations, but there may also be craft and cottage industries, and service centers like schools, post offices, health centers and markets.

Urban settlements can equally be graded into four, according to size. These are towns, cities, conurbations and megapolis.

Towns are urban settlements of up to several thousand persons. Houses are built together and the emphasis is more on secondary and tertiary rather than on primary occupation. Usually, a town has large chain stores, and many other social and commercial facilities.

Cities are the major towns of a country, like the major state capitals which have administrative functions. The old concept of a city being a walled town is no longer tenable as cities are no longer walled these days. They are generally larger than towns.

A **conurbation** grows when two or more towns or parts have grown and joined together to form a large urban area of 1 million persons or thereabouts. The boundary between original towns becomes blurred, just like we have in Lagos (Ikeja) and Accra (Tema).

Megapolis are several cities or conurbations which have grown over the years and have joined together to form a massive sprawling urban settlement. Such settlements stretch over several

square kilometres and, as conurbations, it is difficult to know where one original city ends and the other begins. Megapolis is the highest in the hierarchy of urban settlements. Examples are New York-Boston-Philadelphia and Greater Los Angeles (USA), Tokyo (Japan), Greater London (Britain), Mexico City (Central America), and Dusseldorf-Duisburg-Essen-Dortmund, in the Rhur manufacturing region of Germany.

11.13 Corresponding Banking

A correspondent bank is an authorized financial institution that provides third-party services on behalf of another financial institution that's usually in another country. Correspondent bank services may include funds transfer, settlement, check clearing, wire transfers, and more.

A correspondent bank is a third-party financial institution that acts as an intermediary between domestic and international banks. Correspondent banks effectively act as an agent of a foreign bank to conduct business transactions with the domestic bank on its behalf.

They are able to provide a variety of financial services to both parties, including but not limited to, treasury services, processing international wire transfers, handling global investments, and trade financing. The correspondent bank charges a fee from the foreign bank for the services rendered.

Correspondent banks are able to act as a liaison since they typically have direct banking relationships with both the domestic and foreign banks. This enables them to provide services to both banks. Domestic banks commonly use correspondent banks to handle transactions that either originate or terminate in a foreign country.

How Does a Correspondent Bank Work?

Since correspondent banks are third-party banks, think of them as the middleman between two financial institutions. Without them, it wouldn't be possible for the domestic and foreign banks to process the transaction if they don't have a formal relationship.

The correspondent bank receives instructions to process a transaction such as a funds transfer, settlement, currency exchange, etc., along with the requisite funds. It relays that to the other bank, thereby executing the transaction.

Vostro and Nostro Accounts:

The Secret to Correspondent Banking. Banks rely on nostro and vostro accounts to keep track of the funds required for settling cross-border transactions. They typically have several nostro and vostro accounts on their balance sheets.

Nostro is Latin for “our” and in the terms of correspondent banking, it means “our account, on your books.” **Vostro** means “yours,” and in this case it stands for “your account, on our books.” It is these accounts that make it possible to track cross-border debit and credit transactions. So, when a domestic bank needs to transfer funds overseas, it will send the money into their nostro account at the correspondent bank. The transaction fee is deducted and the funds are transferred by the correspondent into the receiving bank’s vostro account.

Correspondent banks are key facilitators of global trade. Without them, domestic banks would be unable to provide the financial services that enable companies to conduct business on a global scale. It’s impossible for any bank to have a direct relationship with every other bank or open branches in every city across the globe. It’s only through the correspondent banking network that they’re able to tap into the global financial system for their clients.

11.14 Exchange Rate System

Exchange rate is the price of one currency expressed in terms of another currency. It is a vital macroeconomic indicator used in determining the overall performance of economies. It remains a key price variable in any economy and performs the dual role of maintaining international competitiveness and serves as a nominal anchor for domestic prices Mordi, (2006). The exchange rate is usually defined under two major conventions; the direct or indirect method. The direct convention expresses the exchange rate as the price of home currency in terms of one unit of foreign currency, e.g., N305=\$1, while the indirect convention expresses the exchange rate as the price of foreign currency in terms of one unit of home currency, for example, N1=\$0.003. These conventions are particularly important when emphasising the performance of a currency, that is, in terms of appreciation or depreciation, in relation to the exchange rate regime in practice, and in analysing a country’s monetary policy. Under the direct convention, as practiced in Nigeria, the exchange rate is assumed to appreciate or depreciate when the number of units of the naira decreases or increases, respectively, in relation to the foreign currency. The systems of exchange rate determination are known as exchange rate

regimes. Basically, there are two extreme cases of exchange rate regimes, namely, fixed and floating exchange rate systems.

Fixed Exchange Rate System

Under the fixed exchange rate system, the exchange rate is determined by administrative fiat/decree of government or monetary authorities like central banks. Foreign exchange is disbursed mainly through allocation or a rationing system usually associated with exchange controls. This system requires the maintenance of large external reserves to sustain its operations. Variants of the fixed regime include adjustable peg, crawling peg, and target zone/crawling bands.

Floating Exchange Rate System

A floating or flexible exchange rate system refers to a situation in which the exchange rate is determined by the forces of demand and supply of foreign exchange. In this circumstance, monetary authorities rely on the foreign exchange market to determine the exchange rate.

Practice Questions

Multiple Choice Questions

1. International trade is simply defined as
 - A. trading across the borders of a country.
 - B. trading within the borders of a country.
 - C. trading across the states of a country.**
 - D. trading between states and borders of a country.
2. The following are legal protection against international trade except
 - A. Tarrif
 - B. Quota
 - C. Tax**
 - D. Embargo
3. Payment term is documentation that details _
 - A. Instrument use for payment of goods and services**
 - B. how and when your customers pay for your goods or services.
 - C. terms and conditions

- D. where and whom your customers pay for your goods or services.
4. International trade involve
 - A. Importation of goods only
 - B. Exportation of goods only
 - C. Both importation and exportation**
 - D. Neither importation and exportation
 5. The use of tariffs and quotas are to encourage the growth of
 - A. Domestic industries**
 - B. Foreign industry
 - C. Foreign products
 - D. Domestic life
 6. Embargo means _
 - A. Encouraging importation
 - B. Encouraging exportation
 - C. Temporary ban on a certain product**
 - D. Temporary ban on all products
 7. Settlement is primarily classified according to them as
 - A. Pattern, size and forms**
 - B. Pattern, size and type
 - C. Pattern, size and housing density.
 - D. Pattern, size and type
 8. The quantitative measure of the rate at which a country's export exchange for its imports is.....
 - A. Balance of trade**
 - B. Terms of trade
 - C. Balance of payment
 - D. International trade
 9. A situation in which the exchange rate is determined by the forces of demand and supply of foreign exchange is referred to as.....
 - A. Fixed exchange rate
 - B. Floating exchange rate**
 - C. Fluctuating exchange rate

D. Sea exchange rate

10. is the price of one currency expressed in terms of another currency?

A. Currency rate

B. Spot rate

C. Flat rate

D. Exchange rate

Theoretical Questions

1. Define International Trade and its Scope

2. Trace the historical development of International Trade

3. Justify the reasons for international trade

4. Describe any five prevailing problems and challenges of International Trade

5. Describe the terms and documentations in International Trade

6. Discuss the different Exchange Rates

CHAPTER 12
BUDGETING AND BUDGETARY CONTROL

Learning Objectives:

After studying this chapter, candidates should be able to:

1. Understand the Budgeting process, Benefits of Budgeting, Advantages of Budgetary control, and Limitations of budget.
2. Prepare different types of Budgets i.e., Cash Budget, Flexible Budget, Functional Budget etc.
3. Compare budgeted with actual expenses and advice Management on the best way of dealing with the differences.
4. Understand the meaning of Zero based, Incremental, Activity based system of Budgeting and be familiar with the benefits and limitations of budgeting and
5. Understand the terminologies of Budget Manual, Budget Period, Budget Officer, Budget Committee and Budget factor.

12.1 Introduction

Budgeting is essentially a process of planning and controlling and the need for it is constantly on the increase because of the growing complexity in the business environment and competition in the industrial set up. A budget is defined as a formal expression of plans, goals and objective of management that covers all aspects of operation for a designated time period. The budget is a tool of providing targets and direction. Budget also allocates funds to achieve desired outcome. At the most basis level it is a legal document that gives local government official the authority to incur obligation and pay expenses.

12.2 Definition of Budget and Budgeting

A budget is a quantitative statement, for a period of time which may include planned revenues, expenses, assets, liabilities and cashflow. A budget provides a focus for the organization, aids the coordination of activities and facilities control. Budgeting is about making plans for the future, implementing those plans and monitoring activities to see whether they conform to the plan.

12.3 Forecasts and Budget

Budgeting and forecasting are both the key tools for steering your business although they serve different purpose, both the budget and the forecast help you manage and provide most value when used together. Accurate forecasting can give a major competitive advantage by helping to reduce uncertainty and make critical decisions.

12.4 Advantages/Benefits of Budgets and Budgeting

- i. Provide overall guidelines for achieving corporate objectives
- ii. It formalizes planning
- iii. Coordinate the various activities of an organization
- iv. Provide basis for performance evaluation
- v. Aids communication both from top down and bottom up
- vi. Provides a basis for monitoring and controlling costs and revenue

12.5 Disadvantages/Limitations of Budgets and Budgeting

- i. Time consuming and costly
- ii. Rigidity
- iii. Lack of realistic data can make the whole budgeting system useless

- iv. Political instability can make budget unattainable
- v. Unattainable target can act as disincentive to workers
- vi. Changing environment factor can also affect budget
- vii. Budget may restrict a company to follow only one plan of action.

12.6 Preparation and Monitoring of Various Types of Budgets

12.6.1 Fixed Budget

According to C.I.M.A. London “a fixed budget is a budget designed to remain unchanged irrespective of the level of activity actually attained”, Fixed budget is used as an effective tools of cost control. In case the level activity attained is different from level of activity for budgeting purpose, the fixed budget becomes ineffective because it does not give due consideration to cost behaviour at different level of activity. A fixed budget is not effective for evaluating the performance of cost Centre.

Features of Fixed Budget

1. It is prepared for one level of activity
2. It does not change with the change in the level of activity.
3. Expenses are not classified into fixed, variable and semi variable.

12.6.2 Flexible Budget

According to C.I.M.A. London “a flexible budget is a budget that recognizes the existence of fixed, variable and semi variable costs and is designed to change in relation to the actual volume of output for a period. In flexible budgetary control system, a series of budget is prepared one for each a number of alternative production level or volume. It is more realistic and practicable because it gives due consideration to cost behaviour at different level of activity.

Features of Flexible Budget

1. It is prepared for a range of activity levels instead of a single activity level
2. Provides a basis comparison.
3. It helps manager in choosing among various ranges of activities for planning.
4. It is helpful both before and after the budget period

Advantages;

1. The flexible budget is especially useful in businesses where costs are closely aligned with the level of activity.
2. Flexible budgeting can be used to more easily to update budget for which revenue or other activity figure have not yet been finalized.
3. Flexible budget restructure itself based on activity level, it is a good tool for evaluating the performance of the budget.

Disadvantages;

1. It is difficult to formulate and administer because many cost are not fully variable.
2. There is no comparison of budget to actual revenue since two number are the same

Preparation of a Flexible Budget

The preparation of a flexible budget requires the analysis of total costs into fixed and variable components. This analysis of course is, not unusual to the flexible budgeting, is more important in flexible budgeting then in fixed budgeting. This is so because in flexible budgeting, varying levels of output are considered and each class of overhead will be different for each level. Thus,the flexible budget has the following main distinguishing features:

- a. It is prepared for a range of activity instead of a single level.
- b. It provides a dynamic basis for comparison because it is automatically related to changes in volume.

The formulation of a flexible budget begins with analysing the overhead into fixed and variable cost and determining the extent to which the variable cost will vary within the normal range of activity. In a simple equation form it could be put as:

$Y=a+bx$ and it is illustrated as below:

Cost	Flexible budget		$Y = a + b x$
Fixed	N5000	+	$N 0(x)$
Variable	N0	+	$N2.5(x)$
Semi-Variable	N500	+	$N1.0(x)$

	N5500	+	N3.5(x)
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There are two methods of preparing such a budget:

Formula Method / Ratio Method: This is also known as the Budget Cost Allowance Method. In this method the budget should be prepared as follows:

Before the period begins:

- a. Budget for a normal level of activity.
- b. Segregate into fixed and variable costs,
- c. Compute the variable cost per unit of activity

At the end of the period:

- a. Ascertain the actual activity
- b. Compute the variable cost allowed for this level, add the fixed cost to give the budget cost allowance.

The whole process is expressed in the formula:

Allowed cost = Fixed cost + (Actual units of activity for the period) (Variable cost per unit of activity)

2. **Multi-Activity Method:** This method involves computing a budget for every major of activity. When the actual level of activity is known, the allowed cost is found "interpolating" between the budgets of activity levels on either side.

Different levels of activity are expressed in terms of either production units or sales values. The levels of activity are generally expressed in production units or in terms of sales values. The fixation of the budget cost gives allowance for the budget centres. According to CIMA London, the budget cost allowance means, "the cost which a budget centre is expected to incur during a given period of time in relation to the level of activity attained by the budget centre." The determination of the different levels of activity for which the flexible budget is to be prepared.

3. **Graphic Method:** In this method, estimates of budget are presented graphically. In this, costs are divided into three classes, viz., fixed, variable and semi-variable cost. Values of costs are obtained for different levels of production. These values are signified in the form of a graph.

Model of Flexible Budget

Particulars	Capacity Utilization		
	60%	80%	100%
1. Prime Cost:			
- Direct Material	-	-	-
- Direct Labour	-	-	-
- Direct expenses (if any)	-	-	-
Total (A)	-	-	-
2. Variable overheads:			
- Maintenance & repairs	-	-	-
- Indirect Labour	-	-	-
- Indirect Material	-	-	-
- Factory overheads	-	-	-
- Administrative Overheads	-	-	-
- Selling & distribution O/H	-	-	-
Total (B)	-	-	-
3. Marginal Cost (A + B)	-	-	-
4. Sales	-	-	-
5. Contribution (Sales - MC)	-	-	-
6. Fixed cost			
- Factory overheads	-	-	-
- Administrative Overheads	-	-	-
- Selling & distribution O/H	-	-	-
Total (C)	-	-	-
7. Profit or Loss (C- FC)	-	-	-

12.7 Cash Budget

A cash budget is one of the most important budgets prepared in an organization. It shows in summary form, the expected receipt and cash payment during the budget period. Cash budgeting is a continuous activity with budgets being rolled forward as time progress, the budget is sub-divided into reasonable short periods-months or weeks. Cash budget are prepared in order to ensure that there will be just sufficient cash in hand to cope adequately with budgeted activity.

12.7.1 Importance of Cash Budget

Cash budgeting focuses attention on the short-run aspect of financial management i.e. the day-to-day handling of each resources. The cash budget indicates the effect of the budgeted activities on the flows of liquid resources.

1. It identifies period of potential deficits and surplus
2. It shows the financial feasibility of plans
3. It indicates the financial effect of policies
4. It formalizes planning
5. It provides a base for monitoring actual cash receipt and payments\

12.7.2 Advantages of Cash Budget:

Usage of Cash: Management can plan out the use of cash in accordance with the changes of receipt and payment. Payments can be planned when sufficient cash is available and continue the business activity with the minimum amount of working capital.

Allocation for Capital Investment: It is dual benefits such as capital expenditure projects can be financed internally and can get an idea for cash availability of capital investment.

Provision of Excess Funds: It reveals the availability of excess cash. In this regard management can decide to invest excess funds for short term or long term according to the requirements in the business.

Pay-out Policy: This budgetary system may help the management for future pay-out policy in the form of dividend. In case the cash budget liquid position is not favourable, the management may reduce the rate of dividend or maintain dividend amount or skip dividend for the year.

Provision for acquiring Funds: It gives the top-level management ideas for acquiring funds for particular time duration and sources to be explored.

Profitable Use of Cash: Business person can take decision for the best use of liquidity to make more profitable transaction. It can be used at the time of bulk purchase payments and one get the benefit of discount.

12.7.3 Limitation of Cash Budget:

- 1) **Complex Assumption:** Business is full of uncertainties, so it is very difficult to have near perfect estimates of cash receipts and payments, especially for a longer duration. It can be predicted for short duration such as of three to four months.
- 2) **Inflexibility:** If the finance manager fails to show flexibility in implementing the cash budget, it will incur adverse effects. If the manager follows strictly adheres to the estimates of cash inflow it may negatively result in losing customers Likewise, loyalty in payments may lead to deterioration of liquid position.
- 3) **Costly:** Application of this technique necessitates collecting of statistical information from various sources and expert personnel in operation research would be the costliest deal. It becomes expensive which may not be affordable to small business houses. In addition, finding out experts is not always possible. In this situation the long-term predictions do not prove correct.

12.7.4 Methods:

- 1) **Receipt and payment:** It is most popular and is universally used for preparing cash budget. The assumption of statistical data is arrived at calculated on the basis of requirements like monthly, weekly or fortnightly. On account of elasticity, this method is used in forecasting cash at different time periods and thus it helps in controlling cash distributions.
 - (a) Cash receipts from customers are based on sales forecast. The term of sale, lag in payment etc., are generally taken into consideration.
 - (b) Cash receipts from other sources, such as dividends and interest on trade investment, rent received, issue of capital, sale of investment and fixed assets.
 - (c) Cash requirements for purchase of materials, labour and salary cost and overhead expenses based on purchasing, personnel and overhead budgets.
 - (d) Cash requirements for capital expenditure as per the capital expenditure budget.
 - (e) Cash requirements for other purposes such as payment of dividends, income-tax

liability, fines and penalties.

(i) **Estimating Cash Receipts:** Generally main sources of cash receipts are sales, interest and dividend, sales of assets and investments, capital borrowings etc. The Company estimates time-lag on the basis of past experience of cash receipts on credit sales while cash sales can be easily determined.

(ii) **Estimating Cash Payments:** It can be decided on the basis of various operating budgets prepared for the payment of credit purchase, payment of labour cost, interest and dividend, overhead charges, capital investment etc.

- 2) **Adjusted Profit and Loss Account:** This method is based on cash and non-cash transactions. This method estimates closing cash balance by converting profit into cash. The hypothesis of this method is that the earning of profit brings equal amount of cash into the business. The net profit shown by profit and loss account does not signify the actual cash flow into the business. This also leads to another assumption, that is the business will remain static, i.e. there will be no wearing out or increase of assets and changes of working capital so that the total cash on hand for the business would be equal to the profit earned.
- 3) **Budgeted Balance Sheet Method:** This method looks like the Adjusted Profit and Loss Account method only, except that in this method a Balance Sheet is projected and in that method Profit and Loss Account is adjusted. In this method Balance Sheet is prepared with the projected amount of all assets and liabilities except cash at the end of budget period. The cash balance will find out balancing amount. If the assets side is higher than the liability side, it would be the bank overdraft, But if the obligation side is more than the asset side, the bank balance results. This method is used by the stable business houses.
- 4) **Working Capital Differential Method:** It is based on the estimate of working capital. It begins with the opening working capital and is added to or deducted from any changes made in the current assets except cash and current liabilities. At the end of the budget period balance shows the real cash balance. This method is quite similar to the Balance Sheet method.

12.7.5 Model of Cash Budget

Part	January	February	March
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Opening Balance	-	-	-
Add: Receipts:			
Cash Sales	-	-	-
Receipts from Debtors	-	-	-
Interest and Dividend	-	-	-
Sale of fixed assets	-	-	-
Sale of Investments	-	-	-
Bank Loan	-	-	-
Issue Shares & Debenture	-	-	-
Others	-	-	-
Total Receipts (A)	-	-	-
Less: Payments			
Cash Purchases	-	-	-
Payment to creditors	-	-	-
Salaries & wages	-	-	-
Administrative expenses	-	-	-
Selling expenses	-	-	-
Dividend payable	-	-	-
Purchase of Fixed Assets	-	-	-
Repayment of Loan	-	-	-
Payment of taxes	-	-	-
Total Payments (B)	-	-	-
Closing Balance (A - B)	-	-	-

12.8 Budgeting Techniques

12.8.1 Zero Based Budgeting

Zero based budgeting is a cost-benefit approach whereby it is assumed that the cost allowance for an item is Zero and will remain so until the managers responsible justifies the existence of the cost items. This is a budgeting technique used in developing a budget without any reference to past performance. Zero based budgeting is a wise idea to preserve financial resources and make money work more effectively. It is a method of budgeting which requires each cost element to be specifically justified as though the activities to which the budget related have been undertaken for the first time without approval of the budget allowance is zero.

The use of ZBB was pioneered by Peter A. Phyrre in the United States in the earlier 1970's and has gained wide acceptance probably because it is simple based on common. ZBB is concerned with the evaluation of the cost and benefit of alternative.

ZBB Application

ZBB can be applied to both profit and non-profit seeking organization. The technique gained wide publicity when the president Carter directed that all US government department to adopt ZBB. In a manufacturing firm, ZBB is best applied to services and support expenditure including finance and accounting, production planning and so on. These activities are less easily quantifiable by conventional method and are more discretionary in nature.

ZBB Implementation

There are several formal stages involved in implementing a ZBB system but of greater importance is the development of an appropriate questioning attitude by all concerned. There must be a value for money approach which challenges existing practice and expenditure and searching question must be asked at each stage typically of which are the following;

1. Does the activity need to be carried out at all cost? What would be the effect if any of it is carried out?
2. How does the activity existing or proposed contribute to the organization objectives?

Why Zero-Based Budgets are Used

ZBB budgeting allows resources to be used based on the needs rather than the traditional model of history. This in turn helps employees and managers to become more efficient and search for way to improve their operating procedure instead of relying on funding based on previous performance. This also helps to improve corporate communication and employee motivation by providing incentive-based financing. In addition, it can aid in finding areas of the business that are expensive and indicate more cost-effective ways of dealing with the problem.

Advantages of Zero-Based Budget

1. Activities are evaluated and justified
2. Efficient allocation of scarce resources is enhanced
3. It focuses attention on the value for money and makes explicit their relationship between input of resources and the output of benefit.
4. Management attention is focused on activities that warrant actions
5. Performance of manager can be monitored effectively.
6. Managerial cooperation and involvement are stipulated

Disadvantages of ZBB

1. It requires extra paper and time consuming
2. Application is discretionary cost item only
3. High initial cost outlay for implementation
4. It may emphasis short term benefit to the detriment of longer-term ones which in the end me be more important.

12.8.2 Rolling/Continuous Budgets: A rolling budget (also known as a continuous budget); is a perpetual budget or a rolling horizon budget. The budgeting technique involves the process of preparing a budget that is more realistic and certain by shortening the periods between preparing the budget. It is a system of updating budgeting so that there is always a revision of budgeted data based on current experience. A rolling budget could be using 3-month periods or quarters instead of month. Also, a company might have a 5-years rolling budget for capital expenditures. In the case a full year will be added to replace the year that has just ended. The 5-year rolling budget means the management will always have a 5-years planning horizon.

Advantages of Rolling/Continuous Budget

1. **Flexibility:** - The rolling budget incorporates changes from the previous period in the next overlapping period, increasing continuity and oversight.
2. **Responsiveness:** - Rolling budget help organization to be more responsive to unexpected changes and allows adjustment for those changes in the coming period.

Disadvantages of Rolling/Continuous Budget

1. **Administration:** - A disadvantage of a rolling budget is that it is similar to preparing a new budget again, such budget requires you to regularly gather the facts from the previous period.

2. Rolling budget require robust information system and skilled personnel to extract accurate information for the various subcategories.
3. Preparation of rolling budget is not advisable when the circumstance conditions are not constantly changing.
4. **Time frame:** - if an employee's performance is assessed based on rolling budgets, it may limit opportunities for the employees to achieve target before the budget is altered.

12.8.3 Incremental Based Budgeting System

Incremental budgeting start with a budget from previous period. The business uses this previous budget as a basis for calculating the new budget. They take the old budget and add to or subtract from the total to come up with a budget for the upcoming period.

Incremental budgeting result in such a conservative mind set in business that it may actually be a noticeable driver in destroying a company over a long term. A company should instead engage in a thorough strategic re-assessment of a business when constructing a budget as well as a detailed investigation of expenditure. The result should be significant changes in the allocation of funds from period to period, as well as targeted operational changes that are intended to improve the competitive position of a business.

Advantages of Incremental Budgeting

1. **Simplicity:** - The primary advantage is the simplicity of incremental budgeting, being based either on recent financial result or a recent budget that can be readily verified.
2. **Fund Stability:** - if a program requires funding for multiple years in order to achieve a certain outcome, incremental budgeting is structured to ensure that funds will keep flowing to the program.
 - a. **Operational Stability:** - This approach ensures that departments are operated in a consistent and stable manner for long period of time.
 - b. The budget is stable and change is gradual
 - c. Co-ordination between budgets is easier to achieve
 - d. The impact of the change can be seen quickly.

Disadvantages of Incremental Budgeting

1. Assume activities and method of working will continue same way
2. No incentive for developing new ideas
3. No incentives to reduce costs
4. Encouraging spending up to the budget to that the budget is maintained next year.
5. The budget may become out of date and no longer relate to the level of activity or type of work being carried out.
6. The priority for resources may have changed since the budgets were set originally.

12.8.4 Performance Based Budget

A performance-based budget is one which represent the purposes and objectives for which fund are required, the cost of the programmes proposed for achieving those objectives and quantities data measuring the accomplishments and work performed under each Programme. Performance budgeting provides a meaningful relationship between estimated inputs and expected output as an integral part of the budgeting system.

12.8.5 Activity Based

Activity-based budgeting is a type of budgeting that works differently from the traditional form of cost-based budgeting. With this form of budgeting, companies are taking a look at the activities that are performed by the company instead of merely looking at cost. They will be able to assign a specific cost or value to each activity that they engage in by doing this, they will be able to get a more accurate picture of what is going on their business. Activity based budgeting is an outright of activity-based costing (ABC), which is similar to zero based budgeting. This budget types account for how a staff member allocate their effort among activities.

12.9 Budgetary Control

This is the establishment of budget, relating the responsibility of management to the requirement of a policy and a continuous comparison of actual with budgeted results either to secure by individual action, the objective of that policy or to provide a basis for its revision. Budgetary control is a comparison of actual operation results with

budget in order to determine if activities are being carried out in accordance to plan and if not certain whose responsibility and the reason for deviations.

12.10 Significance/Importance/Objectives of Budgetary Control

The objective of the organization will be defined in the long-term strategic plan and will be the primary purpose towards which the organization is directing its activities. They may include socially desirable objective such as the provision of employment opportunities or preservation of the environment.

The objectives of Budgetary Control are:

1. To plan and control income and expenditure in order to achieve maximum profit
2. Ensure the sufficient working capital is available for the efficient operation of the business.
3. To direct capital expenditure in the most profitable direction
4. To centralize control
5. To decentralize responsibility to each manager
6. To provide yardstick against which actual result may be compared
7. Coordinate all action of the organization
8. Aid management in decision making when unforeseen circumstances/conditions that affects the budget.
9. To coordinate the various activities of the business.
10. To take necessary corrective action.

12.11 Advantages/Benefits of Budgetary Control

- i. Provide overall guidelines for achieving corporate objectives
- ii. It formalizes planning
- iii. Coordinate the various activities of an organization
- iv. Provide basis for performance evaluation
- v. Aids communication both from top down and bottom up
- vi. Provides a basis for monitoring

12.12 Disadvantages/Limitations of Budgetary Control

- i. Political instability can make budget unattainable
- ii. Unattainable target can act as disincentive to workers
- iii. Changing environment factor can also affect budget

- iv. Budget may restrict a company to follow only one plan of action.

12.13 Types of Budget Control Ratios

The following ratios are usually used by management in measuring and controlling operations. These ratios provide information about performance level and extent of deviation of actual performance from budgeted performance. If the ratio is more the 100% performance is favourable otherwise unfavourable.

Capacity Usage Ratio

This is the relationship between the budgeted number of working hours and the maximum possible number of working hours in a budget. That is:

$$\text{Capacity Ratio} = \frac{\text{Budgeted Hours}}{\text{Max possible Hrs in the budgeted period}} \times 100$$

Activity Ratio

This is the number of standard hour's equivalent to work produced expressed as a percentage of the budget of standard hour That is

$$\text{Activity Ratio} = \frac{\text{Standard Hour}}{\text{Budgeted Hour}} \times 100$$

Efficiency Ratio

This is the standard hour equivalent of work produced expressed as a percentage of the actual hour spent in production. That is:

$$\text{Efficiency Ratio} = \frac{\text{Standard Hour}}{\text{Actual Hour}} \times 100$$

Calendar Ratio

This is the ratio that indicates whether all budgeted working days in a budget period have been available in actual practice.

$$\text{Calendar Ratio} = \frac{\text{Number of actual working days in a period}}{\text{Number of working days in the budget period}} \times 100$$

Idle Time Ratios

This term “idle time refers to the period of time during which an asset, despite being available for operation is not engaged in any productive work.”

Illustration 1

The following data is provided for *NELSON* Limited.

Standard working hours	8 hours per day of 5
Maximum capacity	50 employees
Actual working	40 employees
Actual hours expected to be worked per 4 weeks	6,400 hours
Standard hours expected to be earned per 4 weeks	8,000 hours
Actual hours worked in the 4 weeks period	6,000 hours
Standard hours earned in the 4 weeks period	7,000 hours

The related period is of 4 weeks. In this period there was a one special day holiday due to events. You are required to calculate budget ratios.

Solution

Workings

Maximum capacity in a budgeted period =

50 employees x 8 hours x 5 days x 4 weeks = 8,000 hours

Budgeted hours = 40 employees x 8 hours x 5 days x 4 weeks = 6,400

Actual hour = 6,000 hours

Standard hours for actual output = 7,000 hours

Budgeted number of workdays = 20 days (4 weeks x 5 days)

Actual number of days = 19 days

$$\begin{aligned}
 \textit{Activity Ratio} &= \frac{\text{Standard Hour}}{\text{Budgeted Hour}} \times 100 \\
 &= \frac{(7,000 / 6400) \times 100}{1} = 109.38\%
 \end{aligned}$$

$$\begin{aligned}
 \textit{Efficiency Ratio} &= \frac{\text{Standard Hour}}{\text{Actual Hour}} \times 100 \\
 &= \frac{(7,000 / 6,000) \times 100}{1} = 116.67\%
 \end{aligned}$$

$$\begin{aligned}
 \textit{Capacity Ratio} &= \frac{\text{Budgeted Hours}}{\text{Max possible Hrs in the budgeted period}} \times 100 \\
 &= \frac{(6,400 / 8,000) \times 100}{1} = 75\%
 \end{aligned}$$

12.14 Pre-Requisites/Preliminaries for the Adoption of a System of Budgetary Control.

For the successful implementation of a system of budgetary control certain pre-requisites are to be fulfilled. They are summarised below:

1. There should be an organisation chart laying out in clear terms the responsibilities and duties of each level of executives and the delegation of authority to the various levels.
2. The objectives, plans, and policies of the business should be defined in clear cut and unambiguous terms.
3. The budget factor or the key factor(s) which will be the starting point of the preparation of the various budgets should be indicated.
4. For formulation and efficient execution of the plan, a Budget Committee should be set up.
5. There should be an efficient system of accounting to record and provide data in line with the budgetary control system.

6. There should be a proper system of communication and reporting between the various levels of management.
7. There should be a Budget Manual wherein all details regarding the plan and its procedure of operation are given as also the length of the budget period.

12.15 Installation of Budgetary Control System

The following steps should be considered in detail for sound budgets and for successful implementation of the budgetary control system.

Organisation Chart:

An organisational chart is a statement defining functional representatives of executives responsible for accomplishment of organisational objectives. This chart shows:

- a. Functional responsibility of a particular executive.
- b. Delegation of authority to various levels.
- c. Relative position of a functional head with heads of other functions.

Budget Centre:

A budget centre is a section of the organisation of the undertaking defined for the purpose of budget control. Budget centre should be established for cost control and all the budgets should be related to cost centres. Budget centres will disclose the sections of the organisation where planned performance is not achieved. Budget centre must be separately delimited because a separate budget has to be set with the help of the head of the department concerned. To illustrate, production manager has to be consulted for the preparation of production budget and finance manager for cash budget.

Budget Manual:

A budget manual is a document which sets outstanding instructions governing the responsibilities of persons and the procedures, forms and records relating to the preparation and use of budgets and it is a booklet containing standing instructions regarding the procedures to be followed and the time schedules to be observed. The following are some important matters dealt with in the budget manual:

- a. the dates by which preliminary forecasts and plans are to submitted;

- b. the form in which these are to be submitted and the persons to whom these are to be forwarded;
- c. the important factors that must be considered for each forecast or plan;
- d. the categorisation of expenses, e.g., variable and fixed, and the manner in which each category is to be estimated and dealt with;
- e. the manner of scrutiny and the personnel to carry it out;
- f. the matters which must be settled only with the consent of the managing director, departmental manager, etc.;
- g. the finalisation of the functional budgets and their compilation into the master budget;
- h. the form in which the various reports are to be made out, their periodicity and dates, the persons to whom these and their copies are to be sent;

The main idea behind the budget manual is to inform line executives beforehand about procedures to be followed rather than issuing frequent instructions from the controller's office regarding procedures and forms to be used. Such frequent instructions can be a source of friction between the line and staff management.

Budget Controller:

To line up the various functions of Budget Committee, to bring them together and to coordinate their efforts in the matter of preparation of target figures, there should be a person usually designated as the Budget Controller, who can provide ready data relating to all the functions. He is more or less the secretary to the budget committee. The Budget Controller does not control; he is staff man; he advises but does not issue instructions. His duties will comprise mainly of:

- a. Helping in preparation of the various budgets and their coordination and compilation into the master budget;
- b. Compiling of information about actual performance on a continuous basis comparing it against the budget figures, ascertaining causes of deviation and preparing reports based thereon and sending them to the appropriate executive;
- c. Bringing to the notice of the management the need for revision of budgets and assisting them in the task; and
- d. Compiling information of all types for the purposes of efficient preparation of budgets and proper reporting.

Budget Committee:

The budget committee is a group of representatives of various functions in an organisation. As all functions are inter-related and as any change in one's target will have its impact on that of the other, it is necessary to discuss the targets so that a mutually agreed programme is determined. This is the co-ordination in budget making. It is a powerful force in knitting together the various activities of the business and enforcing real control over operations. The budget manual should specify the responsibilities and duties of the budget committee, which should include the following:

- 1) Receive and review budget estimates from the respective divisions or departments and make recommendations.
- 2) Recommend decisions or budget matters where there may be conflicts between departments or divisions.
- 3) Recommend changes and approval of the revised budget.
- 4) Receive, study and analyse periodic reports comparing the budget with actual performance. Consider policies with respect to follow-up procedures.
- 5) Consider and make recommendations for revision of the budget when conditions warrant.

Budget Period

CIMA defines budget period as “the period for which a budget is prepared and used, which may then be sub-divided into control periods”. It refers to the period of time covered by a budget. The broad classification in this regard has already been stated as “long-term budget” and “short-term budget”.

The short-term budget itself could be bifurcated into yearly and quarterly budgets. Long-term budgets provide the perspective, since one would be able to have a view of what is likely to be achieved and what the chief problems are likely to be, such as, competition from new products. Short-term budgets, say, for a year are quite exact and those for a quarter even more so. These are particularly suitable for control purposes. A short-term budget need not necessarily be for one year. It is generally long enough to cover one season or business year.

In determining the length of the budget period, the following factors should be considered:

- a. The budget period should be long enough to complete production of the various products.
- b. For the business of a seasonal nature the budget period should cover at least one entire seasonal cycle.
- c. The budget period should be long enough to allow for the financing of production well in advance of actual needs.
- d. Major operations and drastic changes in plant lay-out or manufacturing methods must be planned far in advance to determine financial requirements.
- e. The budget period should coincide with the financial accounting period to compare actual results with budgeted estimates.

A budget period should be distinguished from “control period”. The latter indicates the periodicity with which reports are sent to the various levels of management. It need not be the same as the budget period. Reports are sent usually at shorter intervals so that corrective action may be taken within the budget period. This would ensure that the overall variation between budget and actual is minimised. The periodicity of the reports is also dependent upon the urgency and significance of the matter under report.

Budget Key Factor:

A budget key factor or principal budget factor is described by the CIMA London terminology as: “a factor which will limit the activities of an undertaking and which is taken into account in preparing budgets”. The limiting factor is usually the level of demand for the products or services of the undertaking but it could be a shortage of one of the productive resources, e.g. skilled labour, raw material or machine capacity. In order to ensure that the functional budgets are reasonably capable of fulfilment the extent of the influence of this factor must first be assessed. As noted already all the functions in all organisations are interlinked. The target of one has influence on that of the other. If the sales department could sell only 50,000 units, it is no use of producing 100,000 units. If the production department has the capacity for 50,000 units, sales potential of 100,000 units is not of much consequence. Deliberations in the budget committee would lead to a decision regarding steps to get over a limiting factor. If one limiting factor is got over, another may come up. Thus, there is a possibility of varying limiting factors under different circumstances. Decision will have to be taken resulting in optimum production keeping in view the different limiting factor. The basic issue is an enquiry into the future. All

probabilities under different circumstances are to be worked out to fix the target at the optimum level. This may sometimes involve lengthy mathematical calculations.

Budget Reports:

Performance evaluation and reporting of variances is an integral part of all control systems. Establishing budgets in itself is of no use unless a comparison is made regularly between the actual expenditure and the budgeted allowances, and the results reported to the management. For this purpose, budget reports showing the comparison between the actual and budgeted expenditure should be presented periodically and promptly. The reports should be prepared in such a manner that they reveal the responsibility of a department or an executive and give full reasons for the variances so that proper corrective action may be taken. The reporting should be on the principle of exception and both favourable and unfavourable variances should be shown and commented upon. In brief, a budget report is a comparison of the actuals with the budgets both for the month and cumulative up to the current month. The variations from budgets are worked out in respect of each item of expenses so as to locate the responsibility and facilitate corrective action.

A budget report, to be effective in the purpose, must be:

- a. Simple in its form so as to be easily intelligible to the recipient concerned: It should bear a suitable heading and make the period in which it relates;
- b. Regularly and promptly presented;
- c. Designed to give only the essential information required and avoid unnecessary details;
- d. Expressed as far as possible in direct figures;
- e. Correlated to a “money value” wherever possible;
- f. Free from personal bias of the person preparing it; and
- g. Dated and signed by those who prepare and check it.

Every budget report should be followed up till the finally desired results are achieved. This follow-up would require either a discussion with the individual responsible for taking the necessary action or whose action alone can prevent recurrence of such variations; or revision in the budget itself arising out of errors of changes in policy.

Practice Questions

Multiple Choice Questions

1. One of these is the advantage of budgeting except that

- A. Provides a basis for monitoring and controlling costs and revenue
 - B. Time consuming and costly**
 - C. It formalizes planning
 - D. Coordinate the various activities of an organization
2. The budgeting technique which involves the process of preparing a budget that is more realistic and certain by shortening the periods between preparing the budget is called
- A. Incremental budget
 - B. Rolling budget
 - C. Activity based budget**
 - D. Performance base budget
3. Which of the following budgeting techniques start with a budget from previous period
- A. Zero base budget
 - B. Rolling budget**
 - C. Performance base budget
 - D. Incremental budget
4. A budget that recognizes the existence of fixed, variable and semi variable costs and is designed to change in relation to the actual volume of output for a period.
- A. Functional budget
 - B. Cash budget
 - C. Planning programme budgeting
 - D. Flexible budget**
5. Cash budget is composed of four (4) major sections which are
- A. Receipt, payment, surplus and Finance section
 - B. Receipt, payment, surplus and investment section
 - C. Receipt, payment, surplus and deficiency section**
 - D. Payment, receipt, disbursement and financing section
6. A cost-benefit approach whereby it is assumed that the cost allowance for an item is Zero and will remain so until the managers responsible justifies the existence of the cost items.
- A. Continuous budgeting
 - B. Zero based budgeting**
 - C. Programme planning budgeting
 - D. Activity based budgeting

7. The following are the limitations to cash budget except
 - A. Complex Assumption
 - B. Inflexibility
 - C. Payout policy**
 - D. Costly
8. Budget can be defined as a....
 - A. a qualitative statement
 - B. a barred statement
 - C. a Financial plan**
 - D. an income statements
9. A budget as the following disadvantage except that
 - A. Lack of realistic data can make the whole budgeting system useless
 - B. Political instability can make budget unattainable
 - C. Unattainable target can act as disincentive to workers
 - D. Aids communication both from top down and bottom up**
10. A budget designed to remain unchanged irrespective of the level of activity actually attained is known as
 - A. Flexible budget
 - B. Fixed budget**
 - C. Cash budget
 - D. Sales budget

Theoretical Questions

1. a. Define Budget and discuss five benefits of Budgeting.
 - b. Itemize any four advantages of budgetary control, and three limitations of budget.

2. Highlight four differences between Flexible Budget and Fixed Budget
3. Define Functional Budget and mention 5 examples.
4. Explain the concept of Zero-based budgets and its characteristics.
5. Describe Incremental base budgets and state its advantages and disadvantages.
6. Write short note on the following terminologies:
 - i. Budget Manual
 - ii. Budget Period
 - iii. Budget Officer
 - iv. Budget Committee and
 - v. Budget factor.

CHAPTER 13

STANDARD COSTING AND VARIANCE ANALYSIS

Learning Objectives

After studying this chapter, candidates should be able to:

1. Understand how standard costs are set.
2. Explain the concept of standard costing.
3. Identify and describe the purpose of a standard costing system.
4. Practically apply the system of standard costing for control purposes.
5. Compute and analyse the direct material, direct labour and overhead variances and explain how they are used for control purposes.
6. Calculate the Mix and Yield variances for Direct materials and Sales and
7. Calculate the Sales and Operational Variances and Interpret them correctly for effective managerial decision making.

13.1 Introduction to Standard Costing

Cost control, leading to cost reduction, should always be the objective of any firm or institution where scarce resources are used. Even if the firm can sell its goods or services at a very remunerative price, it should still try to reduce the use of factors of production, without jeopardising the quality of the product or the services. This really is the essence of standard costing - to set targets of cost, to try to achieve those targets, to compare the actual cost with the targets, to ascertain the reasons and to record the reasons in the books of account, or if a regular record is not maintained, at least to bring the monetary effects of various factors that have operated in the organisation, to the notice of the management. Thus, standard costing is an excellent system of control of costs and of measuring efficiency, and of improving upon it.

It may be noted in passing that usually standard costs are also given the name of pre-determined costs. This means that before work is actually started an extremely careful estimate of cost is prepared to serve as the standard against which the actual is to be measured. This term should not be confused with pre-production costs since that would mean the cost to be incurred actually before production commences, such as on trial runs. Further, standards should not be confused with estimates. Estimates connote rather loose forecasts of anything and in fact one thinks of actuals being correct and tends to judge the accuracy of estimates on the basis of actuals. In

case of standard costs, the emphasis is that the figures of standard costs are correct and that one must explain why the actuals differ from the standards. Standards are far more exact and exacting than forecasts or estimates.

13.2 Definition of Standard Costing

Standard costs are the scientifically pre-determined costs of manufacturing a single unit or a number of units of product or of rendering a service during a specified future period. The Chartered Institute of Management Accountants, London, defines standard cost as “a standard expressed in money. It is built up from an assessment of the value of cost elements. Its main uses are providing bases for performance measurement, control by exception reporting, valuing stock and establishing selling prices.” What is evident from the above definition is that standard costs are planned costs of a product under current or anticipated operating conditions. The dictionary meaning of the word ‘standard’ is that it is a “thing serving as a basis for comparison”, “thing recognised as model for imitation”. But it should be noted ‘standard’ is a relative term. Admittedly, what is standard for one may be substandard for another and vice versa. However, what is significant is that within an organisation, it serves as a desirable target.

The term ‘Standard Cost’ consists of two parts, viz., ‘*Standard*’ and ‘*Cost*’. ‘Standards’ can be established in respect of quantities and qualities like materials and labour. Cost involves the expression of the standard so established in values.

CIMA defines standard costing as “a control technique which compares standard costs and revenues with actual results to obtain variances which are used to stimulate improved performance”. The technique of standard costing may be summarised as follows:

1. Pre-determination of technical data related to production, i.e. details of materials and labour operations required for each product, the quantum of losses, level of activity, etc.
2. Pre-determination of standard costs, in full details for each element of cost viz. material, labour and overhead.
3. Comparison of the actual performances and costs with the standards and working out the variances i.e., the difference between the actuals and the standards.

13.3. Significance of Standard Costing

Though the advantages will be fully comprehended when one has gone through the whole study paper and has studied the various implications of standard costing, we give below the important significance / advantages:

1. To determine standards which are at once practicable and represent efficient performance.
2. Human beings often work hard to achieve standards which are within their reach; therefore, setting up of such standards will almost automatically mean greater efficiency in operations.
3. If standards are themselves challenged periodically on a systematic basis, it will mean a constant increase in efficiency.
4. Standard costing involves not only pre-determined quantity standards but also standards in respect of prices and rates. This may mean that all materials issued and labour applied will be evaluated on the basis of standard price and rates.
5. Standard costing will enable objective judgement of the people and to that extent the systems of promotions, etc., will be more acceptable in the firm.
6. This facilitates the integration of accounts so that reconciliation between cost accounts and financial accounts may be eliminated.

13.4 Application of Standard Costing

Standard costing is quite useful to the management in its function say planning, controlling etc and most important in decision making and performance evaluation. Standard costing can be used for:

1. Projecting the profit level of the business at any level of production.
2. To help in execution of management's function effectively i.e. planning and controlling of cost.
3. To analyse the impact of cost if sales volume increase/decrease by certain percentage.
4. To measure the efficiency of production.
5. To measure the performance of each segment.
6. To identify and measurement of variances between standards and actuals.
7. To design performance measurement systems to encourage employees to participate for the betterment of the Organisation.

13.5 Standards and Its Various Type

As 'standard' is a relative expression, one has to determine for oneself what one deems appropriate as a 'standard'. However, one should not lose sight of the objective which normally should be avoidance of all losses and wastages as far as possible. Management may certainly fix standards on the basis of maximum possible efficiency, possibly with an assumption of no wastage, no idle time, etc. However, this is not realistic; the standard will be the 'Ideal Standard' but impracticable - no one will even try to achieve it.

Alternatively, an average of past few years' costs could be taken as basis but this will mean perpetuating past inefficiencies, by making them the target. This will defeat the very purpose of standard costing. A target should be such that it will induce the worker to give out his best. In order to make people believe in standards and to induce them towards achieving them, standards should better be such as can be achieved but with an effort; in other words, they should be somewhat idealistic.

13.5.1 Basic Standard

This is a "standard" which is established for use, unaltered over a long period of time. Standards are fixed scientifically and hence it is more of a technical job. These standards are supposed to remain unchanged so long as quality requirements are constant. Moreover, if forward contracts are entered into regarding materials and labour pact signed for a certain period, the costs can be planned accordingly. Such costs, i.e., basic standards may, however, have to be adjusted for changes in circumstances in a period.

13.5.2 Current Standard

In practice, standards are fixed on the basis of scientific studies but adjusted for current subjective factors of a standard, therefore, is made realistic to reflect the anticipated conditions affecting operations; it is not too idealistic. Such a standard would bring to sharp focus the avoidable causes for variances, leading to control action. A current standard is a standard for a certain period, for certain condition and for certain circumstances. Basic standards are more idealistic whereas current standards are more realistic. Most companies use current and not basic standards.

13.5.3 Expected or Attainable Standard:

A standard though idealistic should also be realistic. If targets are fixed for a certain budgeted period, considering the expected conditions, it can be known as “expected standard” or “attainable standard”. It is defined by CIMA, London as “a standard which can be attained if a standard unit of work is carried out efficiently, a machine properly operated or a material properly used. Allowances are made for normal losses, waste and machine downtime.”

13.5.4 Normal Standard:

Yet another target is one which is intended to cover a longer period of time - a period long enough to cover one trade cycle, i.e., roughly 7 to 10 year. This is defined as “the average standard which it is anticipated can be attained over a future period of time, preferably, long enough to cover one trade cycle”.

13.5.5 Ideal Standard:

This standard refers to the target which can be attained under most ideal conditions. Hence, it is more idealistic and less realistic. It is defined by the terminology as: “The standard which can be attained under the most favourable conditions, with no allowance for normal losses waste and machine down time”.

13.6 Standard Costing Systems

Standard costing system provides standard cost for budgeting purpose to plan future performance. Standards are pre-determined and it helps organisation to achieve its objectives in economic and efficient manner. It can be used to motivate employee to achieve set standards of production/expenses level i.e. ideal standards. It provides some allowances for wastage and idle time (attainable standards), it recognizes the fact that labour is likely to waste some materials and will become absent for various reasons like sickness. A standard costing system initially records the cost of production at standard units of inventory flow through the inventory accounts (work-in-process, raw material, finished goods or cost of goods sold) at them per-unit standard cost. Standards are compared with actual outcomes to find deviations and reasons for these deviations, so that corrective action can be taken. It helps in managing human resources by giving them signal that their performances are being measured, compared and analysed.

Rewards can be given and disciplinary action can be taken based on pre-defined criteria communicated to them, so that decisions regarding whatever action taken can be justified to

avoid resentment among workforce. The management evaluates the performance of a company by comparing it with some predetermined measures. Therefore, it can be used as a process of measuring and correcting actual performance to ensure that the plans are properly set and implemented.

13.7 Installation of Good Standard Costing System

The installation of a standard costing system involves the following steps:

- To set the predetermined standards for sales margin and production costs
- To ascertain and collect the actual results
- To compare the actual performance with pre-determined standards
- To determine the variances
- To analyse and investigate the variances
- To ascertain the causes of variance
- To take corrective action where necessary.
- To adjust the budget in order to make the standards more realistic

13.8 Functions of Standard Costing System

- Valuation: Assigning the standard cost to the actual output.
- Planning: Use the current standards to estimate future sales volume and future costs.
- Controlling: Evaluating performance by determining how efficiently the current operations are being carried out.

13.9 Features of Standard Costing System

- The fact that standards are based on estimates.
- Standards will change according to conditions.
- It provides continual incentive for employee to keep costs and performance in line with predetermined standard.

A standard cost system helps focus management's attention on the following questions and their causes:

- (a) Were materials purchased at prices above or below standard?
- (b) Were materials used in quantities above or below standard?
- (c) Is labour being paid at rates above or below standard?
- (d) Is labour being used in amounts above or below standard?

13.10. Components/Elements/Classes of Standard Costing

13.10.1 Direct Materials Standards

The standard cost of direct materials is closely related to the quantities and prices of materials to be used in production. Hence, two related standards are set:

1. **Materials Usage Standard:** The object of setting the materials usage standard is to achieve maximum efficiency in materials usage. The first step in this connection lies in specifying the size and quality of materials. This is followed by an analysis of the materials requirements. A list is prepared showing the details of materials size, grade, quantity etc. - for setting the standard. This is known as a 'Standard Materials Specification.' The standard quantities of materials to be used per unit of production can be laid down by one of the following means:
 - a. By reference to the weight of materials in the final production.
 - b. On the basis of past performance with due allowance for change in conditions.
 - c. By means of test runs conducted under different conditions and taking an average of quantities used.

Due allowance must be made for normal wastage. This is generally based on an estimate wastage which is unavoidable, e.g., normal loss through evaporation, off-cuts, broken parts, etc.

2. **Materials Price Standard:** Standards are set for material prices after due consideration of the efficiency of purchasing and store-keeping functions. The aim of setting materials price standard is to achieve maximum efficiency in this function, and thus minimise direct materials costs. The price standard should provide for discount on purchases, economy of bulk purchasing and anticipated changes in market price.

12.10.2 Standard Cost for Direct Labour

Direct labour costs depend upon labour time and wage rates and therefore, setting standard cost for direct labour involves setting two related standards:

1. **Standard Labour Time:** This indicates the precise time (hours) that labour of a particular grade should take to perform a given operation. The main object of setting standard labour time is to derive maximum efficiency in the use of labour time. The

standard time may be set on the basis of past performance with adjustments for change of conditions. Time and motion studies form a great help in setting standard time.

2. **Labour Rate Standard:** This refers to the wage rates expected to be paid to different grades of labour employed in the organisation. The object is to plan for the actual wages to be paid. A variety of factors should be considered and allowance made for them while setting standard wage rates, principal of them are future trend of wages which can be anticipated; collective agreement between labour and management; guaranteed minimum wages; and overtime wages, if the level of activity makes overtime inevitable.

Both these standards must be set after a detailed study of labour work involved. Besides, the workers employed must be graded on a standard basis.

13.10.3 Standard Overhead Rates

The principal object of setting standard overhead rates is to minimise the overhead costs chargeable to production. The following steps are necessary for setting standard rates:

1. The level of activity of production departments and the work to be done by the service departments should be determined.
2. Overheads costs should be classified into fixed, variable and semi-variable overheads. The costs expected to be incurred under each head for each of the production and service departments should be calculated for a given period. The expected costs may be laid down in details in the form of cost-budgets based on past experience, present conditions and future trends.
3. The standard overhead rates for each of the service departments should be calculated and applied to the producing departments.
4. The standard overhead rates for the producing departments may be determined as a direct labour hour rate, or a machine hour rate, or as a percentage of direct wages.

12.11 Variance Analysis

The primary object of standard costing is to reveal the difference between actual cost and standard cost. A 'variance' in standard costing refers to the divergence of actual cost from standard cost. Variances of different cost items provide the key to cost control. They indicate whether and to what extent standards set have been achieved. This enables management to correct adverse tendencies. After standard costs have been established, the next step is to ascertain the actual cost under each element and compare them with the standard cost. The

difference between these two is termed as cost variance. Cost variance is the difference between a standard cost and the comparable actual cost incurred during a given period.

The Chartered Institute of Management Accountants London defines variance as “the difference between planned, budgeted, or standard cost and actual cost; and similarly for revenue”. Variance analysis can be defined as “the analysis of performance by means of variances”. It is the process of computing the amount of and isolating the cause of variances between actual costs and standard costs.

Variance analysis involves:

- (a) Computation of individual variances, and
- (b) Determination of the cause(s) of each variance.

Actual cost which is higher than the standard costs would be a sign of inefficiency and the difference would be termed as unfavourable or adverse. A variance that reduces profit is adverse or a variance that increases profit is favourable. Variance are computed under each element of cost for which standards have been established. Each variance is analysed to ascertain the causes so that the management can exercise proper control. The cause is affixed to the variance, for example, materials price variance will show that the variance arose due to change in the price of materials. Some of the variances are controllable while others are not. The purpose of such classification is that proper emphasis can be placed on the controllable variance. This follows the principle of management by exception.

Favourable and Unfavourable Variance

If the actual cost is less than standard cost, the difference is known as a favourable variance, credit variance or positive variance is denoted by (F) or Cr. - it increases the profit on the other hand. If actual cost exceeds standard costs, the difference is known as an unfavourable variance, debit variance, negative variance or adverse variance which is denoted by (A) or Dr. - it reduces the profit.

Controllable and Uncontrollable Variance: When the variance with respect to any cost item reflects the degree of efficiency of an individual or department, i.e., a particular individual or departmental head is responsible for the variance, the variance is known as a controllable variance. Obviously, such a variance is amenable to control by suitable action. An uncontrollable variance is one which is not amenable to control by individual or departmental

action. Such a variance is caused by external factors like change in market conditions, fluctuations in demand and supply, etc. No particular individual within the organisation can be held responsible for it.

Revision Variance: This is amount by which a budget is revised but which is not incorporated in the standard cost rate as a matter of policy. The standard costs may be affected by wage rate changes after wage accords, fiscal policy etc. The standard costs are not disturbed to account for these uncontrollable factors and to avoid the amount of labour and cost involved in revision.

Method Variance: It is the difference between the standard cost of the product manufactured or operation performed by the normal methods and the cost of operation by alternative method. Standards usually consider the best method applicable, and any deviation will result in an unfavourable variance. Hence such deviations should be as few as possible.

Illustration

Standard cost of a product in a factory is predetermined as follows:

Material (5 units @ 4 each)	20
Labour (20 hours @ N1.50 per hour)	30
Overhead expenses	<u>10</u>
Total	<u>60</u>

During a period, 8,000 units were produced whose actual cost was as follows:

Material (40,500 units @ N5 each)	202,500
Labour (150,000 hours @ N1.60 each)	240,000
Overhead expenses	<u>90,000</u>
Total	<u>532,500</u>

You are required to prepare a statement showing standard cost, actual cost and variances.

Solution

Statement of Standard Cost, Actual Cost, and Variances

Particulars	Standard cost	Actual cost	Variance
Material	160,000	202,500	42,500 (A)
Labour	240,000	240,000	—

Overhead expenses	80,000	90,000
10,000 (A)		
Total	480,000	532,500
52,500 (A)		

The above statement shows the variance in respect of each element of cost. Each such variance can be further analysed. Before making such analysis, it is necessary to recognise the two broad processes in cost accumulation. The cost is first incurred and then charged to production. For example, materials are purchased first (normally) and then issued for production and wages are incurred first and then charged to production on the basis of time spent on production. Thus, there are two stages in cost accumulation, namely,

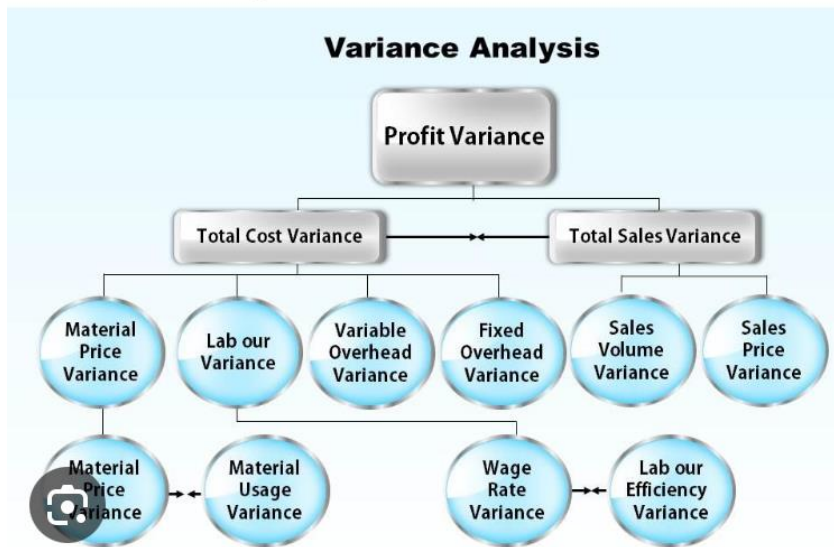
- (i) the incurring stage,
- (ii) the recovery stages. The recognition of these two stages is essential because variances arise both at the incurring and recovery stages. Analysis involves identifying and quantifying the variances at both these stages

13.12. Significance/Importance of Variance Analysis

The only important of variance is to; provide practical pointers to the cause of off-standard performance so that management can improve operations, increase efficiency, utilized resources more effectively and also reduce cost. If follow that overly elaborate variance analysis which is not understood, variance that are not acted upon and variance which are calculated too long after the event do not fulfil the central purpose of standard costing.

13.13 Variance Pyramid/Chart

Variance Analysis



Direct Material Variance

Material Cost Variance: is the difference between standard cost of material specified for the output achieved and the actual cost of direct material used. It is the addition of usage variance and price variance.

(Standard Cost and Actual Cost)

This can be analysed further into:

- a. **Material Price Variance:** - The difference between the standard price and actual purchase quantity of material. It can be calculated either at the time of purchase or at time of usage;

Actual Quantity (Standard Price – Actual Price)

Reason for Price Variance

1. Unforeseen discount received
2. Greater care taken in purchase
3. Price decrease and decrease

- b. **Material Usage Variance:** - The difference between the standard quantities of material and the actual quantity used as the standard purchase standard price

Reason for Usage Variance

1. Higher quality used
2. More effective use
3. Defective material

4. Excessive waste
5. Theft

Where production involve the use of more than one types of material or more than one labour grade, usage variance can be further analysed into;

- a. **Material Mix Variance:** - The difference between the total quantities in standard proportion, priced at the standard price and the actual quantity of material used at the standard price. Standard (quantity in standard mix - quantity in actual mix)
- b. **Material Yield Variance:** - The difference between the standard yield of the actual material input and the actual yield both value at the standard material cost. Standard price (standard yield – actual yield).

Illustration

For producing one unit of a product, the materials standard is:

Material X: 6 kg. @ N8 per kg

Material Y: 4 kg. @ N10 per kg.

In a week, 1,000 units were produced the actual consumption of materials was:

Material X: 5,900 kg. @ N9 kg., and

Material Y: 4,800 kg. @ N9.50 per kg.

Compute the various variances.

Solution:

Standard cost of materials of 1,000 units:

Material X: 6,000 kg. @ N8	48,000
Material Y: 4,000 kg. @ N10	
<u>40,000</u>	
Total	<u>88,000</u>

Actual cost:

Material X 5,900kg. @ N9	53,100
Material Y 4,800 kg. @ N9.50	
<u>45,600</u>	
Total	<u>98,700</u>
Total materials cost variance	10,700 (A)

Analysis

Material Price Variance: Actual Quantity (Standard Price - Actual Price)

$$X = 5900 (N8 - N9) = 5,900 (A)$$

$$Y = 4800 (N10 - N9.50) = \begin{matrix} 2,400 (F) \\ \underline{3,500 (A)} \end{matrix}$$

Material Usage Variance: Standard Price (Standard Quantity - Actual Quantity)

$$X = N8 (6,000 - 5,900) = 800 (F)$$

$$Y = N10 (4,000 - 4,800) = \begin{matrix} \underline{8,000 (A)} \\ \underline{7,200 (A)} \end{matrix}$$

Verification

Material Cost Variance = Materials price variance [3,500 (A)] + Material Usage Variance

$$10,700 (A) = 3500 (A) + 7200 (A)$$

Material Mix Variance = SP (RSQ – AQ)

$$\begin{aligned} \text{For Material X} &= N8 (6420 - 5900) \\ &= N4160 (F) \end{aligned}$$

$$\begin{aligned} \text{For Material Y} &= 10 (4280 - 4800) \\ &= N5200 (A) \end{aligned}$$

$$N4160 (F) + N5200 (A) = N1040 (A)$$

Material Yield Variance = SC per unit × (AY – SY)

$$\begin{aligned} &= 88 (1,000 - 1,070) \\ &= N6,160 \end{aligned}$$

Labour Cost Variances

Labour cost variance (also termed as direct wage variance) is the difference between the standard direct wages specified for the activity achieved and the actual direct wages paid. The formula for labour cost variance is:

$$\text{LCV} = (\text{Standard Hours} \times \text{Standard Rate}) - (\text{Actual Hours} \times \text{Actual Rate})$$

OR

$$\text{LCV} = (\text{SH} \times \text{SR}) - (\text{AH} \times \text{AR})$$

Labour Rate Variance

This is the portion of the wages variance which is due to the difference between the actual rate and standard rate of any specified. It is calculated like the materials price variance.

$$\text{Labour Rate Variance} = \text{Actual Hours} (\text{Standard Rate} - \text{Actual Rate})$$

OR

$$\text{LRV} = \text{AH} \times (\text{SR} - \text{AR})$$

Causes of Wages (Labour) Rate Variance

- Wage rate variance occurs due to the following causes:
- Change in basic wage structure or change in piece work rate.
- Overtime work in excess of that provided in the standard rate.
- Employment of one or more workers of a different grade than the standard grade.
- Payment of guaranteed wages to workers who are unable to earn their normal wages if such guaranteed wages form part of direct labour cost.
- New workers not being allowed full normal wage rates.

Labour Time OR Efficiency Variance

Also termed as labour efficiency variance, is that portion of the direct wages variance which is due to the difference between the standard labour hours specified and the actual labour hours expended. Obviously, this variance provides a key to the control of workers' efficiency and labour cost. In effect, it is a usage variance. The computation of variance is as follows:

$$\text{Labour Efficiency Variance} = \text{Standard Wage Rate} (\text{Standard Hours of Production} - \text{Actual Hours Worked})$$

OR

$$\text{LEV} = \text{SR} \times (\text{SH} - \text{AHW})$$

Causes of Labour Efficiency Variance

- The causes giving rise to labour efficiency variance are as follows:
- Lack of proper supervision or stricter supervision than specified;
- Poor working conditions;
- Defective machinery and equipment;
- Discontentment in workers due to unsatisfactory personnel relations;
- Increase in labour turnover;
- Use of non-standard material requiring more or less operation time;

Example:

Assuming

Actual hours worked	5,600	
Actual wage paid	7,840	
Standard rate per hour		2
Standard hours produced	4,000	

Solution:

Wages variance = Standard cost – Actual cost

$$(4,000 \times 2) = N8,000 - N7,840 = `160 (F)$$

Wages rate variance = Actual hours (Standard rate - Actual rate) =

$$5600 (2-1.4) = N3,360 (F)$$

$$\text{Actual Rate} = \frac{7840}{5600} = 1.4$$

Labour efficiency rate variance

$$2 (4,000 - 5,600) = N3,200 (A)$$

Labour Cost Variance = Labour Rate Variance + Labour Efficiency Variance =

$$3360 (F) + 3200 (A) = N160 (F)$$

Labour efficiency variance is sub-divided into the following variances:

- A. Idle time variance
- B. Labour mix variance
- C. Labour yield variance (or Labour revised-efficiency variance)

Idle Time Variance

This variance which forms a portion of wages efficiency variance, is represented by the standard cost of the actual hours for which the workers remain idle due to abnormal circumstances.

Labour Idle Time Variance (LITV) =

(Actual hours paid for x Standard rate) – (Actual hours worked x Standard rate)

OR

Idle Hours x Standard rate

Labour Mix Variance

It is also known as Gang Composition Variance. This is a sub-variance which arises due to change in the composition of a standard gang or combination of labour force:

Labour mix variance =

(Actual hours at standard rate of actual gang – Actual hours at standard rate of standard gang)

OR

Standard rate (Revised standard labour hours - Actual labour hours)

OR

LMV = (RSH – AHW) x SR

Point to be noted

- Ensure the Level of output (yield i.e. AY/SY) is the same for actual data and standard data, if same are the different then calculate new SY)
- Always prepare cost sheet or put all given figure in a table before starting question for both standard data and actual data for same level of output.
- Write formula before computing variances.
- Mix variance is computed when any difference is found in standard hour and actual hour worked for same level of output.
- Labour Yield Variance (LYV) is also known as Labour Sub Usage Variance.
- Computed on the basis of actual hour worked irrespective of standard hour.

- For calculating the LY actual yield (AY) will never change whereas standard yield (SY) may be changed

Illustration

A factory, working for 50 hours a week, employs 100 workers on a job work. The standard rate is N1 an hour and standard output is 200 units per gang hour. During a week in June, ten employees were paid at 80k an hour and five at N1.20 an hour. Rests of the employees were paid at the standard rate. Actual number of units produced was 10,200

Calculate labour cost variances.

(i) Cost Variance

Standard Cost – Actual Cost

N5,100 – N4,950 = N150 (F)

Workings:

(a) Calculation of Actual Cost:

85 workers for 50 hours @ N1 per hour =	4,250
10 workers for 50 hours @ 80k per hour =	400
5 workers for 50 hours @ N1.20 per hour =	<u>300</u>
Total actual cost	
<u>4,950</u>	

(b) Calculation of Standard Rate:

Standard cost per (gang hour) = $100 \times 50 \times 1 = N5000$

Standard production (per gang hour) = $100 \times 200 \times 50 = 10000$ unit

Standard rate per unit =

$5000 / 10000 = 50$ per unit

(c) Calculation of Standard Cost:

Actual production \times Standard rate $10,200$ units \times $50k$ per unit = N5,100

(ii) Rate Variance:

As the actual wage rate has deviated from the standard in respect of only 15 workers from out of a total of 100 workers, wages rate variance would be calculated only in respect of these 15 workers

Actual Hours (Standard Rate – Actual Rate)

Therefore,

$$500 \text{ Hours (N1 - 80k)} = \text{N100 (F)}$$

$$250 \text{ Hours (N1 - 1.20)} = \text{N50 (A)}$$

Thus, the total rate variance is N50 (F).

(iii) Efficiency Variance:

Efficiency variance is indicated by the fact that, as compared with standard production of 10,000 units (200 units \times 50 hours), the actual production is 10,200 units

Standard Rate (Standards Hours – Actual Hours)

$$1 (5,100 - 5,000) = 100 \text{ favourable.}$$

$$\text{Calculation of Standard Hours} = 10200 \frac{10000}{5000} \times = 5,100 \text{ hours}$$

Yield Variance:

Standard labour cost per unit of output (SY – AY)

$$0.50 (10,000 - 10,200) = \text{N100 (F)}$$

Verification:

Cost Variance = Rate Variance + Efficiency Variance

$$\text{N150 (F)} = 50 \text{ (F)} + \text{N100 (F)}$$

Variable Overheads and Fixed Overheads Variances

The total overhead cost variance is the difference between the standard cost of overhead allowed for the actual output achieved and the actual overhead cost incurred. In other words, overhead cost variance is the under or over absorption of overheads. However, before we proceed to study these variances, we should be aware about the basic terms used in the computation of overhead variance:

$$\text{Standard overhead rate (per unit)} = \frac{\text{Budgeted overhead}}{\text{Budgeted output units in}}$$

$$\text{Standard overhead rate (per hour)} = \frac{\text{Budgeted overhead}}{\text{Budgeted Hours}}$$

$$\text{Standard hours for actual output} = \frac{\text{Budgeted hour} \times \text{Actual output}}{\text{Budgeted Output}}$$

$$\text{Standard output for actual hours} = \frac{\text{Budgeted Output (in unit)} \times \text{Actual hour}}{\text{Budgeted hour}}$$

Absorbed (or Recovered) overhead = Standard Rate per hour × Actual Output Or
standard rate per unit × standard hours for actual output

$$\text{Budgeted overhead} = \text{Budgeted output} \times \text{Standard overhead rate per unit}$$

$$\text{Or Budgeted hours} \times \text{Standard overhead rate per hour}$$

$$\text{Standard overhead} = \text{Std. output for actual time} \times \text{Standard overhead rate per unit}$$

$$\text{Or Actual hours} \times \text{Standard overhead rate per hour}$$

$$\text{Actual overhead} = \text{Actual output} \times \text{Actual overhead rate per unit}$$

$$\text{Or Actual overhead} = \text{Actual output} \times \text{Actual overhead rate per unit.}$$

Overhead Cost Variance

$$[\text{Actual Output} \times \text{Standard Overhead Rate Per Unit}] - \text{Actual Overhead Cost}$$

OR

$$[\text{Standard Hours for Actual Output} \times \text{Standard Overhead Rate Per Hour}] - \text{Actual Overhead Cost}$$

Overhead cost variances can be classified as:

- Variable overhead variance
- Fixed overhead variance

Variable Overhead Variance

It is the difference between the standard variable overhead cost allowed for the actual output achieved and the actual variable overheads. Normally this variance is represented by expenditure (cost) variance only because variable overhead cost will vary in proportion to production so that only a change in expenditure can cause such variance.

It is calculated as:

$$\text{Variable Overhead Variance} =$$

$$(\text{Standard Variable Overhead Rate} \times \text{Actual Output}) - \text{Actual Variable Overheads}$$

OR

(Standard Hours for Actual Output × Standard Variable Overhead Rate) – Actual Variable Overheads

OR

(Standard Rate × Actual output) – (Actual Rate × Actual output)

(Actual Hours × Standard Variable Overhead Rate per Hour) – Actual Variable Overhead OR

Actual Hours (Standard Variable Overhead Rate per Hour – Actual Variable Overhead Rate per Hour)

(i) Variable Overhead Expenditure Variance (VOExV) =

(Actual Hours × Standard Variable Overhead Rate per Hour) – Actual Variable Overhead OR

Actual Hours (Standard Variable Overhead Rate per Hour – Actual Variable Overhead Rate per Hour)

(ii) Variable Overhead Efficiency Variance (VOEfV) =

(Standard Time for Actual Production × Standard Variable Overhead Rate per Hour) – Actual Hours Worked × Standard Variable Overhead Rate per Hour).

OR

Standard Variable Overhead on Actual Production – Standard Variable Overhead for actual time.

OR

Recovered Overheads – Standard Overheads

illustration

The following data is obtained from the books of a manufacturing company regarding variable overheads:

Budgeted production for January	300 units
Budgeted variable overhead	7,800
Standard time for one unit	20
hours Actual production for January	250 units
Actual hours worked	4,500

Hours Actual variable overhead 7,000

Solution

Variable Overhead Variance = Standard Cost – Actual Cost =
N6,500 – N7,000 = N500 (A)

Workings:

(a) Standard variable overhead cost of actual output
= 250 units × 26 per unit = N6,500

(b) Standard variable cost per unit
 $7800 / 300 = 26$ per unit

Sometimes, a little refinement is introduced in the calculation of variable overhead variance and, therefore, the computation is as follows:

Variable Overhead Expenditure Variance=
Actual Cost – Standard overheads on hours worked
 $7,000 - 5,850 = 1,150$ (A)

Standard variable overhead on hours worked is =
 $4,500 \text{ hours} \times \text{N}1.30 \text{ per hour} = \text{N}5,850$

Standard variable overhead per hour
 $7800 / 300 \times 20 = 1.3$

Variable Overhead Efficiency Variance =
Standard variable overhead on hours worked – Standard variable overhead on actual
output.

$5,850 - 6,500 = 650$ (F)

Variable Overhead Total Variance = Expenditure Variance + Efficiency Variance
 $1,150$ (A) + 650 (F) = 500 (A)

This is the same as variable overhead variance already arrived at.

Fixed Overhead Cost Variance

Fixed overhead cost variance is the difference between the standard costs of fixed overhead allowed for the actual output achieved and the actual fixed overhead cost incurred i.e.

FOCV= (Actual output × Standard fixed overhead rate) – Actual fixed overheads

OR

(Standard hours produced × Standard fixed overhead rate per hour) – Actual fixed overheads

OR

Recovered fixed overhead – Actual fixed Overhead

Standard overhead produced means hours which should have been taken for the actual output.

Fixed overhead variance may broadly be divided into:

- (i) Expenditure variance and
- (ii) Volume variance.

Expenditure Variance

This is also known as budget variance. This is obtained by comparing the total overhead cost actually incurred against the budgeted overhead cost i.e.

Budgeted fixed overhead – Actual fixed overhead

OR

(Budgeted hours × Std. fixed overhead rate) – Actual fixed overhead

If the actual overheads are more, it shall result in an adverse variance and vice versa. This variance gives a measure of efficiency of spending.

Illustration

The following information relates to the month of June 2023

	Budgeted	Actual
--	----------	--------

Output	20,000 units	22,000
units		
Overheads – Variable	100,000	107,000
Fixed	150,000	158,000

Compute the overheads variance.

Solution:

Variable overheads allowed or budgeted for actual output

Standard Overhead for actual output (10000/20000 × 22000)	1,10,000
Actual amount spent	<u>1,07,000</u>
Variable overhead variance	<u>3,000 (F)</u>

Fixed overheads for the period

(Change in output having no effect on expenditure)	1,50,000
Actual fixed overhead	<u>1,58,000</u>
Fixed overheads expenditure variance	<u>8,000 (A)</u>
Total overheads variance	5,000 (A)

Volume Variance

The difference between overhead absorbed on actual output and those on budgeted output is termed as volume variance. This variance shows the over or under absorption of fixed overheads during a particular period. If the actual output is more than the standard output, there is over-recovery of fixed overheads and volume variance is favourable and vice versa if the actual output is less than the standard output.

Volume Variance (FOVV) =

(Actual output × Standard rate) – Budgeted fixed overheads OR Standard rate (Actual output - Standard output)

OR

Standard rate per hour (Standard hours produced - Budgeted hours) OR (Absorbed overhead – Budgeted overhead)

Efficiency Variance

It arises due to the difference between the output actually achieved and the output which should have been achieved in the actual hours worked. This variance will be favourable if the actual production is more than the standard production in actual hours:

$$\text{Fixed Overhead Efficiency Variance (FOEfV)} = \text{Standard Fixed Overhead Rate per hour} [\text{Standard Production} - \text{Actual Production}]$$

Capacity Variance

It is that portion of the volume variance which is due to working at higher or lower capacity than the standard capacity. It is related to the under or over utilisation of plant and equipment. If the capacity utilization is more than the budgeted capacity, the variance is favourable, otherwise it will be adverse. It is represented as:

$$\text{F. O. Capacity Variance} = \text{Standard rate (Standard quantity} - \text{Budgeted quantity)}$$

Sales and Operational Variances

- a. **Sales Price Variance:** - The difference between the actual selling price per unit and the selling price per unit multiplied by actual quantity sold
- b. **Sales Volume Profit Margin:** - This is the difference between the actual unit sold and budgeted sales price at standard contribution per unit; but under standard absorption costing system, the difference is priced at standard profit per unit

Accounting Treatment of Variances

The cost records maintained and entries made under a system of standard costing vary from company to company depending upon the information that is desired from cost records, and the intended use of standard cost and variance analysis. Variances which emerge in standard costing and recorded in the cost books may be disposed of in any of the following ways:

(i) ***Transfer to costing profit and loss account***

In this method, the stock of work-in-progress, finished goods and cost of sales are maintained at standard cost and all variances are charged to costing profit and loss

account at the end of the accounting period. This method is favoured because standard costs facilities prompt inventory valuation and also variances are separated out so as to attract the attention of the management.

(ii) ***Allocation of variances to finished stock, work-in-progress and cost of sales account***

Under this method the variances are distributed over stocks of finished goods, work-in-progress and to cost of sales account in proportion to the closing balances (value) of each account depending upon the type of variance.

(iii) ***Transfer to reserve account:***

In this method favourable variances are carried forward as deferred credits until they are set-off by adverse variances. It is considered that controllable variances according to method.

Benchmarking for Setting of Standards

First of all, we should have knowledge what is benchmarking.

Benchmarking is the process of identifying "best practice" in relation to product and the processes by which those products are created and delivered. The objective of benchmarking is to understand and evaluate the current position of a business or organisation in relation to "best practice" and to identify areas and means of performance improvement.

The Benchmarking Process

Benchmarking involves looking outward (outside a particular business, organisation, industry, region or country) to examine how others achieve their performance levels and to understand the processes they use. In this way benchmarking helps explain the processes behind excellent performance.

Application of benchmarking involves four key steps:

1. Understand in detail the existing business processes
2. Analyse the business processes of others
3. Compare own business performance with that of others analysed
4. Implement the steps necessary to close the performance gap

Benchmarking should not be considered a one-off exercise. To be effective, it must become an ongoing, integral part of an ongoing improvement process with the goal of keeping abreast of ever-improving best practice.

In the same way benchmarking should be followed while determining the standard for costs. Production manager and cost accountant must work together in setting the standards. Production manager should determine the quantity standards and cost accountant should work out for price standards. While setting the production cost standards, the following preliminaries should be considered:

- (i) To study the technical and operational aspects of the manufacturing processes and method etc (of self-business).
- (ii). To analyse the process as discussed in (1.) of others
- (iii) To review of the existing costing system, cost records and forms in use. It should review while considering of following:
 - (a) Quantities
 - (b) Prices
 - (c) Mix proportion of different grades
 - (d) Scrap and its value
 - (e) Yield
- (iv) To implement the necessary step to close the performance gap say:
 - (a) Proper classification of accounts so that variance is also accounted for.
 - (b) Fixation of responsibility for every work should be there.

13.14 Reporting of Variances to Management

The primary purpose of reporting to management is to enable them to take corrective action and arrest unfavourable variances to the extent possible. Therefore, timely and prompt reporting of the variance is of utmost importance. The individual or department responsible for adverse controllable variance should be located. For instance, a variation in the price paid for raw materials would be the responsibility of the purchase manager and a variation in production efficiency is the responsibility of the production manager. The board and the managing director would be concerned with the overall efficiency, with which their plans have been operated by the lower levels of management. The profit and loss account should be prepared in a special

manner - starting with the standard or budgeted profit, the various variances would be put in two columns, favourable and unfavourable, and the net results added to or deducted from the standard profit, thus arriving at the actual profit. Management can easily see the factors that have contributed to the change in the profit picture. While reporting the analysis of variances to management, graphs and charts might be used or analysis may be reported in the form of statement and reports giving main details.

For the variance reporting to be effective, it is essential that the following conditions are fulfilled:

- A. The variances arising out of each factor should be correctly segregated. If part of a variance due to one factor is wrongly attributed to or merged with that of another, the analysis report submitted to the management would be misleading and wrong inferences may be drawn from it;
- B. Variances, particularly the controllable variances should be reported with promptness as soon as they occur. This would enable corrective action being taken in time;
- C. Analysis of uncontrollable variances should be made with the same care as for controllable variances since the analysis of the off standard situation may reveal far reaching effects on the economy of the concern; and
- D. The forms of reports for the different types of variances should be designed keeping in view the needs of the management and the size of the concern, and no standard forms can, therefore, be suggested. It is better to present the profit figures by way of reconciliation of budgeted (or standard) and actual profits on the basis of variances.

Practice Questions

Multiple Choice Questions

1. are the scientifically pre-determined costs of manufacturing a single unit or a number of units of product or of rendering a service during a specified future period.

- A. Actual cost
 - B. Standard cost**
 - C. Adverse cost
 - D. Variance cost
2. If the actual cost is less than standard cost, the difference is known as all of the following except one
- A. Favourable variance
 - B. Credit variance
 - C. Positive variance
 - D. Adverse variance**
3. If actual cost exceeds standard costs, the difference is known as all of the following except
- A. Unfavourable variance**
 - B. Debit variance
 - C. Negative variance
 - D. Favourable variance
4. The differences between standard cost and actual cost is known as....
- A. Adverse
 - B. Credit
 - C. Debit
 - D. Variance**

For producing one unit of a product, the materials standard is:

Material X: 6 kg. @ N8 per kg

Material Y: 4 kg. @ N10 per kg.

In a week, 1,000 units were produced the actual consumption of materials was:

Material X: 5,900 kg. @ N9 kg., and

Material Y: 4,800 kg. @ N9.50 per kg.

Use the above information to answer question 5 – 7

5. Determine the standard cost for the 1000 units of material
- A. N48,000
 - B. N40,000
 - C. N88,000
 - D. N18,000

6. Determine the actual cost for the 1000 units of material
 - A. N45,600
 - B. N98,700
 - C. N18,500
 - D. N53,100

7. Determine the total material cost variance
 - A. N10,700
 - B. N2,400
 - C. N500
 - D. N3,100

8. The following are the causes of labour efficiency variance except
 - A. Poor working conditions
 - B. Increase in labour turnover
 - C. Decrease in labour turnover
 - D. Defective machinery and equipment**

9. The installation of a standard costing system involves the following steps
 - A. To ascertain and collect the actual results
 - B. To ascertain the causes of variance
 - C. To determine the variances
 - D. To determine machine date**

10. The various types of standard cost include the following....
 - A. Basic, current, ideal, expected and normal standard**
 - B. Basic, current, abnormal, expected and normal standard
 - C. Basic, classic, ideal, expected and normal standard
 - D. Basic, current, ideal, expected and non-current standard

Theoretical Questions

1. Describe how standard costs are set.
2. Explain the concept of standard costing and explain any four types of standard.
3. Identify and describe the purpose of a standard costing system.

4. Explain standard costing for control purposes.

5. The following information relates to the month of June 2023

	Budgeted	Actual
Output	20,000 units	22,000
units		
Overheads – Variable	100,000	107,000
Fixed	150,000	158,000

Compute the overheads variance.

6. Explain the causes of material cost variances

CHAPTER 14

COST-VOLUME- PROFIT ANALYSIS (BREAK EVEN ANALYSIS)

Learning Objectives:

1. Understand the concept of C-V-P Analysis and know how to apply the Analysis for effective decision making.

2. Know the rationale behind the C-V-P Analysis and the underlying assumptions for its operation.
3. Understand the concepts of Contribution, Profit-Volume Ratio and Margin of Safety
4. Apply the different methods of C-V-P Analysis in solving both single product and Multiple products C-V-P Analysis Problems and
5. Effectively apply the C-V-P Analysis to HR decisions

14.1 Introduction

In break-even analysis or CVP analysis an activity level is determined at which all relevant costs are recovered and there is a situation of no profit or no loss. This activity level is called break-even point. The break-even point in any business is that point at which the volume of sales or revenues exactly equals total expenses or the point at which there is neither a profit nor loss under varying levels of activity. The break-even point tells the manager what level of output or activity is required before the firm can make a profit; reflects the relationship between costs, volume and profits. In another words break-even point is the level of sales or production at which the total costs and total revenue of a business are equal.

The cost-volume-profit (CVP) analysis helps management in finding out the relationship of costs and revenues to profit. The aim of an undertaking is to earn profit. Profit depends upon a large number of factors, the most important of which are the costs of manufacture and the volume of sales effected. Both these factors are interdependent volume of sales depends upon the volume production, which in turn is related to costs. Cost, again, is the resultant of the operation of a number of varying factors. Such factors affecting costs are:

- (i) Volume of production;
- (ii) Product-mix;
- (iii) Internal efficiency;
- (iv) Methods of production; and
- (v) Size of plant; etc.

Analysis of cost-volume-profit involves consideration of the interplay of the following factors:

- (i) Volume of sales;
- (ii) Selling price;
- (iii) Product mix of sales;
- (iv) Variable costs per unit; and
- (v) Total fixed costs.

The relationship between two or more of these factors may be:

- (i) present in the form of reports and statements,
- (ii) shown in charts or graphs, or
- (iii) established in the form of mathematical deductions.

From the break-even charts, break-even point and profits at a glance can be found out. Besides, management make profit planning with the help of break-even charts. It can clearly be understood by way of charts to know the changes in profit due to changes in costs and output. Such profit planning is made with the variables mainly cost, profit and volume, such an analysis is called break-even analysis. Throughout the chart's relationship is established among the cost, volume and profit, it is also called Cost-Volume-Profit Analysis (CVP analysis). That is why it is popularly said by S.C. Kuchal in his book "Financial Management - An Analytical and Conceptual Approach", that Cost-volume-profit analysis, break-even analysis and profit graphs are interchangeable words.

14.2 Definition of The Cost-Volume-Profit Analysis/ Break Even Analysis

The term break even analysis is the commonly used, but it is somewhat misleading as it implies that the only concern is within that level of activity which produce neither profit nor loss in the break-even point, although the behaviour of the cost and profit at other level is usually of much greater significance because of this as an alternate term Cost-Volume Profit Analysis; is frequently used and is more descriptive. At Break-even point or level, the sales revenues are just equal to the costs incurred. Below break-even point level the firm will make losses, while above this level it will be making profits. This is so because that while the variable costs vary according to the variations in the volume or level of activity while the fixed costs do not change. Below the break-even point, fixed costs will eat up all excess of sales over variable cost and yet be unsatisfied, leaving a loss. Above the BEP, excess of sales over variable costs (this excess is known as contribution) which is much more than the fixed costs of the activities and, it, thus leads to profits. Thus, in Break-Even Analysis or Cost Volume Profit Analysis, it is possible to analyse the effect of changes in volume, prices and variable costs on the profits of an organization, while taking fixed costs as unchangeable.

14.3 Objectives or Significance of the C-V-P Analysis

The important uses to which cost-volume profit analysis or break-even analysis or profit charts may be put to use are:

- a. Forecasting costs and profits as a result of change in volume determination of costs, revenue and variable cost per unit at various levels of output.
- b. Fixation of sales volume level to earn or cover given revenue, return on capital employed, or rate of dividend.
- c. Determination of effect of change in volume due to plant expansion or acceptance of order, with or without increase in costs or in other words, determination of the quantum of profit to be obtained with increased or decreased volume of sales.
- d. Determination of comparative profitability of each product line, project or profit plan.
- e. Suggestion for shift in sales mix.
- f. Determination of optimum sales volume.
- g. Evaluating the effect of reduction or increase in price, or price differentiation in different markets.
- h. Highlighting the impact of increase or decrease in fixed and variable costs on profit.
- i. Studying the effect of costs having a high proportion of fixed costs and low variable costs and vice-versa.
- j. Inter-firm comparison of profitability.
- k. Determination of sale price which would give a desired profit for break-even.
- l. Determination of the cash requirements as a desired volume of output, with the help of cash break- even charts.
- m. Break-even analysis emphasizes the importance of capacity utilization for achieving economy.
- n. During severe recession, the comparative effects of a shutdown or continued operation at a loss are indicated.
- o. The effect on total cost of a change in the fixed overhead is more clearly demonstrated through break-even charts.

14.4 Disadvantages/Limitations Of C-V-P Analysis

- a. It helps the firm to determine how many units of their product they should be producing and how to manage scarce resources.
- b. It allows manager to determine the ideal selling price they should set to achieve a target level of profit.

- c. It allows manager to control costs to achieve a target level of profit
- d. This technique is suitable for businesses of all sizes, including very small businesses.
- e. It provides detailed and clearly understandable information. The chart visualises the information very clearly and a glance at the chart gives a vivid picture of the whole affairs. The information is presented in a simple form and therefore, is clearly understandable even to a layman.
- f. The profitability of different products can be known with the help of break-even charts, besides the level of no-profit no-loss. The problem of managerial decision regarding temporary or permanent shutdown of business or continuation at a loss can be solved by break-even analysis.
- g. The effect of changes in fixed and variable costs at different levels of production or profits can be demonstrated by the graph legibly.
- h. The break-even chart shows the relative importance of fixed cost in the total cost of a product. If the costs are high, it induces management to take measures to control such costs.
- i. The economies of scale, capacity utilization, comparative plant efficiencies can be analysed through the break-even chart. The operational efficiency of a plant is indicated by the angle of incidence formed at the intersection of the total cost line and sales line.
- j. Break-even analysis is very helpful for forecasting, long-term planning, growth and stability

Other Disadvantages/Limitations Of C-V-P Analysis

- a. That costs are either fixed or variable and all costs are clearly segregated into their fixed and variable elements. This cannot possibly be done accurately and the difficulties and complications involved in such segregation make the break-even point inaccurate.
- b. That the behaviour of both costs and revenue is not entirely related to changes in volume.
- c. That costs and revenue patterns are linear over levels of output being considered. In practice, this is not always so and the linear relationship is true only within a short run relevant range.
- d. That fixed costs remain constant and variable costs vary in proportion to the volume. Fixed costs are constant only within a limited range and are liable to change at varying levels of activity and also over a long period, particularly

when additional plants and equipment are introduced i.e. that sales mix is constant or only one product is manufactured. A combined analysis taking all the products of the mix does not reflect the correct position regarding individual products.

- e. That production and sales figures are identical or the change in opening and closing stocks of the finished product is not significant.
- f. That the units of production on the various product range are identical. Otherwise, it is difficult to find a homogeneous factor to represent volume. That the activities and productivity of the concern remain unchanged during the period of study, i.e. as output is continuously varied within a limited range, the contribution margin remains relatively constant. This is possible mainly where the output is more or less homogeneous as in the case of process industries.

14.5 Assumptions of the C-V-P Analysis

Before any formulae are given or graph drawn, the major assumption behind C-V-P analysis must be stated. These are;

- a. All costs can be classified into fixed and variable element
- b. Fixed cost will remain constant and variable cost vary proportionately with activity
- c. Over the activity range being considered costs and revenues behave in a linear fashion.
- d. That the only factor affecting costs and revenues is volumes
- e. The technology, production method and efficiency remain unchanged
- f. There is no stock level change or that stock is valued at Marginal Cost Only

14.6 The Concept of Contribution as it Relate to C-V-P Analysis

If a system of marginal costing is operated in an organisation with more than one product, it will not be possible to ascertain the net profit per product because fixed overheads are charged in total to the profit and loss account rather than recovered in product costing. The contribution of each product is charged to the firm's total fixed overheads and profit is ascertained. Contribution is the difference between selling price and variable cost of sales. It is visualised as some sort of a fund or pool, out of which all fixed costs, irrespective of their nature are to be met, and to each product has to contribute its share. The excess of contribution over fixed costs is the profit. If the total contribution does not meet the entire fixed cost, there will be loss.

In normal circumstances, selling prices contain an element of profit but there may be circumstances, when products may have to be sold at cost or even at loss. Therefore, the character of contributions will have the following composition under different circumstances:

- (i) Selling price containing profit:
- (ii) Contribution = Fixed cost + Profit
- (iii) Selling price at cost:
- (iv) Contribution = Fixed cost
- (v) Selling price at loss:
- (vi) Contribution = Fixed cost – Loss

Marginal Cost Equations

As we know:

Sales-Cost= Profit

Or Sales- (Fixed cost + Variable cost) = Profit

Or Sales- Variable cost= Fixed cost + Profit

It is known as marginal cost equation. We can convey it as under:

S- V= F + P

Where:

S = Sales

V= Variable Cost

F= Fixed Cost

P= Profit

14.7 Contribution Margin Ratio and its Significance

The ratio or percentage of contribution margin to sales is known as P/V ratio. This ratio is also known as marginal income ratio, contribution to sales ratio, or variable profit ratio. P/V ratio, usually expressed as a percentage, is the rate at which profit increases with the increase in volume. The formulae for P/V ratio are:

$$P / V \text{ ratio} = \frac{\text{Marginal Contribution}}{\text{Sales}}$$

Or

$$\frac{\text{Sales Value} - \text{Variable Cost}}{\text{Sales Value}}$$

Or

$$1 - \frac{\text{Variable Cost}}{\text{Sales Value}}$$

Or

$$\frac{\text{Fixed Cost} + \text{Profit}}{\text{Sales Value}}$$

Or

$$\frac{\text{Change in Profits} / \text{Contributions}}{\text{Change in Sales}}$$

(All the above formulae really mean the same thing).

A comparison for P/V ratios of different products can be made to find out which product is more profitable. Higher the P/V ratio more will be the profit and lower the P/V ratio, lesser will be the profit. P/V ratio can be improved by:

- i. Increasing the selling price per unit.
- ii. Reducing direct and variable costs by effectively utilising, men, machines and materials.

Significance of Profit-Volume (P/V) Ratio

Profit volume (or contribution-sales) ratio is a logical extension of marginal costing. It is the study of the inter-relationships of cost behaviour patterns, levels of activity and the profit that results from each alternative combination. The significance of profit volume ratio may be enumerated from the following applications which are as under:

- a. Ascertainment of profit on a particular level of sales volume.

- b. Determination of break-even point.
- c. Calculation of sales required to earn a particular level of profit.
- d. Estimation of the volume of sales required to maintain the present level of profit in case selling prices are to be reduced by a stipulated margin.
- e. Useful in developing flexible budgets for cost control purposes.
- f. Identification of minimum volume of activity that the enterprise must achieve to avoid incurring losses.
- g. Provision of data on relevant costs for decisions relating to pricing, keeping or dropping product lines, accepting or rejecting particular orders, make or buy decision, sales mix planning, altering plant layout, channels of distribution specification, promotional activities etc.
- h. Guiding in fixation of selling price where the volume has a close relationship with the price level.
- i. Evaluation of the impact of cost factors on profit.

14.8 Margin of Safety

Margin of safety is the difference between the actual sales and sales at break-even point. A sale beyond break-even volume brings in profits. Such sales represent a margin of safety. Margin of safety is calculated as follows:

$$\text{Margin of safety} = \text{Total sales} - \text{Break even sales}$$

Margin of safety can also be calculated with the help of P/V ratio i.e

$$\text{Margin of safety} = \frac{\text{P/V Ratio}}{\text{Profit}}$$

Margin of safety can also be expressed as percentage of sales

$$\frac{\text{Margin of safety}}{\text{Total sales}} \times 100$$

Total Sales

It is important that there should be reasonable margin of safety, otherwise, a reduced level of activity may prove disastrous. The soundness of a business is gauged by the size of the margin of safety. A low margin of safety usually indicates high fixed overheads so that profits are not made until there is a high level of activity to absorb fixed costs.

A high margin of safety shows that break-even point is much below the actual sales, so that even if there is a fall in sales, there will still be a profit. A low margin of safety is accompanied by high fixed costs, so action is called for reducing the fixed costs or increasing sales volume.

The margin of safety may be improved by taking the following steps:

1. Lowering fixed costs.
2. Lowering variable costs so as to improve marginal contribution.
3. Increasing volume of sales, if there is unused capacity.
4. Increasing the selling price, if market conditions permit, and
5. Changing the product mix as to improve contribution.

14.9 Methods Of C-V-P Analysis

The sales volume which equates total revenue with related costs and results in neither profit nor loss is called break-even point (BEP). Break-even point can be determined by the following methods:

1. Algebraic methods:
 - a. Contribution Margin Approach
 - b. Equation technique
2. Graphic presentation:
 - a. Break-even chart
 - b. Profit volume chart

Algebraic Methods

1. Contribution Margin Approach

Break-even point (in units) =	$\frac{\text{Total fixed costs}}{\text{Selling per unit - Variable unit per price}}$
Or	$\frac{\text{Total fixed cost}}{\text{Contribution per unit}}$

Or

Break-even point (in naira) = Fixed cost/ P/V Ratio
OR = Break-even points (units) × Selling price per units

Equation Technique

It is based on an income equation i.e.

$$\text{Sales} - \text{Total costs} = \text{Net profit.}$$

Breaking up total costs into fixed and variable,

$$\text{Sales} - \text{Fixed costs} - \text{Variable cost} = \text{Net profit}$$

$$\text{Sales} = \text{Fixed costs} + \text{Variable cost} + \text{Net profit}$$

i.e.

$$SP(S) = FC + VC(S) + P$$

where

SP = Selling price per unit

S = Number of units required to be sold to break-even

FC = Total fixed costs

VC = Variable cost per unit

P = Net profit (Zero)

$$SP(S) = FC + VC(S) + \text{Zero}$$

$$SP(S) = FC + VC(S) + 0$$

$$SP(S) - VC(S) = FC$$

or

$$S(SP - VC) = FC$$

$$S = \frac{FC}{SP - VC}$$

$$S = \frac{FC}{SP - VC}$$

To calculate the level of sales required to earn a particular level of profit, the formula is:

$\text{Required Sales (in ` `` `)} = \text{Fixed cost} + \text{Desired profit}$ <p>P/V Ratio</p>
--

Illustration:

A product is sold at a price of N120 per unit and its variable cost is N80 per unit. The fixed expenses of the business are N8,000 per year. Find the

1. BEP in naira and units
2. Profits made when sales are 240 units
3. Sales to be made to earn a net profit of N5,000 for the year

Graphic Presentation

1. Break-even chart

According to the Chartered Institute of Management Accountants, London the break-even chart means “a chart which shows profit or loss at various levels of activity, the level at which neither profit nor loss is shown being termed as the break-even point”. It is a graphic relationship between costs, volume and profits. It shows not only the BEP but also the effects of costs and revenue at varying levels of sales. The break-even chart can therefore, be more appropriately called the cost-volume-profit graph

Assumptions Regarding Break-Even Charts are as Under:

1. Costs are bifurcated into variable and fixed components.
2. Fixed costs will remain constant and will not change with change in level of output.
3. Variable cost per unit will remain constant during the relevant volume range of graph.
4. Selling price will remain constant even though there may be competition or change in volume of production.
5. The number of units produced and sold will be the same so that there is no operating or closing stock.
6. There will be no change in operating efficiency.
7. In case of multi-product companies, it is assumed that the sales mix remains constant.

A break-even chart can be presented in different forms.

First Method of Break-Even Charts

On the X-axis of the graph is plotted the volume of productions or the quantities of sales and on the Y-axis (vertical line) costs and sales revenues are represented. The fixed costs line is drawn parallel to X-axis. The variable costs for different levels of activity are plotted over the fixed cost line, which shows that the cost is increasing with the increase in the volume of output. The variable cost line is joined to fixed cost line at zero volume of production. This line is regarded as the total cost line. Sales values at various levels of output are plotted from the origin and joined is called the sales line. The sales line will cut the total cost line at a point where the total costs equal to total revenues and this point of intersection of two lines is known as break-even point or the point of no profit no loss. The lines produced from the inter-section to Y-axis and X-axis may give sales value and the number of units produced at break-even point respectively. Loss and profit are as have been shown in the chart which shows that if production is less than the break-even point, the business shall be running at a loss and if the production is more than the break-even level, there will be profit. The angle which the sales line makes with total cost line while intersecting it at BEP is called angle of incidence. A large angle of incidence denotes a good profit position of a company.

Illustration

From the following data, calculate the break-even point by means of a break-even chart:

- Selling price per unit = 15
- Variable cost per unit = 10
- Total fixed cost = N150,000

Solution:

For plotting the data, we need at least two points - one for plotting the total cost line and other for plotting the total sales line. Therefore, it will be necessary to presume different levels of output and sales as below:

Unit output	Fixed cost	Variable Cost	Total Cost	Sales
0	1,500,000	-----	1,500,000	-----

10,000	1,500,000	1,000,000	2,500,000	1,500,000
20,000	1,500,000	2,000,000	3,500,000	3,000,000
30,000	1,500,000	3,000,000	4,500,000	4,500,000
40,000	1,500,000	4,000,000	5,500,000	6,000,000
50,000	1,500,000	5,000,000	6,500,000	7,500,000
60,000	1,500,000	6,000,000	7,500,000	9,000,000

Multi-Product C-V-P Analysis

Practice Questions

Multiple Choice Questions

1. The break-even point can be defined as?
 - A. The level of activity at which there is neither profit nor loss
 - B. The level of activity where cash flow is zero
 - C. The level of activity where profits equal fixed costs
 - D. The level of activity where variable costs are covered by sales revenue

2. Cost volume profit analysis is the most important tool of profit determination
 - (a) True
 - (b) False
 - (c) Both
 - (d) None of above

3. If actual units produced are lower than the budgeted level of production which of the following types of cost would you expect to be lower than the budget?
 - (a) Variable costs per unit**
 - (b) Total variable costs
 - (c) Total fixed costs
 - (d) None

4. Costs that do not change when the activity base fluctuates are known as?
 - (a) Variable costs
 - (b) Discretionary costs
 - (c) Fixed costs**
 - (d) Mixed cost

5. A company's telephone bill consisting of a N200 monthly base amount, plus long-distance charges, would be classified as a?
 - (a) Variable cost
 - (b) Committed fixed cost
 - (b) Discretionary fixed cost
 - (d) Mixed cost**

6. A company has fixed costs of N50,000 and variable costs per unit of output of N8. If its sole product sells for N18, what is the break-even quantity of output?
 - (a) 2,500
 - (b) 5,000**
 - (c) 1,500
 - (d) 7,500

7. Which of the following costs would decrease if production levels were increase within the relevant range?
 - (a) Total fixed costs
 - (b) Variable costs per unit
 - (c) Total variable costs
 - (d) Fixed costs per unit**

8. The indicator that results in total revenues being equal to total cost is called the?
 - (a) Break-even point**
 - (b) Marginal cost
 - (c) Profit mix
 - (d) Marginal volume

9. Cost volume profit analysis is essential for developing _____ budget equations.
 - (a) Fixed
 - (b) Flexible
 - (c) Both flexible and fixed**
 - (d) None of flexible and fixed

10. CVP analysis is planning tool analysis inherent relationship between
 - (a) Price-Cost Structure-Volume-Profit
 - (b) Cost Structure-Volume-Profit-Price
 - (c) Cost Structure-Profit-Price-Volume
 - (d) All of the above**

Theoretical Questions

1. Define the term Cost Volume Profit (C-V-P) Analysis and its uses for effective decision making.
2. Explain the rationale behind the C-V-P Analysis and the underlying assumptions for its operation.
3. Differentiate between Contribution, and Contribution Margin Ratio
4. Explain the term Margin of Safety and state 4 importance of Margin of Safety
5. Given that variable cost per unit is N60, selling price if N100 and fixed cost if N100,000, what is the expected break-even quantity and profit if units sold is 4,000 units

CHAPTER 15
TAXATION, TAX ADMINISTRATION AND PROCEDURES

Learning Objectives:

After studying this chapter, candidates should be able to:

1. Understand the objectives, concepts, scope, and principles of an effective taxation system
2. Know the operationalization and administration of taxation within the Nigerian jurisdiction
3. Critically analyse the challenges of the Nigerian Tax Administration system.
4. Understand how to determine and compute Personal Income Taxes, as it relates to individuals in employment or business, partners in Partnership, Trusts, Estates and Settlements.
5. Compute Investment Income Tax, Withholding Tax, Value Added Tax, Tertiary Education Tax, and Capital Gains Tax and

6. Keep abreast of contemporary issues in the Nigerian Taxation system with respect to the relevant tax laws and the Finance Act, 2019.

15.1 Meaning/Definition of Taxation

Tax and Taxation

Tax may be described as a compulsory levy imposed on individuals and corporate bodies by government, without quid – pro-quod without the expectation of anything in return from the government. Tax can also be defined as a monetary charge imposed by the government on persons, entities, transactions or property to yield public revenue needed to finance its expenditure and create conditions for the economic well-being of the society.

Taxation can be described as the process or machinery by which community or group of individuals are made to contribute, in an agreed quantum and method for the purpose of the administration of their society or community.

In summary, the essentials of tax include:

- (i) A tax is a compulsory contribution of a person or entity to the state as per the rules.
- (ii) The tax payer does not receive direct and or special benefit in return.
- (iii) It is spent by the government for the common interest and benefit of the people.
- (iv) It is paid only by those persons and entities who earns income exceeding a certain specified limit.

Reasons for Imposing Taxes

1. **Raising money for government spending.** The most obvious reason is to raise money for all the expenditure that is required. Hospitals, schools, the defence system, the welfare state; these things do not come cheaply. Local taxes also have to be levied to help pay for libraries, cleaning the roads, local parks and the local council administration to name just a few items.
2. **Redistributing income:** If the system used is progressive, then the tax system will be helping the relatively less well off at the expense of the better off. In Nigeria, this is carried out through such measures as the National Minimum Wage, the New Deal and the Graduated tax rate.

3. **Demand management:** This is the means through which the government create the necessary demand to resurrect the economy. This can be done by increasing government spending and/or reducing taxes.
4. **Correcting market failure:** Governments use taxes to force the firms to produce the socially optimal level of output. Some items that are thought of as 'good' may be exempt from taxes that most other goods attract. A few goods are 'zero-rated', meaning they attract no Value Added Tax (VAT) such as educational materials.

15.2. Historical Development of Taxation in Nigeria

There had been established systems of government known as 'traditional or political institutions in several parts of Nigeria before the coming of the Europeans Lords to the shores of West Africa. These orderly and advanced systems of government had all the principal organs of government with the 'principles of checks and balances' applied in some of them.

Pre-Colonial Experience

Prior to the advent of the colonial masters, there had been a particular system of direct taxation in what was then known as 'Niger Area', except for the fact that the system varied from one part, of what is now known as 'Nigeria', to the other. It must be emphasized that during the pre-colonial era, taxation functioned primarily on ethical basis.

Taxation in the Northern Area of Nigeria

In the Northern area, there was an efficient and stable tax administration, which was based principally on the Islamic principles. The forms of taxes include, but not limited to:

Zakat:

This is levied on all Muslims, based on Islamic injunctions. It is levied at the rate of 2 ½ % of the retained income in a year. It is a tax levied on Muslims for charitable, religious and educational purposes. The Muslims are happy to pay Zakat because they believe that this will make them enter aljanah (heaven).

Kuridin-Kassa:

This is charged on land used for agricultural purposes by individuals in a community. It is normally collected by the ‘Dongaris (Native police)’ on behalf of the Emir.

Shukka-Shukka:

This is a form of tax levied on individuals for food crops planted by him. It is collected and usually paid in-kind. The collection is done by the ‘Dongaris’ on behalf of the Emir.

Jangali: This is another form of tax that is paid on the heads of cattle and some other livestock owned by individuals. It is collected by the ‘Dongaris’ on behalf of the Emir.

Taxation in The South-Western Area of Nigeria

In the South-Western area, the system of government in Yorubaland is through the Obaship or Chiefs. The mode of collection of taxes in Yorubaland is not as sophisticated as that of the Northern area, and it is very crude. Some of the taxes include but not limited to:

- i. **Ishakole:** This is a form of tax that is paid by a community to a more superior community. Ishakole are always paid in kind, such as gallons of palm-oil, tubers of yam, basket of maize, etc. If there is any default in payment of Ishakole, the Oba (King) or the Chief, as the case may be, may seize or acquire the properties of the members of the less superior communities as punishment for the default. The properties include wife or wives of the defaulting communities.
- ii. **Owo-Ori:** This is another form of tax that is levied on adult individuals, either in cash or in kind, especially men of the communities. It is compulsory; hence the Yoruba people have a parlance for it “*danda l’owo ori*”, meaning that payment is compulsory and defaulters are usually punished.
- iii. **War Returns:** This is a form of tax that a community which is defeated in a war has to pay to the victorious community. A default may make the superior community to raise the vanquished community again over their properties.
- iv. **Community Efforts:** This is another form of tax in which every able-bodied male and female is compulsorily made to take part in specific operation for the purpose of development and administration of their community. These include building wooden bridges and clearing community paths during festivals and important occasions.

Taxation in The Eastern Area of Nigeria

In the **Eastern area**, the form of administration in Igbo land is republican in nature as there was no room for Obaship or Emirship in the South-eastern area of Nigeria. Some of the taxes in this area include but not limited to:

Egbu-Nkwu:

This is a form of tax that is levied on individuals for palm oil harvested. The proceeds from the tax are paid to the community council and the council is expected to use the proceeds for developmental purposes. This is based on the belief that the land on which the palm trees grow, belongs to the community.

Community Efforts:

This is a form of tax which is in the form of men working in rotational groups on the farmlands of the Obis and women fetching water and cooking for them. Palm-wine tapers were also expected to submit certain numbers of gourds to the Obis during village festivals and other important occasions, which was another form of tax.

Utu Amala: This is a form of tax levied on the community as a whole and collected on behalf of the Obis.

15.3 Basic Principles of Taxation

These canons of taxation define numerous rules and principles upon which a good taxation system should be built. It describes the characteristics or qualities which a good tax system should possess. These include:

1. **Canon of Equity.** It implies that tax should be levied on citizens on the basis of equality. The sacrifice of all citizens must be equal. i.e. every person should pay to the State as tax according to ability to pay.
2. **Canon of Certainty:** This suggests that the tax which an individual has to pay, should be certain to the tax payer i.e. he should know how much tax he has to pay, to whom and by what time the tax is to be paid.

3. **Canon of Convenience or Ease:** This requires that every tax should be levied in such a manner and at such a time that it affords to the maximum of convenience to the tax payer.
4. **Canon of Economy:** This principle suggests that the cost of collecting tax should be the minimum so that a major part of collections may bring to the government treasury. If the administration expenses in the collection of taxes consume a major portion of tax revenue collected; it cannot be said to be a good tax system.
5. **Canon of Productivity:** According to this canon, the tax should be of such a nature as to yield sufficient income to the Government to run the administration efficiently and to work for the welfare of the people. Tax yield is important and every finance minister considers the yield before proposing any new tax. If a tax yields poor income, it cannot be said to be a good and productive tax. It is very often suggested that a few productive taxes are better than to go for a large number of unproductive taxes on the people.
6. **Canon or Elasticity.** The tax system of the government should be elastic so that tax burden may be increased or reduced from time to time as and when the demand for revenue changes. The tax system should have a capacity to respond quickly to the changes in demand for revenue. If the tax system is inelastic, the government cannot be able to meet various exigencies arise from time to time.
7. **Canon of Simplicity.** According to this canon of taxation, the tax should not be complicated in its nature. It should be so simple that tax payer can understand its complications without the help of any expert. It would safeguard the tax payer against the exploitation of tax authorities and experts. It would also reduce the chance of tax evasion. If the tax is complicated, it will harass the tax payer and instigate him to evade tax. It would also add to legal complications.
8. **Canon of Diversity.** The canon requires that there should be a number of taxes of different varieties so that every class of citizen may be called upon to pay something towards the national exchequer. The yield from a number of taxes is more dependable than from any one. The reason being that a person can manipulate to avoid single tax.

15.4 Classification of Taxes

There are lots of ways in which taxes can be categorized but most textbooks and economists like to start by categorising taxes into **direct** and **indirect** taxes.

Direct Taxes:

A **direct tax** is one that is paid directly by the individual worker or firm. It is the type of tax in which the incidence of payment is felt by the taxpayer. e.g. Personal income tax, Company income tax, Capital gain tax, Inheritance tax, Stamp duty (paid when buying a house) and Petroleum profit tax.

Advantages of Direct Tax

- a. Direct tax is equitable as it is imposed on person as per the property or income.
- b. Time, procedure and amount of tax paid to be paid is known with certainty.
- c. Direct tax is elastic. The government can change tax rate with the change in the level of property or income.
- d. Direct tax enhances the consciousness of the citizens. Taxpayers feel burden of tax and so they can insist the government to spend their contributions for the welfare of the community.

Disadvantages of Direct Tax

- a. Direct tax gives mental pinch to the taxpayers as they have to curtail their income to pay to the government.
- b. Taxpayers feel inconvenience as the government impose tax progressively.
- c. Tendency to evade tax may increase to avoid tax burden.
- d. It is expensive for the government to collect tax individually.

Indirect taxes:

These are those that are demanded from one person, in the expectation and intention that he shall indemnify himself at the expense of another i.e. they are imposed on commodities before they reach the consumer, and are paid by those upon whom they ultimately fall, not as taxes but as part of the market price of the commodity .e.g. Value-added tax, Stamp duty, Excise duty, Custom duty, tobacco and alcohol duties, fuel duties (on petrol) and betting duties. It could be **specific** in which case a fixed amount is levied on a commodity per unit. It could also be **ad-valorem** when the tax imposed is a percentage of the cost of the commodity.

Advantages of Indirect Tax

1. Indirect tax is convenient as the taxpayer does not have to pay a lump sum amount for tax.
2. There is mass participation. Each and every person getting goods or services has to pay tax.
3. There is a less chance of tax evasion as the taxpayers pay the tax collected from consumer
4. The government can check on the consumption of harmful goods by imposing higher taxes.

Disadvantages of Indirect Tax

1. Indirect tax is uncertain. As demand fluctuates, tax will also fluctuate.
2. It is regretful as the tax burden to the rich and poor is same.
3. Indirect tax has bad effect on consumption, production and employment. Higher taxes will reduce all of them.
4. Most of the taxes are included in the price of goods or services. As result, taxpayers do not know how much tax they are paying to the government.

Taxes can also be classified according to how the burden of the tax falls on tax payer:

1. **Progressive Tax:** A tax is said to be progressive, if the percentage of taxpayer's income paid as tax goes up when the taxpayer's income increases i.e. is graduated to apply higher rates of tax as income increases e.g. First ₦300,000 income pays 7%, Next ₦300,000 pays 11%, etc.
2. **Proportional Tax:** This is one where the percentage of taxpayer's income paid as tax is the same, irrespective of the size of income. i.e. the proportion paid by each taxpayer bears the same ratio to the amount to be raised as the value of his property bears to the total taxable income.
3. **Regressive Tax:** This is one when people with smaller income pay a greater percentage of their income as tax when compared with people who earn higher income. This form of taxation is not a suitable tax for developing countries as it cannot generate the required revenue and is unacceptable by failing to provide a just and egalitarian society.

15.5 Purposes/Objectives of Taxation

The concept of tax was initiated with a view to generate government revenue in its very beginning stage. During the course of time it has been utilized for various purposes.

- To raise government revenue for development and welfare programmes in the country.
- To maintain economic equalities by imposing tax to the income earners and improving the economic condition of the general people.
- To encourage the production and distribution of the products of basic needs and discourage the production and harmful ones.
- To discourage import trade and protect the national industries.
- To provide for public goods and services.
- To redistribute income and wealth.
- To promote social and economic welfare.
- For economic stability.
- Reduce Unemployment.
- Remove Regional Disparities.

15.6 Importance of Taxation

Tax is a major source of government revenue and it contributes to the overall development and prosperity of a country:

1. Raising government revenue in terms of income tax, custom duty, excise duty, entertainment tax, VAT, land revenue tax etc. from various sectors in order to initiate development and welfare programmes.
2. Maintaining economic stability by reducing economic inequalities by means of equitable distribution of wealth by way of imposing tax to the income earners and improving the economic condition of the general people.
3. Regulating the economic sectors into right direction by encouraging the production and distribution of useful goods and discouraging the harmful products by imposing high tax rate on them.

4. Building and strengthening the national economy by encouraging and protecting national industries and promoting export trade.
5. Reducing regional economic disparity by encouraging the entrepreneurs to establish industries in remote and backward regions by giving tax exemptions, rebates and concessions etc.

15.7 Features of a Good Tax System

A tax system is expected to be fair and non-discriminatory. For a tax system to meet these requirements, it must have the following attributes:

1. **Neutral:** A Neutral tax must be unbiased across economic activities, and not overly penalize work in favour of leisure, nor tax income used for saving and investment more heavily than income used for consumption.
2. **Visibility:** A very large segment of the population must be keenly aware that government costs money, government spending should be held to levels at which its benefits match its costs. This is a critical factor in most developing countries (including Nigeria) where the citizenry believe that tax revenues are not being expeditiously administered.
3. **Fairness:** This is often stated as making the rich pay higher share of their income in taxes than the poor. There should be some amount of income exempted from tax to shelter the poorest citizens.
4. **Simplicity:** A tax system should be easy for the government to administer and enforce and be easy and inexpensive for taxpayers to comply with. There should be clear definition of income and elimination of multiple layers of tax would create a system that is much simpler and easier to administer, enforce and comply with.
5. **Convenience:** A good tax system should be convenient in terms of time and mode of payment to the taxpayer.
6. **Administrative Efficiency:** The process of levying and collecting taxes must be administratively efficient, transparent and economical without any distortion.
7. **Productive:** A tax system should be such that brings in sufficient revenue to the government.

15.8 Concepts in Personal Income Tax

Act in relation to personal income tax, is the Personal Income (Amendment) Act, 2011.

1. **Consolidated Relief Allowance** refers to the relief or tax-free allowance granted to a tax payer of ₦200,000 or 1% of gross income, whichever is higher, plus 20% of the gross income.
2. **Board** means the Joint Tax Board.
3. **Company** means a company or corporation (other than a corporation sole) established by or under a law in force in Nigeria or elsewhere;
4. **Earned income** in relation to an individual, means income derived by him from a trade, business, profession, vocation or employment carried on or exercised by him and a pension derived by him in respect of a previous employment. It refers to the income derived from one's own labour or through active participation in a business as distinguished from income from dividends or investments.
5. **Employment** refers to any service rendered by any person in return for any gains or profits. It includes any appointment or office, whether public or otherwise, for which remuneration is payable, and "employee" and "employer" shall be construed accordingly.
6. **Executor** includes any person administering the estate of a deceased person.
7. **Foreign employment** means an employment the duties of which are wholly performed outside Nigeria save during any temporary visit of the employee to Nigeria.
8. **Gross emolument (or income)** is defined to include wages, salaries, allowances (including benefits in kind), gratuities, superannuation and any other incomes derived solely by reason of employment.
9. **Income chargeable** refers to "any salary, wage, fee, allowance or other gain or profit from employment including compensations, bonuses, premiums, benefits or other perquisites allowed, given or granted by any person to any temporary or permanent employee other than so much of any sums or expenses incurred by him in the performance of his duties, and from which it is not intended that the employee should make any profit or gain".
10. **Individual** includes a corporate sole and a body of individuals but does not include a company, partnership, community, family trustee executor, or any body of trustees or executor

- 11. *Itinerant workers*:** an itinerant worker is an individual who works during a year of assessment (other than as a member of the armed forces) for wages, salaries or livelihood in more than one state for a minimum of twenty (20) days in at least three (3) months of every assessment year.
- 12. *Nigerian employment*** means any employment, not being a foreign employment, the duties of which are wholly or partly performed in Nigeria.
- 13. *Nigerian pension*** means a pension in respect of past service under, and payable by, a government or governments in Nigeria.
- 14. *Person*** includes an executor, trustee, company, partnership, community, family and any individual.
- 15. *Personal emoluments*** refer to any salary, wage, fee, allowance or other gain or profit from employment including compensations, bonuses, premiums, benefits or other prerequisites allowed, given or granted by any person to any temporary or permanent employee.

15.9 Administrative Structure of the Nigeria Income Tax System

The administration of tax is vested in various tax authorities, referred to as organs of tax administration, depending on the type of tax under consideration. In Nigeria, the following are the recognised organs of tax administration:

- (a) Federal Board of Inland Revenue (FBIR);
- (b) Joint Tax Board (JTB);
- (c) State Inland Revenue Board (SBIR);
- (d) Joint State Revenue Committee (JSRC);
- (e) Local Government Revenue Committee (LGRC); and
- (f) Tax Appeal Tribunal (TAT)

Federal Inland Revenue Service Board (FIRSB)

Composition of FIRSB

The Federal Inland Revenue Service (establishment) Act, No. 13 of 2007 highlights the composition of the Board as follows:

1. It states that the Board shall consists of the following members, other than the Executive Chairman, who shall be part- time members –
2. The Executive chairman of the Service who shall be experienced in taxation as

Chairman of the Service to be appointed by the President and subject to the confirmation of the Senate.

3. Six members with relevant qualifications and expertise who shall be appointed by the President to represent each of the six geo-political zones;
 - a. A representative of the Attorney-General of the Federation.
 - b. The Governor of the Central Bank of Nigeria or his representative.
 - c. A representative of the Minister of Finance not below the rank of a Director;
 - d. The Chairman of the Revenue Mobilization, Allocation and Fiscal Commission or his
 - e. representative who shall be any of the Commissioners representing the thirty-six States of the Federation;
 - i. The Group Managing Director of the Nigerian National Petroleum Corporation or his representative who shall not be below the rank of a Group Executive Director of the Corporation or its equivalent.
 - ii. The Comptroller-General of the Nigeria Customs Service or his representative not below the rank of Deputy Comptroller-General
 - iii. The Registrar-General of the Corporate Affairs Commission or his representative not below the rank of a Director; and
 - iv. The Chief Executive Officer of the National Planning Commission or his representative not below the rank of a Director.

Any Seven (7) members of the Board, of whom one shall be the Chairman or a Director in the Federal Inland Revenue Service, shall constitute a quorum. The Secretary to the Board shall be an ex-officio member, appointed from within the Federal Inland Revenue Service.

Functions of FIRSB

1. Assess persons including companies, enterprises chargeable with tax,
2. Assess, collect, account and enforce payment of taxes as may be due to the government or any of its agencies;
3. Collect, recover and pay to the designated account any tax under any provision of the Act or any other enactment or law;
4. In collaboration with the relevant ministries and agencies, review the tax regimes and promote the application of tax revenues to stimulate economic activities and development;

5. In collaboration with the relevant law enforcement agencies, carry out the examination and investigation with a view to enforcing compliance with the provisions of the Act;

;

Powers of FIRSB

1. Provide the general policy guidelines relating to the functions of the Service;
2. Manage and superintend the policies of the Service on matters relating to the administration of the revenue assessment, collection and accounting system under the Act or any enactment or law;
3. Review and approve the strategic plans of the Service;
4. Employ and determine the terms and conditions of service including disciplinary measures of the employees of the Service;
5. Stipulate remuneration, allowances, benefits and pensions of staff and employees in consultation with the National Salaries, Income and Wages Commission; and
6. Do such other things which in its opinion are necessary to ensure the efficient performance of the functions of the Service under the Act.

Joint Tax Board (JTB)

Composition of JTB

The Joint Tax Board is established under the Income Tax Management Act, 1990 to administer income tax generally in Nigeria. It is to coordinate the various aspects of taxation as between States as well as promoting uniformity in personal taxation. The composition of the Board shall consist of –

- a. The Chairman, who is also the chairman of the Federal Inland Revenue Service
- b. One member from each state of the Federation, being a person experienced in income tax matters as nominated by the Governor;
- c. The Legal Adviser to the Federal Inland Revenue Service Board shall be in attendance; An officer experienced in income tax matters as appointed by the Joint Tax Board shall serve as Secretary to the Board.

Any Seven (7) members or their representatives shall constitute a quorum.

Functions and Powers of JTB

- Exercise of the powers or duties conferred upon it by ITMA, 1990;
- Exercise of the powers or duties that may be conferred on it by any enactment of the Federal Government relating to Companies taxation;
- On request, advisory service to the Federal Government regarding double taxation arrangements;
- On request, provide advice to the Federal government in respect of rates of capital allowances and other taxation matters affecting the whole country and in respect of any proposed amendment to the Act;
- Promoting of uniformity, both in application of the Act and in the incidence of tax on individuals throughout Nigeria;
- Resolving disputes in the determination of residence between a taxpayer and a tax authority; and
- Processing of approval for pension or provident funds schemes.

State Board of Internal Revenue [SBIR]

Composition of SBIR

The administration of the income tax laws in each of the States of the Federation is vested in the State Board of Internal Revenue. The composition of the State Board shall consist of:

1. The Executive head of the State Service as Chairman, who shall be a person experienced in taxation to be appointed by the Governor and subject to the confirmation of the State House of assembly.
2. The Directors and all Heads of departments within the State Service
3. A Director from the State Ministry of Finance;
4. Three other persons, appointed by the Governor on their personal merits, representing each of the three senatorial districts of the State;
5. The Legal Adviser to the State Service; and
6. The Secretary to the State Service, who shall be an Ex-officio member.

Any Five (5) members of the State Board, of whom one shall be the Chairman or a Director in the State Service, shall constitute a quorum. The State Board of internal revenues are to be funded at 5% of their revenue collection.

Functions and Powers of SBIR

1. Ensure the effectiveness and optimum collection of all taxes and penalties due to the government under the relevant tax laws;
2. Doing all such things as may be deemed necessary and expedient for the assessment and collection of the tax;
3. Account for all amount so collected in a manner to be prescribed by the Commissioner;
4. Making recommendations, where applicable, to the Joint Tax board on tax policies, tax reforms, tax legislations, tax treaties and exemption as may be required from time to time;
5. Generally controlling the management of the State Service on matters of policy, subject to the provisions of the law setting up the Service; and
6. Appointing, promoting, transferring and imposing discipline on employees of the State Service.

Inspectors of Taxes

These are government officials, under the control of the State Board of internal revenue, whose job is to make sure that people and companies are paying the right amount of tax. They calculate the tax liability of businesses and individuals, check tax returns and identify tax evasion. There are four categories of tax inspectors, namely-

- (i) Chief Inspector of Taxes;
- (ii) Principal Inspector of Taxes;
- (iii) Senior Inspector of Taxes; and
- (iv) Inspector of Taxes.

Responsibilities include:

1. Receipt and examination of tax returns and other information from taxpayers and other sources.

2. Make and issue statements based on the returns on which tax is payable.
3. Issue best of judgement (BOJ) assessment where no return is received or information therein is suspected to be false. They also issue additional assessment when there are convictions that the original assessment was inadequate.
4. Deal with objections by the tax payer
5. Deal with claims for repayment when tax has been overpaid by the tax payer
6. Overseeing the PAYE system.
7. Representing the State Board at the hearing of appeals.
8. Agreeing settlements in person or via written correspondence with taxpayers or their representatives (accountants and lawyers).

Collectors of Taxes

These are the officials responsible for making sure that the tax payers settle their tax liabilities.

Responsibilities include:

- (i) Service of return of Income Forms.
- (ii) Service of Notice of Assessment.
- (iii) Service of summons, affidavits and other required information.

Joint State Revenue Committee [JSRC]

Composition of JSRC

The Joint State Tax Revenue Committee is established under the Income Tax Management Act, 1990 to administer income tax generally within a State of the Federation. It is to coordinate the various aspects of taxation as between Local councils as well as promoting uniformity in taxation.

The composition of the Board shall consist of: -

1. The Chairman, who is also the chairman of the State Internal Revenue Service;
2. The Chairman of the Local Government Revenue Committee;
3. A representative of the Bureau on Local Government Affairs, not below the rank of a Director
4. A representative of the Revenue Mobilization, allocation and Fiscal Commission, as an observer;

5. The State Sector Commander of the Federal Road Safety Commission, as an observer;
6. The Legal Adviser of the State Internal revenue Service; and
7. The Secretary of the Committee who shall be a staff of the State Internal revenue Service.

Functions and Powers of JSRC

1. Implement decisions of the Joint Tax Board;
2. Advise the Joint Tax Board and the State and Local Governments on revenue matters;
3. Harmonize tax administration in the State;
4. Enlighten members of the public generally on State and Local Government revenue matters; and
5. Carry out such other functions as may be assigned to it by the Joint Tax Board.

Local Government Revenue Committee (LGRC)

Composition of LGRC

The Local Government Revenue Committee is established under the Income Tax Management Act, 1990 to administer income tax generally within a Local Council of the Federation. It is to coordinate the various aspects of taxation as well as promoting uniformity in taxation.

The composition of the Committee shall consist of:

- (i) The Supervisor for Finance as Chairman;
- (ii) Three Local Government Councillors as members; and
- (iii) Two other members, experienced in revenue matters, to be nominated by the Chairman of the Local Government on their personal merits.

Functions and Powers of LGRC

1. Assessment and collection of taxes, fines and rates under its jurisdiction;
2. Account for all amounts so collected in a manner to be prescribed by the Chairman of the Local Government;
3. Day to day administration of the department which forms its operational arm and shall be autonomous of the Local Government Treasury.

Tax Appeal Tribunal

Composition:

These are non-public officers, constituted by the Minister or Commissioner for Finance, charged with the responsibilities of hearing appeals made by tax payers in respect of assessment raised by the Revenue. They are persons appearing to have had experience and shown capacity in the management of a substantial trade or business or the exercise of a profession of Law, Accountancy or Taxation in Nigeria. For an appeal to be heard, the Tax Appeal Tribunal require that:

- (i) Objections must be in writing;
- (ii) The tax payer must state the precise grounds of objection(s); and
- (iii) The objection must be submitted within 30 days of the “notice of refusal to amend” by the Board i.e. from the date stated on the letter of refusal, served by the Board.

Functions and Powers of Tax Appeal Tribunal

1. Hearing appeals from the aggrieved tax payers; and
2. Settling disputes arising from tax issues between the tax payer and the Revenue Authority in ensuring amended assessment as and when same is amended by them.

Objections and Appeals Procedure

1. Where a tax payer receives a notice of assessment, he either agrees or disagrees.
2. Where he agrees with the assessment, the Act requires him to pay within the statutory time limit of sixty (60) days, from the date of receipt of the assessment. Where he disagrees, he is expected to raise a *notice of objection*’ which will only be valid, if it fulfils the following conditions:
 - must have been made in writing;
 - must have been made within thirty (30) days of the receipt of the notice of assessment;
 - must contain the grounds of objection.
2. On the receipt of the valid notice of objection, the relevant tax authority will examine the grounds of objections to determine their validity. Where the grounds are valid, a reviewed tax computation will be made and a revise or amended assessment raised. Tax payment would be based on the revised amendment.

3. Where the relevant tax authority is of the opinion that there is no merit in the objection notice, then a '*notice of refusal to amend*' would be sent to the taxpayer.
4. The taxpayer, if still disagrees with the 'notice of refusal to amend', he should file a 'notice of appeal' to the Body of appeal commissioners, within thirty (30) days of the receipt of 'notice of refusal to amend'. The notice of appeal will only be valid, if it contains:
 - the tax file number of the taxpayer,
 - the relevant year of assessment;
 - the date the 'notice of refusal to amend' was received;
 - the assessable profit for the year of assessment being disputed;
 - the taxable profit being disputed;
 - the tax payable been disputed; and -the ground(s) of appeal.
5. The appeal commissioners will examine the grounds of appeal and may write both the taxpayer and the relevant tax authority to attend the sittings of the appeal. They both have the right to be represented by a legal adviser, staff, auditor or two advisers

15.10 Taxation of Employment

Taxable person:

This refers to any individual or body of individuals (including a family, any corporation sole, trustee or executor) having any income which is chargeable to tax under the provisions of the Personal Income Tax Act.

Total income:

This means, in relation to an individual for a year of assessment his aggregate assessable income for that year after the additions and deductions specified in the Personal income tax Act.

Classification of income

Earned income

In relation to an individual, means income derived by him from a trade, business, profession, vocation or employment carried on or exercised by him and a pension derived by him in respect of a previous employment. It refers to the income derived from one's own labour or through active participation in a business as distinguished from income from dividends or investments.

Unearned income refers to income derived from investments, such as dividends, interests, as distinguished from income derived from personal labour.

Individual incomes chargeable to tax include:

- Salaries and wages.
- Fees and allowances.
- Gratuities and pensions.
- Compensations
- Bonuses, commissions and premiums.
- Benefits-in-kind (BIK).

Basis Period of Assessment

Basis period is the profit-earning (loss-making) period that is attributed to a particular tax year. It is the period that is made up of the profits of a trade, business, profession or vocation of the year preceding the year of assessment. It is the period of business activity to be considered in determining the tax liability of a chargeable person in a particular tax year.

Benefits-In-Kind (BIK)

These are expenses incurred by an employer for the benefit of an employee apart from his salary or allowance. Some BIKs are taxable while some are not. The benefits in kind exempted from tax are;

1. Reasonable removal expenses, including a temporary substance allowance where a change in place of employment necessitates a change in place of residence.
2. Provision of uniforms, overall or protective clothing
3. Provision of food in any canteen for staff generally

Taxable Benefit-in-Kind

1. Where the employer provides assets for employee's benefit. The employee is taxed with 5% of the cost of the asset or the market value if cost is unknown.
2. Where employer provides an accommodation for the employee; the employee is charged with the cost of the premises he enjoyed from the employer accommodation.

3. Where employer rents or hires assets for use by employee; the amount of BIK in the hands of the employee is the annual rent or hire paid
Computation/Determination of Gross Income, Consolidated Relief Allowance (CRA), Chargeable Income)

Consolidated Relief Allowance (CRA) CRA is granted at the higher of ₱200,000 or 1% of gross income plus 20% of gross income.

Gross Emolument means wages, salaries, allowances (including benefits in kind), gratuities, superannuation and any other income derived solely by reason of employment.

Gross Income means “all incomes from whatever source derived, unless excluded by law”. Gross income is not limited to cash received. It includes incomes realized in any form, whether money, property, or services

Going by the foregoing definition, it is obvious that gross income encompasses all income of a taxpayer, whether received in cash, in kind or in any form (excluding income specifically exempted). However, for purpose of CRA computation, Gross income shall be defined as the total income (excluding Franked investment Income (FII)) of a taxpayer i.e. Earned income plus unearned income (excluding FII).

Practice Questions

Multiple Choice Questions

1. Which one of the following is not an advantage of progressive tax?
A. Cheap to collect.
B. Certainty.
C. Inflationary.
D. Convenience.
2. Which one of these taxes is not collectible by the federal government?
A. Petroleum profits tax.
B. Tertiary education tax.
C. Stamp duties on corporate bodies.
D. Slaughter slab fees.
3. Which of the following is not an example of taxes classified by tax base?
A. Personal income tax.
B. Proportional tax.
C. Information technology levy.
D. Tertiary education tax.
4. How many days' notice would a Tax Appeal Tribunal give to an appellant and Federal Inland Revenue Service of the date and place fixed for hearing of the appeal?
A. 28 days.
B. 21 days.
C. 14 days.

- D. 7 days.
5. How many members or their representatives shall constitute a quorum at a meeting of the Joint Tax Board?
A. 7 members.
B. 6 members.
C. 5 members.
D. 4 members.
6. Which one of the following is not a function of the Joint Tax Board (JTB)?
A. Advise the Federal Government, on request, in respect of double taxation arrangement with any other country.
B. Assess, collect, account and enforce payment of taxes as may be due to the government or any of its agencies.
C. Advise the Federal Government, on request, in respect of rates of capital allowances and other taxation matters, having effect throughout Nigeria in respect of any proposed amendment to PITA.
D. Exercise the powers or duties conferred on it by the PITA and other Acts.
7. Within what period is a newly incorporated company expected to register with the FIRS?
A. Eighteen months after incorporation or eight months after the end of its first accounting period.
B. Eighteen months after incorporation or six months after the end of its first accounting period.
C. Eighteen months after incorporation or seven months after the end of its first accounting period.
D. Twenty months after incorporation or six months after the end of its first accounting period.
8. Which of the following is not a procedure for hearing an appeal before the Tax Appeal Tribunal?
A. The Tax Appeal Tribunal gives seven (7) days' notice to the appellant and FIRS of the date and place fixed for hearing of the appeal.
B. A member with vested interest in any matter before the Tax Appeal Tribunal must disclose such interest and abstain from attending any sitting, at which the matter is to be heard.
C. All appeals before the Tax Appeal Tribunal are heard in public.
D. The Tax Appeal Tribunal can only entertain tax cases below N1 million.
9. Which of the following personal income tax is not collectible by the Federal Inland Revenue Service?
A. Income tax of personnel of Armed Forces.
B. Income tax of personnel of the Nigerian Police Force.
C. Income tax of the personnel of the Ministry or Department of Government assigned the responsibilities for Foreign Affairs.
D. Income tax of federal civil servants' resident in all states.
10. What is the basis of capital gains tax?
A. Gains from lotteries and coupons.

B. Gains from disposal of personal residential house.

- C. Gains from sales or disposal of assets.
- D. Gains from sales of stock and shares.

Theoretical Questions

1. Define Taxation and explain six principles of a good tax system
2. Describe four objectives of taxation.
3. Explain the power and functions of Federal Inland Revenue Board
4. Critically analyse and five challenges of the Nigerian Tax Administration system.
5. Describe Value Added Tax and its administration in Nigeria.
6. What is Withholding Tax and its usefulness?

CHAPTER 16

PAYROLL MANAGEMENT AND COMPUTATION

Learning Objectives

After studying this chapter, candidates should be able to:

1. Understand the importance of Payroll Management and its process
2. Compare and Contrast the various types of Payroll Management Systems and determine the best method on a situational factor basis
3. Know the global best practice in the Payroll Management
4. Understand the nature and treatment of each component/item of a payroll and
5. Compute and effectively Manage the Payroll system of candidates or organization

16.1 Definition of Payroll Management

Payroll is an important document that is used by organizations and companies to perform day to day staff management activities. It is a document that contains a list of all the employees of

a company who receive remuneration of work carried out or services offered to that company. It provides a summary of the entire money paid to staff by a company within a specific time.

Payroll management is the administration and management of staff financial reports, such as wages, salaries, deductions, bonuses, and other relevant financial records. It also involves a continuous review and update of the payroll database to ensure that the status quo is always captured with respect to the remuneration of staff.

16.2 Importance of Payroll Management

Maintaining a payroll by a company is extremely important for day-to-day activities and also for adherence to jurisdictional requirements. In most cases, companies maintain a payroll database via payroll application software that is usually semi-automated and easy to use. The importance of payroll, owning, and managing payroll, is highlighted below.

1. Its computers provide databases, which can easily be stored on storage devices and other remote online cloud storage systems, which can be accessed using login credentials.
2. This provides an essential backup of payroll records in the event of a system failure or hardware damage.
3. This also provides a graphical representation of the company's payroll, which is vital for financial assessments. In instances of wage increment, a simple calculation can provide the company with the full impact of such adjustment on the finances of the company. It also allows employees access to the breakdown of their remunerations.
4. It also allows employees access to the breakdown of their remunerations.
5. Many companies spend a significant amount of time managing corporate and staff income taxes.
6. Payroll management is crucial as it not only eases the organization and management of payroll but saves valuable time, which can be used for other critical corporate activities.
7. Payroll database is of high-quality. Staff data is always kept as confidential as possible, which translates to different levels of administrative rights and privileges for access to the payroll database.

16.3 Advantages of Payroll Management

- It contains a company's remuneration strategy, which may include bonuses, leaves, and deductions.
- It provides a detailed payslip, which can be used for various uses. It also provides a detailed breakdown of salary or wage.
- It is used for paying salaries or wages.
- It is used to collate payroll-related inputs.
- It is used to determine actual remuneration.

16.4 Payroll Management Process

The payroll management process is what a company does in the process of administrating and implementing payroll functions. In this process, the business uses software applications to record employee details and manage salaries, track hours, manage to leave, bonuses, and deductions among other functions of payroll management.

The process also includes complying with legal requirements related to employee payments, including income tax. The payroll management process also includes putting in place a mechanism and system to redress employee grievances. The payroll process is integral to companies establishing integrity and financial stability. Where there is poor payroll management, organizations open themselves to potential fraud.

16.5 Methods of Payroll Management

The process of payroll management requires careful and meticulous planning. Continuous review and monitoring of changes to details relating to specific employees concerning payments, deductions, and other financial payments. This payroll management process consists of three distinct phases, which are before, during, and after the payroll management activity.

1. Before payroll processing

Various factors are considered, which include bonuses, leaves, and other benefits. The determination of these factors is based on the approval of the decision-makers of the company. Payroll generated in small companies is affected by fewer factors with more prominent companies, the payrolls usually require software applications

that ease the entire process. In both cases, all data processed must abide by company policy and procedure.

2. During payroll processing

Verified data is used. This stage involves calculations, taxes, bonuses, and deductions. Validation and verification of all amounts are done to ensure accuracy and avoid mistakes.

3. After payroll processing

All deductions are made here. The total funds budgeted on the payroll are disbursed through the relevant payment channels.

Other Methods of Payroll Management

There are three basic payroll methods which are Excel-based, outsourced and payroll management software.

Excel: This is the cheapest option for payroll management. Start-ups and smaller companies mostly use this approach. This method involves developing a payroll management template, which allows for calculations and the use of mathematical formulae on Excel spreadsheets. The downside of this method is that it is challenging to manage and prone to error

Outsourced

This is an option for companies that have the resources. A company contracts a third-party payroll management service provider. For every cycle of payment, the company compiles and sends out an updated payment schedule to the payroll consultant for processing. The payroll consultant is responsible for reviewing and updating all payments and deductions due to each employee. Although this option simplifies the work of the company, however, the need for confidentiality may prevent it from outsourcing its payroll management.

Payroll management software

This provides a simplified option for a company. There are several reliable applications for payroll management to choose from. Such software applications usually provide a template for the input of the employee details and relevant input factors. The size and composition of the company determine the best type of payroll software that is suitable for day-to-day operations.

Other payroll methods

There are different types of payroll methods available to businesses – direct deposits, checks (written or printed) cash, or payroll cards. While businesses can choose from these types of payroll methods, employees get paid on three specific pay rates:

- Hourly wages
- Base salaries
- Commission pays

16.6 Payroll Management System

A payroll management system is a software tool that provides for the automation of payroll management. The software helps a business or organization to manage the salaries, wages, tax deductions, insurance premiums, and other aspects of remuneration of employees. Companies also use payroll management software to track employee time off or accrual of vacation leaves. You can access the software as standalone apps or as part of the HR software package.

Benefits of Payroll Management Software

- Payroll software is useful for compliance purposes i.e staying up to date with state and federal laws.
- Automation helps speed up payroll processing and makes it easy to generate reports e.g. for tax filing purposes. Payroll software will generate 1099-MISCs, 1099, and W2s among others that are very vital for filing taxes.
- Privacy of employee and company financial data, which will likely not be the case when you outsource to third party providers
- Portals can offer employees access to their payroll data and for self-service processing
- Let's look at two of the benefits: taxation reports and a self-service portal for employees.

Preparing tax forms can be a nightmare to your HR. With payroll software, it auto-generates all tax forms for each employee in your organization. A payroll system helps to calculate tax even with different rates and from different states. The system updates automatically when tax rates change keeping your HR department on the frontline. Large companies that have a large

number of employees need a payroll management system that they can access through a **self-service** option.

Human Resource persons are relieved of the duty to inform the employees of their details. Each staff can use the self-service option to check the information they need such as time-off, benefits, and deductions among others. If there is need for any changes to be made on the system, they do so online without necessarily visiting the HR office. The fact that there is a self-service option can result in wrong data entry. Once new data different from the previous pay checks is entered, the system sends an alert to the HR department that can then check and correct the error if necessary. This ensures no discrepancy can go undetected.

Other Payroll Management System

Payroll management system is the process by which employers pay wages to their employees. It's also how they demonstrate their commitment to their workers, fulfil their obligations to government agencies and keep financial records in order. A standard payroll management system is designed to assist all types of organizations in calculating employee wages, insurance, loans, deductions, taxes, and other financial obligations based on their attendance. You can incorporate the company's holiday calendar into it to ensure that these calculations are carried out without error or human involvement. Other activities that payroll software may help you with include personnel information management, leave management, employee bank details management, HR document management, payslip production, and so on. All of these elements may vary depending on the number of people in your firm, the structure of the organization, and the demands of the company.

16.7 Pre-Requisite of a Good Payroll Management

Employee morale – By making sure your employees are paid in a systematic and timely manner, you are reinforcing their faith in your business' financial integrity. This will boost employee morale and motivate them to perform better.

Statutory compliance - This refers to the legal framework your business must adhere to. As an employer, you are required to maintain various payroll and payment records of your employees. Every organisation that hires employees and pays salaries must comply with the

labour laws. By having a payroll process in place, you are automatically complying with the employment and labour laws in Nigeria.

Manage employee information efficiently - You will be able to accurately store and manage all your employee information in one place. There will be no need to use any additional tool for this purpose. Generate reports related to employee attendance, salary structure, etc. - A good payroll system will facilitate this process seamlessly. This can be extremely valuable when you are looking to retrieve information for any queries related to these matters

Startup Friendly - As a new business, you may not have enough budget to allocate to every aspect of your business. Most of the payroll services are free for the initial few employees or charge a minimal fee; making it easy for you to afford setting up a service like this.

Time-Saving - Since everything in a payroll management system is automated, you will be saving a lot of time. You don't have to manually enter the information for every cycle. You set it up once and let the software handle the rest. The only thing you will probably do is new employee registration for every new hire.

Plan for The Future - Most of the payroll management services provide a forecast feature. You can use this to plan staff costs and other relevant expenses. This will help you get a good picture of how much your business should be making in order to accommodate all the expenses and still operate profitably.

Types of Payroll Management System

1. Internally Managed (In-House)

This is most feasible for a business with fewer employees. You manage it yourself, and fewer employees means less space for major discrepancies to creep in. With internally managed systems, one of the employees in your business takes responsibility for payroll. That individual must keep on top of staff changes and be up to date with payroll tax laws for things like accurate pay, tax withholding and filing.

They then use the software to maintain and manage the business payroll.

These systems are:

- Best for smaller businesses
- Designed to make payroll processes straightforward
- Fully compliant with the latest tax legislation
- Simplified for use by non-experts

Pros of In-House Payroll

- Eliminates major discrepancies with small staff
- Can be done in-house, so keeps costs down
- Low security risk by managing data in-house
- Intuitive tools make payroll processes simple

Cons of In-House Payroll

- Not suitable for businesses with more than 10 employees
- Payroll not managed by an expert/professional
- Takes up employees' time

2. Professionally Managed (Bookkeepers and CPAs)

Payroll can be outsourced to a bookkeeper or certified public accountant (CPA). This saves you time and ensures you have real expertise in charge of your payroll, plus it is better suited to growing or larger businesses.

With a professionally managed system, you have someone with expertise in all the services you require. Processing errors will be virtually eliminated, but you remain ultimately responsible for accurate deposit and payment of tax liabilities.

It is you that will be contacted if there are any issues, not the payroll service. You will need to provide the data to be input into the system, but most of the burden is lifted from you, enabling you to focus on your operations with peace of mind.

With a professionally managed payroll system:

- Medium-large businesses can have payroll operations covered
- You have a professional in charge of payroll management
- Your employees can focus more on core business operations
- You get a bespoke system for your needs
- You are still liable if tax authorities have any issues

Pros of Bookkeepers/CPA Payroll

- Suitable for medium-sized businesses
- Expert management of your payroll

- Fully-featured, bespoke system tailored to your needs
- Work is outsourced, enabling your employees to focus on business operations
- There are affordable solutions to choose from

Cons of Bookkeepers/CPA Payroll

- Bookkeepers/CPAs will not carry out transactions, bank deposits and deductions
- Outsourcing to professionals cost money

3. Agency Managed (Payroll Service)

As an alternative outsourcing option, you can hire a payroll services agency to manage your payroll. They will take on all payroll responsibilities for your company. With agency managed payroll services, all your payroll obligations as well as salary deposits and deductions will be handled on your behalf. You will get assurance of absolute accuracy and avoidance of late payments. Agencies provide well-informed experts to give you peace of mind and ensure full compliance, covering administrative tasks and guarantees on their work.

Agency managed payroll services:

- Provide a team of experts to manage your payroll
- Cover all things related to your company payroll
- Are suitable for large businesses with many employees
- Offer guarantees for timely payments and accurate filing

Pros of a Payroll Service

- Suitable for larger organisations
- Cover core payroll processes and other associated tasks
- Guarantee accuracy and punctuality
- Provide peace of mind with compliance

Cons of a Payroll Service

- Expensive option
- Give you less control over your systems

4. Software Managed (Online Payroll)

These are growing in popularity, providing an online portal through which you can manage your payroll with the help of automation tools. You handle the data entry and the software does everything else for you, all based in the cloud. Online payroll gives you access to your payroll details 24/7 via a secure web portal, with no additional

software or equipment to buy. All the tools and features of the software are optimised for your payroll and hosted online, enabling you to track employee hours, vacations and sick days from your laptop.

Online tax filing and reporting, as well as payments and other payroll-related services, are often provided.

Software managed payroll systems:

- Provide tools and resources hosted in the cloud
- Require you to enter data into the system regularly
- Carry out calculations and produce reports with powerful automation
- Include support for if you encounter any issues
- Take much of the complexity out of payroll
- Are available via subscriptions

Pros of Online Payroll

- No need to purchase software or equipment to run it
- Automation features and excellent options for reporting
- Often integrate with HR and accounting systems for a complete solution
- Simple, user-friendly interfaces for ease of use
- Affordable in monthly subscription plans
- Available in packages to suit your needs, with scalable options

16.8 Payroll Management System: Best Practices

Some of the best practices for payroll management in your company are:

Classify your employees for payroll management:

You may have different types of employees working in your company. Some employees may be permanent, some on contract and some on daily wage. You must clearly classify the employees of your company. Wrong classification of employees may result in wrong calculation of tax exemptions and violation of the Labour Standards Act. The best practice is to have a clearly defined policy for payroll calculation of each type of employee. In addition, the *payroll management system* that you use should be capable of handling all kinds of payroll in your company.

Use an Integrated Payroll Management Software:

A payroll management system that integrates various business processes such as: time and attendance system, human resource management system, leave management, tax reporting, and employee exit process is capable of maximum Return On Investment (ROI) as compared to a system that only calculates payroll. A small business Payroll management system that is integrated with other modules can also be used.

Verify Correct Data Transfer to your Payroll Management System from Integrated Applications:

If your payroll management system is integrated with other systems, ensure that all the data connections are transferring data correctly to the payroll management system. If you are processing payroll manually, double-check all paperwork and processes to ensure everything is functioning properly.

Audit your Processes Regularly:

All the processes of your company including manual and automated, must be audited at least once a year. Sometimes even automated systems can cause errors. If errors are not caught in time, they may result in overpaying or underpaying employees. In case of mismanagement of exited employees, you may end up paying full salaries to them instead of holding their salaries and performing their full and final payments calculations. In addition, the promotions or salary hikes may also not be provided in time as promised.

Prevent time Theft using a Payroll Management Software:

Some employees may misuse their working hours. You can stop this by using biometric machines in your company and then integrating the attendance data derived from biometric machines to the payroll system. Another option is to use an integrated attendance system that takes care of breaks taken by employees, in addition to in and out time of employees in the company. This integrated payroll management software will automatically calculate working hours of employees and calculate payroll accordingly.

16.9 Payroll Component and Computation

Employee Information

The first stage in payroll is to gather all relevant information regarding your employee's financial situation. Before an employee may be fully onboarded, they must complete the necessary paperwork required by governing laws and corporate standards. In addition to

attendance data, working hours, and mid-year wage adjustment data, some firms track various other factors. This information must be gathered and digitised for safe preservation.

Payroll policy

To guarantee that the payroll department runs efficiently and that employees are paid accurately, and on time, a business must set payroll policies and processes. As a result, it is critical to sustaining employee morale and financial stability.

The policies' procedures ensure a well-defined approval process, efficient payroll activities, the availability of forms, and proper controls.

A payroll policy explains the payroll process, which includes the administration of an organisation's employees' salaries, timekeeping, payroll schedules, and payment methods. This policy is intended to establish control and inform employees on what to expect on payday.

Basic Salary

The basic pay, which is the base pay that remains constant during an employee's term at the firm, can range from 35% to 65% of the total CTC. A variety of things influences the basic pay. The primary one is the employee's title and position in the hierarchy. Additional responsibility and fixed commission is secondary issues. This sum is completely taxed.

Allowances

An allowance is a monetary advantage the employer provides to the employee and their regular income. These advantages are provided to compensate for any costs incurred to complete the service. Salary allowances are divided into three groups: taxable, non-taxable, and partially taxable allowances.

What Is Payroll Computation?

The formula is as follows: Hourly rate x total hours worked in the pay period = gross pay. To calculate a salaried employee's gross pay, divide their annual salary by the number of pay periods in the year. The formula is as follows: Yearly salary / number of pay periods in year = gross pay.

The calculation of payroll involves the determination of gross pay, followed by the subtraction of deductions and payroll taxes to arrive at net pay. The calculation of payroll is a highly regimented process. This calculation should be followed meticulously, to ensure that there are no mistakes in the amount of net pay issued to employees, or taxes paid to the government. The calculation steps for payroll are described below.

Step 1. Notify Employees

Tell employees to complete their timesheets by the close of business on the last day of the payroll period. Otherwise, pursuing employees to complete their timesheets will delay the payroll.

Step 2. Collect Timesheets

Obtain timesheets from all employees. This information may be located in an on-line timekeeping system.

Step 3. Review and Approve Timesheets

Review all timesheets for completeness, and then forward them to the relevant supervisors for approval. Overtime in particular should be approved, since it is 50% more expensive than regular pay.

Step 4. Enter Hours Worked

Enter this information if the hours worked information is collected manually. Otherwise, it may already be in the system.

Step 5. Enter Wage Rate Changes

Enter all authorized changes into the payroll system for wage rate alterations, withholdings, and deductions. In particular, ensure that all deductions have been entered for adjustments to gross wages for tax purposes, since they impact the amount of payroll taxes paid.

Step 6. Calculate Gross Pay

Multiply wage rates by the number of hours worked to arrive at gross pay.

Step 7. Calculate Net Pay

Deduct all authorized withholdings and pay deductions from gross pay to arrive at net pay.

Step 8. Review

Print a preliminary payroll register and examine the gross pay, deductions, and net pay for each employee, to ensure that it is correct. If it is not correct, revise the prior entries and run another preliminary payroll register.

Step 9. Pay Employees

Cut pay checks and remittance advices. Also print a final payroll register and archive it. Have an authorized person sign the checks. Alternatively, issue electronic payments to employees.

Step 10. Remit Taxes

Forward all applicable payroll taxes to the government by the mandated due date.

Step 11. Distribute Pay

If pay checks were cut, retain them in the company safe and distribute them on pay day. An extra control is to require a proof of identification before handing a check to an employee.

16.10 Payroll Applications

Most businesses across the globe have integrated payroll management software, streamlining payroll processes, for compliance, and improving tax filing as well as securing the payroll system.

Payroll applications or **Payroll management solutions** allow many small and medium-sized companies to handle their payroll management needs without having to outsource to a third-party. Here are the leading payroll management solutions vendors in the US.

- ADP

- Gusto
- Paychex
- Sage 50cloud
- Paycor
- EPAY Systems
- OnPay
- Patriot Software
- Xero
- Toast Payroll
- Zoho Payroll

What to consider when choosing payroll management software

Ideally, every business should have a payroll management system. However, each business needs will determine the kind of payroll software that best serves it. The following are guiding principles when you want to choose payroll management software.

Reputation and trustworthiness

Get to know your preferred service providers from other companies using their payroll services. Reviews about them also provide quality information. Request if the software providers can also offer a free demo on how to use their system to see if it's ideal for your business needs.

Security

A company's payroll management system contains very sensitive information about employees and the company. This data should be protected and handled by trustworthy persons only.

Your business size

Small and mid-sized businesses may need a payroll system that performs basic functions as compared to large companies that need a detailed one.

Software reports and back up

As a company, you need to have access to the payroll reports when need be. The system should be able to provide manual update options in case you need to correct some errors

Compatibility

You need to purchase software that can work together with the other systems in your business. The software should also be flexible enough to accommodate growth changes in your business. It should be easy to integrate into the other financial software you might be using.

Practice Questions

Multiple Choice Questions

1. Which department should have the sole ability to provide information to the AIS about hiring, terminations, and pay rate changes?
 - A. payroll
 - B. timekeeping
 - C. production
 - D. HRM**
2. Which of the following is not one of the major sources of input to the payroll system?
 - A. payroll rate changes
 - B. time and attendance data
 - C. checks to insurance and benefits providers**
 - D. withholdings and deduction requests from employees
3. In the payroll system, cheques are issued to EXCEPT _____
 - A. employees and to banks participating in direct deposit.
 - B. a company payroll bank account.
 - C. government agencies.
 - D. competitors of company.**
4. For recording time spent on specific work projects, manufacturing companies usually use _____
 - A. job time ticket.
 - B. time card.**
 - C. time clock.
 - D. labour time card.
5. What is not a desired result of an employee bonus/incentive system?
 - A. Employees may recommend unnecessary services to customers in order to exceed set sales quotas and earn a bonus.
 - B. Employees may look for ways to improve service.

- C. Employees may analyze their work environment and find ways to cut costs.
 D. Employees may work harder and may be more motivated to exceed target goals to earn a bonus.
6. These are used to transmit time and attendance data directly to the payroll processing system EXCEPT.....
 A. Badge readers
 B. Electronic time clocks
 C. Magnetic cards
 D. Card readers
7. Payroll deductions fall into the broad categories of _____ and _____.
 A. payroll tax withholdings; voluntary deductions
 B. unemployment; social security taxes
 C. unemployment taxes; income taxes
D. voluntary deductions; income taxes
8. Which of the following deductions is not classified as a voluntary deduction?
 A. pension plan contributions
 B. social security withholdings
 C. insurance premiums
D. deductions for a charity organization
9. All of the following are the reason for separate payroll account used to clear payroll checks EXCEPT.....
 A. for internal control purposes to help limit any exposure to loss by the company
 B. to make bank reconciliation easier
 C. banks don't like to commingle payroll and expense checks
D. banks do like to commingle payroll and expense checks
10. One good way to eliminate paper pay checks is to
 A. pay in cash only.
 B. pay with money orders.
 C. use direct deposit.
D. use Electronic Funds Transfer.

Theoretical Questions

1. a. Define Payroll Management
- b. Explain any three methods of Payroll Management
2. Describe in details the stages in Payroll Management Process
3. Explain any for importance of Payroll Management System
4. Discuss any six pre-requisite of a good payroll management
5. Define Payroll Computation and itemize and three type.

CHAPTER 17

MANAGEMENT OF FINANCIAL RISK

Learning Objectives

After studying this chapter, candidates should be able to:

1. Understand the meaning, nature, and scope of Financial Risks as it applies to HR functions.
2. Analyse the implications of each step of the Risk Management Process
3. Juxtapose the different Risk Strategies and the tools adopted by each method.
4. Evaluate the various methods used in the quantification of effects of Financial Risks and
5. Understand the Various Risk Mitigants.

17.1 Introduction

The concept of Risk, Nature, Need and scope of risk. Source, Measurement, identification and evaluation of Risk. Types of risk– Product market risk and capital market risk. Possible Risk events, Risk Indicators, Risk Management Process–pre-requisites and fundamentals. Misconceptions of Risk. An integrated approach to Corporate Risk Management. Risk management approaches and methods. A comprehensive view of Risk in Financial Institutions. Risk reporting process–internal and external.

Although financial risk has increased significantly in recent years, risk and risk management are not contemporary issues. The result of increasingly global markets is that risk may originate with events thousands of miles away that have nothing to do with the domestic market. Information is available instantaneously, which means that change, and subsequent market reactions, occur very quickly. The economic climate and markets can be affected very quickly by changes in exchange rates, interest rates, and commodity prices. Counter- parties can rapidly become problematic. As a result, it is important to ensure financial risks are identified and

17.2 Definition of Financial Risk

Financial risk management is a process to deal with the uncertainties resulting from financial markets. It involves assessing the financial risks facing an organization and developing management strategies consistent with internal priorities and policies. Addressing financial risks proactively may provide an organization with a competitive advantage. It also ensures that

management, operational staff, stakeholders, and the board of directors agree on key issues of risk.

Managing financial risk necessitates making organizational decisions about risks that are acceptable versus those that are not. The passive strategy of taking no action is the acceptance of all risks by default. Financial Risk Management Risk is defined by Doherty (31) as "the lack of predictability of outcomes." It covers both pleasant surprises and adverse business outcomes. Since prediction is facilitated by the availability of information.

17.3 Scope of Management of Financial Risks

Financial risk managers usually work in operational risk, market risk, and credit risk and are therefore hired by all the top banks, investment firms, and other big companies. Hence, after getting qualified for FRM, you can expect endless job options, higher compensation, personal fulfilment as well as respect.

If taking on greater challenges and handling risks interests, then this blog is for you as here we'll be discussing in detail the scope and career opportunities of risk management. So, stick with the blog, and by the end, you'll surely get a fair idea of the future scope of this field and the steps you need to take in order to build a successful career as a finance manager. Let's begin our discussion with the skills required for one to possess in order to enter this field-

17.4 Types of Financial Risk

Systematic risk: Systematic risk is risk within the entire system. This is the kind of risk that applies to an entire market, or market segment. All investments are affected by this risk, for example risk of a government collapse, risk of war or inflation, or risk such as that of the 2008 credit crisis. It is virtually impossible to protect your portfolio against this risk. It cannot be completely diversified away. It is also known as un-diversifiable risk or market risk.

Unsystematic Risk: Unsystematic risk is also known as residual risk, specific risk or diversifiable risk. It is unique to a company or a particular industry. For example, strikes, lawsuits and such events that are specific to a company, and can to an extent be diversified away by other investments in your portfolio are unsystematic risk.

Within these two types, there are certain specific types of risk, which every investor must know.

1. **Credit Risk (also known as Default Risk):** Credit risk is just the risk that the person you have given credit to, i.e. the company or individual, will be unable to pay you interest, or pay back your principal, on its debt obligations.
2. **Country Risk:** When a country cannot keep to its debt obligations and it defaults, all of its stocks, mutual funds, bonds and other financial investment instruments are affected, as are the countries.
3. **Political Risk:** This is also higher in emerging economies. It is the risk that a country's government will suddenly change its policies. For example, today with the continuing raging debate on FDI in retail, India's policies will not be looking very attractive to foreign investors, and stock prices are negatively affected.
4. **Reinvestment Risk** This is the risk that you lock into a high yielding fixed deposit or corporate deposit at the highest available rate (currently above 9.50%), and when your interest payments come in, there is no equivalent high interest rate investment avenue available for you to reinvest these interest proceeds (for example if your interest is paid out after 1 year and the prevailing interest rate is 8% at that time). Currently as we are at an interest rate peak, it would be advisable to lock in for a longer tenor (provided your financial goal time horizon permits) to avoid facing reinvestment risk.
5. **Interest Rate Risk:** A golden rule in debt investing is this: Interest rates go up, prices of bonds go down and vice versa. So, for example in our situation today, we appear to be at an interest rate peak. This means that since interest rates are going to go down from here, prices of bonds are going to go up. So, if you were to invest in debt funds now, you would be buying at a low, and can sit back and watch as your investments start to give gains as interest rates fall.
6. **Foreign Exchange Risk:** Forex risk applies to any financial instruments that are denoted in a currency other than your own. For example, if a UK firm has invested in Nigeria, and the Nigerian investment does well in Naira terms, the UK firm might still lose money because the Naira has depreciated against the Pound, so when the firm decides to pull out its investment on maturity, it gets fewer pounds on redemption. With the recent very sharp fall in the rupee, the forex risk of our country as an investment destination has greatly increased.
7. **Inflationary Risk:** Inflationary risk, or simply, inflation risk, is when the real return on your investment is reduced due to inflation eroding the purchasing power of your

funds by the time they mature. For example, if you were to invest in a fixed deposit today and you were to earn a 10% interest on it in 1 year's time, then if inflation has been 8% in that year, your real rate of return comes down to 2%, keeping purchasing power in mind.

8. **Market Risk:** This is the risk that the value of your investment will fall due to market risk factors, which include equity risk (risk of stock market prices or volatility changing), interest rate risk (risk of interest rate fluctuations), currency risk (risk of currency fluctuations) and commodity risk (risk of fluctuations in commodity prices). There are other types of risk too, such as legislative risk, global risk, timing risk and more, but for the scope of this article, the ones explained above are the main ones you need to keep in mind, both on a macro (country) and a micro (individual investments) level.

How Does Financial Risk Arise?

Financial risk arises through countless transactions of a financial nature, including sales and purchases, investments and loans, and various other business activities. It can arise as a result of legal transactions, new projects, mergers and acquisitions, debt financing, the energy component of costs, or through the activities of management, stakeholders, competitors, foreign governments, or weather. When financial prices change dramatically, it can increase costs, reduce revenues, or otherwise adversely impact the profitability of an organization. Financial fluctuations may make it more difficult to plan and budget, price goods and services, and allocate capital.

Risk management activities normally involve three basic steps:

1. Exhaustive identification and classification of the risks that can impact business outcomes;
2. Measurement of the risk associated with a set of events that affect the value of the firm, in terms of the likelihood of their occurrence and magnitude of expected losses;
3. Timely formulation of the actions required to bring business risks within acceptable bounds.

17.5 Risk Management Framework

The Risk Management Framework is a template and guideline used by companies to identify, eliminate and minimize risks. It was originally developed by the National Institute of Standards and Technology to help protect the information systems of the United States government. All companies face risk; without risk, rewards are less likely. The flip side of this is that too much risk can lead to business failure. Risk management allows a balance to be struck between taking risks and reducing them.

Effective risk management can add value to any organization. In particular, companies operating in the investment industry rely heavily on risk management as the foundation that allows them to withstand market crashes.

An effective risk management framework seeks to protect an organization's capital base and earnings without hindering growth. Furthermore, investors are more willing to invest in companies with good risk management practices. This generally results in lower borrowing costs, easier access to capital for the firm, and improved long-term performance.

The Five Components of Risk Management Framework

There are at least five crucial components that must be considered when creating a risk management framework. They include risk identification; risk measurement and assessment; risk mitigation; risk reporting and monitoring; and risk governance.

1. Risk Identification

The first step in identifying the risks a company faces is to define the risk universe. The risk universe is simply a list of all possible risks. Examples include IT risk, operational risk, regulatory risk, legal risk, political risk, strategic risk, and credit risk.

2. Risk Measurement and Assessment

Risk measurement provides information on the quantum of either a specific risk exposure or an aggregate risk exposure and the probability of a loss occurring due to those exposures. When measuring specific risk exposure, it is important to consider the effect of that risk on the overall risk profile of the organization.

3. Risk Mitigation

Having categorized and measured its risks, a company can then decide on which risks to eliminate or minimize, and how many of its core risks to retain. Risk mitigation can be achieved through an outright sale of assets or liabilities, buying insurance, hedging with derivatives, or diversification.

4. **Risk Reporting and Monitoring**

It is important to report regularly on specific and aggregate risk measures in order to ensure that risk levels remain at an optimal level. Financial institutions that trade daily will produce daily risk reports. Other institutions may require less frequent reporting. Risk reports must be sent to risk personnel who have the authority to adjust (or instruct others to adjust) risk exposures.

5. **Risk Governance**

Risk governance is the process that ensures all company employees perform their duties in accordance with the risk management framework. Risk governance involves defining the roles of all employees, segregating duties, and assigning authority to individuals, committees, and the board for approval of core risks, risk limits, exceptions to limits, and risk reports, and also for general oversight.

17.6 **The Risk Management and Cycle Process**

An Approach to Risk Management Although several alternative approaches to risk management exist, most businesses use the following process:

- Identify the risks faced by the business. Here, the risk manager identifies the potential risks faced by his firm. This step is neither glamorous nor exciting, but it is critical to the risk management function. Generally, the risk management literature and data from previous incidents, surveys, and annual reviews are used for this purpose.
- Estimate the potential impact of each risk. Some risks are so small that they are immaterial, whereas others are so severe that they have the potential to doom the business. Furthermore, some risks are extremely remote, while others may occur with relatively high frequency. It is useful to segregate risks by potential frequency and severity and then focus on those that have both high frequency and high severity. A frequency/severity matrix may be used for this purpose.
- Decide how each relevant risk should be handled. In most situations, risk exposure can be reduced through one of the following techniques:

1. Transfer the risk. It is often advantageous to use insurance to transfer the risk to another party. However, the fact that a risk is insurable does not necessarily mean that it should be covered. In some instances, it might be better for the company to self-insure, which means bearing the risk directly rather than paying another party to bear it.
2. Transfer the function. Sometimes it is best to transfer the entire risk producing function to another party and hence eliminate the risk. For example, suppose a hospital is concerned about potential liabilities arising from its in-house disposal of medical wastes. One way to eliminate this risk would be to contract with another company to do the disposal, thereby passing the risk to another party.
3. Purchase derivative contracts. As we will discuss in more detail in later sections, businesses can use derivatives to hedge some types of risk. For companies using commodities as inputs, commodity derivatives can be used to reduce input risks. For example, a surgical equipment manufacturer may use metal futures to hedge against increases in raw material prices. Similarly, financial derivatives can be used to reduce risks that arise from changes in interest rates.
4. Reduce the probability of occurrence. The total losses expected to arise from any risk are a function of both the expected frequency of occurrence and each expected dollar loss. In some instances, it is possible to reduce the probability that an adverse event will occur. For example, the probability that a fire will occur can be reduced by instituting a fire prevention program, replacing old electrical wiring, and using fire-resistant materials in areas where the chance of fire is greatest.
5. Reduce the magnitude of the loss. Continuing with the fire risk example, the dollar cost associated with a fire can be reduced by such actions as installing sprinkler systems, designing facilities with self-contained fire zones, and locating facilities close to a fire station.
6. Avoid the activity. A business might discontinue a product or service line because the risks outweigh the rewards. For example, a hospital might decline an offer to participate in a clinical trial for a new medical device because the liability risk is too great.

17.7 Risk Strategies and Tools

A strategy for risk management is a dedicated plan which details how organisations are going deal with risk, both pre-emptively and as incidents occur. It provides a detailed outlook for stakeholders across the business so they can make informed decisions. Read on for a more detailed definition where we break down the four common approaches to building a management strategy for risk and how to choose which one is suitable for your needs.

Having an appropriate risk management strategy is critical to dealing with the many types of risk that your organisation could face. But what is a risk management strategy? And what risk management strategies can you use?

How to approach building a risk management strategy

A risk management strategy is a key part of the risk management lifecycle. After identifying risks and assessing the likelihood of them happening, as well as the impact they could have, you will need to decide how to treat them. The approach you decide to take is your risk management strategy. This is also sometimes referred to as risk treatment.

- There are four main risk management strategies, or risk treatment options:
- Risk acceptance
- Risk transference
- Risk avoidance
- Risk reduction

Choosing the right one will mean the difference between managing each potential risk effectively or facing serious consequences that could damage your business. Let's take a closer look at what these four approaches involve and some examples of when you could use them.

17.8 Essential tools of risk management?

Risk identification and assessment should be part of the planning and development of all department and unit programs or activities. To assess the risks posed by a program or activity, take the following steps:

1. Identify the tasks associated with the program or activity. For example, the tasks associated with conducting a lab experiment might include traveling to an off-

site location, preparing the experiment, conducting the experiment, cleaning up the experiment and disposing any waste.

2. Identify the hazards associated with each task. A thorough identification of the tasks involved and the hazards they present is very important. Risks that aren't identified cannot be managed! For example, hazards related to preparing the experiment might include improper set up and lack of appropriate equipment.
3. Evaluate and select risk management techniques. The goal is to conduct the program or activity in such a way as to reduce the likelihood that something will go wrong and/or reduce the severity of any losses if something does go wrong. For example, the hazards related to preparing the experiment might be addressed through training and supervision, creating several different experiment stations so that not all of the students are working at the same station, and bringing extra equipment.
4. Assess the risks associated with the program or activity with the selected risk controls or transfers in place.
5. Determine whether to modify or proceed with the program or activity based on the risk assessment.
6. Implement the selected risk management techniques and monitor the results. Designating who will implement the selected risk management measures and setting a timetable for completion of those tasks is very important

There are five basic techniques of risk management:

- i. Avoidance
- ii. Retention
- iii. Spreading
- iv. Loss Prevention and Reduction
- v. Transfer (through Insurance and Contracts)

Avoidance:

Many times, it is not possible to completely avoid risk but the possibility should not be overlooked. For example, at the height of a thunderstorm, Physical plant may not release

vehicles for travel until the weather begins to clear, thus avoiding the risk of auto accidents during severe weather. Some buildings on campus have had repeated water problems in some areas. By not allowing storage of records or supplies in those areas, some water damage claims may be avoided.

Retention:

At times, based on the likely frequency and severity of the risks presented, retaining the risk or a portion of the risk may be cost-effective even though other methods of handling the risk are available. For example, the University retains the risk of loss to fences, signs, gates and light poles because of the difficulty of enumerating and evaluating all of these types of structures. When losses occur, the cost of repairs is absorbed by the campus maintenance budget, except for those situations involving the negligence of a third party. Although insurance is available, the University retains the risk of loss to most University personal property.

Spreading:

It is possible to spread the risk of loss to property and persons. Duplication of records and documents and then storing the duplicate copies in a different location is an example of spreading risk. A small fire in a single room can destroy the entire records of a department's operations. Placing people in a large number of buildings instead of a single facility will help spread the risk of potential loss of life or injury.

Loss prevention and reduction:

When risk cannot be avoided, the effect of loss can often be minimized in terms of frequency and severity. For example, Risk Management encourages the use of security devices on certain audio-visual equipment to reduce the risk of theft. The University requires the purchase of health insurance by students who are studying abroad, so that they might avoid the risk of financial difficulty, should they incur medical expenses in another country.

Transfer:

In some cases, risk can be transferred to others, usually by contract. When outside organizations use University facilities for public events, they must provide evidence of

insurance and name the University as an additional insured under their policy, thereby transferring the risk of the event from the University to the facility user. The purchase of insurance is also referred to as a risk transfer since the policy actually shifts the financial risk of loss, contractually, from the insured entity to the insurance company. Insurance should be the last option and used only after all other techniques have been evaluated.

Contracts

Often vendors and service providers will attempt through a contract to release themselves from all liability for their actions relating to the contract. These are often referred to as "hold harmless or indemnification" clauses.

Quantifying Financial Risk

This method does not work for all cyberattacks. Quantifiable risks can be expressed in monetary value (say, lost profits), while non-quantifiable or qualitative risks are more anecdotal. A quantitative risk assessment (QRA) can assist you in figuring out what risks your business faces and how to measure them. While risk quantification originated in the financial sector, it is becoming increasingly common in cybersecurity. Much as a financial institution will take risks to gain profit, cyber threats frequently rise during periods of growth and expansion for a company. Risk quantification can be a beneficial strategy for many companies. Knowing the pros, cons, and best practices will help you determine whether it's a viable option for your organization.

Why Is Quantifying Cyber Risk Important?

Quantifying risk can be a valuable tactic for many organizations. Having standard metrics at your fingertips is a great way to explain your risk landscape to board members and other stakeholders. As your firm grows and expands, this information can be helpful for financial planning, mergers, and questions about cybersecurity investment. In addition, having a "single language" to communicate your company's risk mitigation activities to all employees is always a good idea. Quantifiable data also allows you to chart your progress over time. With this data, you'll have definitive proof of whether your risk management efforts are sufficient and your cost estimates are correct. Data doesn't lie; it will be valuable for creating your risk register and developing a successful risk management program at your company.

17.9 Tools and Technique to Mitigate Risk

- Evaluate business operations for efficiency.
- Nurture your talent – and outsource where it makes sense.
- Create a strong foundation for your HR practices.
- Use metrics for every decision.
- Be prepared to cover a loss.

Practice Questions

Multiple Choice Questions

1. The type of risk in which payments are interrupted by the intervention of foreign governments is considered as _____

- A. channel risk
 - B. globalization risk**
 - C. state risk
 - D. country risk
2. The risk arises from trading of assets because of change in asset prices and exchange rates is classified as
- A. asset risk
 - B. trade risk
 - C. market risk
 - D. exchange risk**
3. The risk faced by financial institutions in which advancement of technology does not produce savings in cost is classified as
- A. savings risk
 - B. advance risk
 - C. cost risk**
 - D. technology risk
4. The risk which arises all the activities from contingent liabilities and assets is considered as
- A. off balance sheet risk
 - B. income statement risk
 - C. balance of trade risk**
 - D. balance of payment risk
5. When maturities of liabilities and assets are mismatched and risk incurred by financial intermediaries then this risk is classified as
- A. interest rate risk
 - B. channel rate risk**
 - C. economic risk
 - D. issuance risk
6. -----is the process of combining together various investment assets to obtain optimum returns with minimum risk.
- A. portfolio construction**
 - B. bilateral construction
 - C. Fix balance construction
 - D. Non construction
7. Buying insurance to cover business risks is an example of managing business risk.
- A. holding
 - B. transfer**
 - C. rescue
 - D. redressal
8. The portfolio theory articulates diversification to reduces risk.
- A. market
 - B. financial**

- C. unsystematic
 - D. business
9. For an ongoing maintenance of regulatory capital, which of the following risk were cover based on the minimum capital requirement.
- A. credit risk
 - B. financial risk
 - C. reputational risk
 - D. leverage risk**
10. One of the following is not a basic techniques of risk management:
- A. Avoidance
 - B. Retention
 - C. Spreading
 - D. Evasion**

Theoretical Questions

1. a. Define Financial Risk

B Explain the types of Financial Risk known to you

2. Describe any six forms of Risk apart from Financial Risk

3. Define Risk Management Framework and explain any five components of Risk Management Framework
4. Discuss Risk Management Framework Process Cycle.
5. Explain various Risk Strategies and tools.

CHAPTER 18

FINANCIAL PLANNING AND REENGINEERING FOR EMPLOYEE ENGAGEMENT

Learning Objectives

After studying this chapter, candidates should be able to:

1. Understand the meaning, nature and scope of Financial Planning and Reengineering
2. Justify the need for Financial Planning and Reengineering
3. Know the Process and steps involved in Financial Planning and Reengineering
4. Evaluate the Pros and Cons of each of the Sustainable Growth Models and
5. Design a Sustainable Financial Plan for the HR Unit of candidates and organization.

18.1 Introduction

Introduction to Financial Planning provides an overview of the field of financial planning and the planning process, including ethical considerations and related issues. Additional topics include personal financial statements, budgeting, emergency fund planning, credit and debt management, buying vs. leasing, regulation of financial institutions, educational funding, financial planning for special circumstances such as divorce or disability, economic concepts such as supply and demand, and monetary policies. It also includes time value of money calculations, characteristics of entities such as limited liability partnerships, consequences of property titling such as JTWRROS, business law, probability analysis, and monetary settlement planning.

18.2 Definition of Financial Planning and Reengineering

Financial Planning: Financial Planning is the process of estimating the capital required and determining its competition. It is the process of framing financial policies in relation to procurement, investment and administration of funds of an enterprise.

Financial Re-Engineering: Financial re-engineering is the use of mathematical techniques to solve financial problems. Financial engineering uses tools and knowledge from the fields of computer science, statistics, economics, and applied mathematics to address current financial issues as well as to devise new and innovative financial products.

Financial engineering is sometimes referred to as quantitative analysis and is used by regular commercial banks, investment banks, insurance agencies, and hedge funds

18.3 Scope of Financial Planning and Re-Engineering

The scope of financial management planning is a vital process that helps individuals and businesses make informed decisions about their money. It involves assessing income, expenses, assets, and liabilities to create a comprehensive picture of an individual or business's financial situation. Financial engineers work with insurance companies, asset management firms, hedge funds, and banks. Within these companies, financial engineers work in proprietary trading, risk management, portfolio management, derivatives and options pricing, structured products, and corporate finance departments

18.4 Justification of Financial Planning And Re-Engineering

Financial Planning is the procedure of confining company's targets, policies, techniques, projects and budget plans with respect to the financial activities lasting for a longer duration. This guarantees viable and satisfactory financial investment policies. The importance is as follows-

- Guarantees sufficient funds.
- Planning helps in guaranteeing a harmony between outgoing and incoming of assets with the goal that stability is kept up.
- Guarantees providers of funds to effortlessly put resources into organizations which provokes financial planning.
- Financial Planning supports development and expansion programmes which support in the long-run sustenance of the organization.
- Diminishes vulnerabilities with respect to changing business sector patterns which can be confronted effortlessly through enough funds.
- Financial Planning helps in diminishing the vulnerabilities which can be a deterrent to the development of the organization. This aids in guaranteeing security and benefits of the organization.
- Accurately monitor the money coming in and going out with the accessibility of banking apps and other financially focused digital platforms, it is easier than ever to keep a lookout for an organization's profit and deficit margins. This allows owners to see what and what is not working at the time to create a chance to pivot. For example, say that you are a restaurant owner and your food services have to be reduced because of a state mandate on dine-in services. By monitoring income

levels, you can see that your business may have a better chance of survival if you adapt by offering delivery and carry-out options to consumers

- Utilize financial planning to lean in on what is important. By figuring out what works in these unforeseen circumstances, a business owner will have found the key to survival in an age of restrictions and no direct contact with customers with the rise of online businesses and traditional brick-and-mortar businesses transitioning into digital operations, entrepreneurs still have a way of reaching and doing business with customers
- Utilize financial planning tools such as a compass. When navigating an unfamiliar situation, such as a once a lifetime pandemic, one needs direction in how to handle such a complex problem. Financial planning especially for CFOs and even for some serious small-to-midsize business owners to stay above water and eventually overcome the unstable state of the economy.
- Financial plans help to establish a criterion of what is good and what is bad

These benefits of financial planning are not just used to help business owners navigate the economy, it also assists entrepreneurs in establishing a level of performance to be measured based on sales, growth of the brand, and quality of service. If a business can remain profitable, gain more customers, and have consistent quality of service and products then that business should be able to survive and thrive in a pandemic.

- More profits, more peace. As stated earlier, having peace of mind will be had when a path to success is made. Accomplishing goals and having a numerical value as to what is successful for your business lead to more positive results in a business' profits and a business owner's mental and physical health. It is understated how the stress of being an entrepreneur can take a toll on the mind and body and it is especially true in today's economic environment.
- Less loss. Creating a financial goal requires research, planning, and effortless execution. When running a business in normal circumstances it is not very strategic to just wing it and hope that everything falls into place for your benefit. This is especially true when running a business during an economic depression. There is not much room for error when your business is already operating on a tightrope and one simple mistake can send a company over the edge of bankruptcy.

18.5 Limitations of Financial Planning

1. **Ever Changing Environment:** Financial planning is not a regular practice, as it is expensive and consumes time. But, the environment around the businesses are regularly changing. Changing the financial plan with a change in business environment is not possible. There may be some changes in government rules and regulations, supply chain ecosystem, customer changes and preferences etc. which may affect the plan adversely. Therefore, in such a changing environment, financial planning becomes less relevant.
2. **Plan Rigidity:** Financial planning doesn't change with the changing environment. This also means that the plan remains rigid once it is made. There is inflexibility and procedural rigidity when some changes need to be done. This is another limitation of financial planning.
3. **Future is Uncertain:** Any plan we make is for future events. As we all know, the nature of the future is uncertain and no one can predict the future. Due to this, all the financial plans we make are limited and unexpected. Such uncertainty decreases the reliability of financial planning.
4. **Financial Planning is Expensive:** A proper financial planning requires heavy investment of time and resources. Financial planning requires assessment of high-quality data from reliable sources. Managing sources and extracting information from those sources requires proper research, which needs time and investment. Also, quality financial planning and proper forecasting can only be done by an expert and analysts. Due to this reason, not all can make an effective financial plan.
5. **Availability of data:** The quality of financial planning depends on the availability of the data. This means, financial planning is heavily dependent on the data-factor. In a financial plan, we make future financial projections based on our past financial actions. If we do not have proper data, the credibility of the financial plans decreases. Any discrepancies in the data directly affect the quality of the financial plan.

18.6 Process of Financial Planning and Financial Re-Engineering

- Preparation of sales conjecture.
- Decide the number of funds – fixed and working capital.

- Conclude the expected benefits and profile to decide the number of funds that can be provided through internal sources.
- This causes us to evaluate the requirement from external sources.
- Recognize the conceivable sources and set up the money spending plans consolidating these variables.

18.7 Financial Forecasting and Modelling

The planning, budgeting, and operations management processes for businesses all depend on financial forecasting. Business leaders, investors and creditors review these forecasts to assess projected revenues and expenses so they can estimate a company's cash flow throughout the accounting period. A financial forecast considers trends in external and internal historical data and projects those trends in order to provide decision-makers with information about how the financial performance of the company is likely to be at some point in the future.

A company's key stakeholders rely on financial forecasts to make decisions around purchasing, hiring and capital expenditures. Managers need financial forecasts to create budgets.

In most cases, companies issue financial forecasts for the upcoming quarter or year. Often, forecasts will cover multiple reporting periods. Companies sometimes issue revised forecasts during a reporting period if they determine sales are trending in a different direction due to unforeseen factors.

Why Is Forecasting Important?

Forecasting is an important step at the outset of each accounting period because it establishes how the business will maintain the cash flow needed to cover its financial liabilities. It also provides data that leaders rely on when creating budgets. Likewise, financial forecasts weigh heavily in financial decisions about a major capital expense, hiring or other substantial investments.

A business might include the predictions of its forecasts on pro forma financial statements, which are like standard financial statements, except they show results for the past and future based on hypothetical conditions. Pro forma statements are often given to investors or creditors,

who will take them into account as they decide whether to give the company additional funding. Financial forecasts are also critical for anyone creating a new business plan.

What Are the Methods of Financial Forecasting?

Finance teams create forecasts by gathering any available data that could improve their projections, including sales, labour expenses, cost of materials and more. Much of that information comes from prior reporting periods, but finance employees also consider internal and external information that could have an impact on expenses or revenues. Depending on the nature of the business, external data could include economic or industry reports and other variable factors, such as extreme weather events and geopolitical influences. Examining factors that could surface in the future is also important in accurately projecting revenues and expenses.

The finance department has historically created simple forecasts in excel spreadsheets, and many still do. But now that employees have access to more data and tools than ever before, many companies are using Enterprise Resource Planning (ERP) modules for forecasting or dedicated software that integrates forecasting, budgeting and modelling.

There are four different financial forecasting methods:

1. **Straight-line Method:** Considered the simplest approach to forecasting, planners use historical figures and trends to estimate revenue growth. Financial forecasts using this method typically have defined beginning and end dates. Financial analysts can use spreadsheets to create these forecasts, though a tool designed for forecasting makes it easier to respond in a rapidly changing market.
2. **Moving Average:** Moving averages use repeated forecasts to develop estimates based on past performance and the patterns within. The most common moving average models are for three months and five months out.
3. **Simple Linear Regression/Multiple Linear Regression:** This is a method of analysing the relationship between a dependent and independent variable. Using the simple linear regression method, if the trend line for sales (x-axis) and profits (y-

axis) rises, then all is well for the company and margins are strong. If the trend line falls because sales are up but profits are down, something is wrong; perhaps there are rising supply costs or narrow margins.

4. **Time Series:** A time series approach forecasts short-term future performance using data from specified time periods, such as the last few months. An energy business would use it to estimate oil prices over the next two months, while a distributor might use it to forecast earnings for the following month based on sales figures and monthly growth over the previous three months.

What Is Financial Model?

While forecasting provides the base estimates of a company's performance during a given accounting period, model allows analysts to use those forecasts to assess how various potential scenarios might impact near- and long-term performance. Financial model tools let analysts manipulate their forecasts as much as they choose to assess the risk of whatever decisions or investments they are considering.

Financial forecasts are based on income statements, balance sheets and cash flow statements. The finance department can link these three reports to create what is known as a three-statement model, any change to the model affects the three statements. Other popular models include the discounted cash flow (DCF) model, merger and acquisition model, consolidation model, budget model, forecasting model and pricing model.

Why is Financial Model Important?

A finance team might build models as they create or revise their financial forecasts, which explains the frequent confusion between the two functions. But financial models serve other purposes, as well as to analyse both current operations and for long-term forecasting. Corporate development teams often use models when considering a potential acquisition, a divestiture or how to allocate capital to better understand how this might impact revenues and expenses. They may also use it to decide if and where to open or close facilities, outsource certain operations or add/reduce headcount. Models can also help determine the impact of raising or decreasing prices for various products or services.

During the COVID-19 pandemic in 2020, many planners had to create new financial models to adjust their short-term forecasts based on the sudden and dramatic economic downturn. Integrated budgeting and planning tools helped many companies adapt quickly and mitigate the impact of COVID-19. It also helped them see the effects of various possible outcomes related to the pandemic. Now that these tools have become more powerful and easier to use, modelling has moved beyond just finance. Marketing, sales, supply chain and procurement professionals increasingly create models to inform their strategies, decisions and recommendations to executives.

Commonalities

- Finance professionals build forecasts and models with the objective of offering a reasonable estimate of how a business will perform, including both revenue and expenses. They develop this estimate based on historical and presumed future factors
- Forecasts and models typically use the same historical data and projections of variable costs to predict a company's revenue.
- Similarly, audience analyse the output of both financial forecasts and models, including investors, lenders and corporate planning and budgeting teams.

Differences

- The financial forecast is the baseline representation of predicted cash flow and expenses for a given accounting period. It is represented in pro forma income statements, balance sheets and cash flow statements.
- Finance professionals build financial models using analytical tools that allow them to understand how different internal and external events might impact cash flow and expenses.
- Those who create financial models are often doing so for a specific reason, such as seeking investors, analysing the impact of finite business decisions and the risk factors associated with each. Forecasts are done on a regular basis to help with planning and budgeting.

18.8 Sustainability Growth Model

The sustainable growth rate (SGR) is the maximum rate of growth that a company or social enterprise can sustain without having to finance growth with additional equity or

debt. In other words, it is the rate at which the company can grow while using its own internal revenue without borrowing from outside sources

Sustainable Growth: With the interpretation of sustainable development in mind, we can formulate a precise definition of sustainable growth. The difference between the two concepts arises because economic growth as we have defined is a much narrower concept than economic and social development (though there are numerous writers who often use the terms “growth” and “development” or “sustainable growth” and “sustainable development” interchangeably). Sustainable growth is a process of economic growth (that is, expansion of per capita material output) where the welfare of human society does not exhibit a tendency to decline over time.

When it occurs, that is, why a path of sustained economic growth need not be path of sustainable growth. Production of more output requires more inputs, and the earth’s “sources” of natural resources could be depleted by continued growth of production and consumption. Further, more output means more emissions and wastes, and so the world’s “sinks” could inevitably become overburdened by continued economic growth. Economic activity may eventually exceed the “carrying capacity” of the biosphere with dire consequences for human and biological welfare. Therefore, once we realize the dependence of welfare and production on the natural environment and the way economic activities affect the environment, it becomes important to move beyond the concept of economic growth or expansion of physical output over time and to ask whether sustainable growth occurs; that is, whether human welfare stays undiminished over time.

However, contrary to the beliefs of many environmentalists, there is no necessary contradiction between sustained economic growth and sustainable growth. This is because the scale of economic activity is but one determinant of the rate of depletion of natural resources and the rate of production of waste materials and gases. Equally important are the composition of economic output and the techniques used to produce it. If along with economic growth, there comes a transformation in the structure of the economy, as well as the substitution of cleaner and resource-conserving technologies for dirtier, resource-using technologies (as also substitution of old goods by new goods

satisfying similar needs), then growth can continue to provide even higher standards of material living without threatening the nonmaterial aspects of human well being

Practice Questions

Multiple Choice Questions

- Which of the following steps may not be used to define the existing data model as a precursor to re-engineering a new database model:
 - Build an initial object model
 - Determine candidate keys
 - Refine the tentative classes
 - Discover user interfaces
- _____ is the purpose of transformation of a system from one representational form to another is known as
 - Re-factoring
 - Restructuring**
 - Forward engineering
 - Both Re-factoring and Restructuring
- In financial planning and re-engineering, the highest option price will lead to
 - longer option period
 - smaller option period**
 - lesser price
 - higher price
- One of this following is not an objective of financial planning and re-engineering for an employee in an organisation
 - economic growth
 - setting of heavy industry
 - modernisation
 - economic modelling**
- The quality of financial planning that depends on the process of limitation of financial and re-engineering is
 - availability of data
 - sources of information
 - portfolio theory
 - diversification process
- One of this is a financial planning doesn't change with the changing environment.
 - ever changing environment
 - plan rigidity
 - future uncertainty

- D. environmental factor
7. Which of the following is not true for forecasting?
- A. Forecasts are rarely perfect
 - B. The underlying casual system will remain same in the future
 - C. Forecast for group of items is accurate than individual item
 - D. Short range forecasts are less accurate than long range forecasts
8. In which of the following forecasting technique, subjective inputs obtained from various sources are analyzed?
- A. Judgemental forecast
 - B. Time series forecast
 - C. Associative model
 - D. All of the above
9. If regression analysis is used to estimate the linear relationship between the natural logarithm of the variable to be forecast and time, then the slope estimate is equal to
- A. the linear trend.
 - B. the natural logarithm of the rate of growth.
 - C. the natural logarithm of one plus the rate of growth.
 - D. the natural logarithm of the square root of the rate of growth
10. Single-equation econometric model of the demand for a product is a _____ equation in which the quantity demanded of the product is an _____ variable.
- A. structural, exogenous
 - B. structural, endogenous
 - C. definitional, exogenous
 - D. definitional, endogenous

Theoretical Questions

1. Differentiate between Financial Planning and Financial Re-Engineering
2. Discuss the Scope of Financial Planning
3. Explain any five importance of Financial Planning
4. Describe the process of Financial Re-Engineering
5. Differentiate between Forecasting and Modelling

CHAPTER 19

ELECTRONIC PAYMENT SYSTEM

Learning Objectives

After studying this chapter, you should be able to:

1. Understand the Meaning, Economic benefits, and Challenges of Electronic Payment Systems in Nigeria.
2. Know the various Types, Methods, and Modes of Electronic Payment System in Nigeria.
3. Evaluate the effects of the Risks associated with Electronic Payment System
4. Compare and Contrast the different types of Electronic Payment Gateways and Justify their appropriateness
5. Successfully apply the windows of Electronic Payment System to HR functions and
6. Generally evaluate the Effectiveness of the e- Payment System in Nigeria

19.1 Introduction

The payment system is an operational network governed by laws, rules and standards that links bank accounts and provides the functionality of monetary exchange using bank deposits (Summers, 2012). The payment system is the infrastructure consisting of institutions, instruments, rules, procedures, standards and technical means established to effect the transfer of monetary value between parties discharging mutual obligations. Its technical efficiency determines the efficiency with which transaction money is used in the economy and risk associated with its use (Biago & Massimo, 2001). What makes it a “system” is that it employs cash substitutes with the use of electronic money and other ICT related equipment in its operations. Traditional payment systems are negotiable instruments such as draft cheques and documentary credits such as letter of credits. With the advent of computers and electronic communications a large number of alternative electronic payment systems have emerged. These include debit cards, credit cards, electronic funds transfers, direct credits, direct debits, internet banking and e-commerce payment systems. Some payments include credit mechanisms, but that is essentially a different aspect of payment. Payment systems are used in lieu of tendering cash in domestic and international transactions and consist of a major service provided by banks and other financial institutions. Payment systems may be physical or electronic and each has its own procedures and protocols. Standardization has allowed some of these systems and networks to grow at global scale, but there are still many countries and product- specific systems. Examples of payment systems that have become globally available are credit card and automated teller machine networks. Specific forms of payment systems are also used to settle

financial transactions for products in the equity markets, bond markets, currency markets, futures markets, derivatives, option markets and to transfer fund between financial institutions both domestically using clearing and Real Time Gross Settlement (RTGS) Systems and internationally using the SWIFT network. Electronic Payment Systems (EPS) apart from their convenience and safety also have a significant number of economic benefits which include mobilising savings and ensuring most of the cash available in the country are with banks. This will make funds available to borrowers both businesses and individuals. Furthermore, an electronic payment system has the ability to track individual spending; to facilitate the design of products by the banks. This information is also useful to the government when making decisions. EPS also have the ability to reduce cash handling and printing costs. According to Moody's Analytics (2010) real global GDP grew an extra 0.2% a year on average beyond what it would have without card usage. Simply put card usage increases a country's GDP by 0.2% annually. Moving from a society where 90% of cash is held outside of the banks to a cashless society is a big change. It is therefore an enormous challenge for the government, financial institutions, individuals and other stakeholders responsible for making this system achieve its economic benefits. There are likely to be operational, financial, economic and marketing changes that need to be managed properly (Delali, 2010). Since the overcoming of barter in the history of mankind, trade usually involve the exchange of goods and services and an equivalent abstract value such as money.

19.2. Definition

Electronic Payment System (e-Payment) is a type of payment conducted via electronic or online mediums. Online payment systems eliminate the need for cash or cheque payments. It is a unique payment method that allows you to conduct online transactions via digital wallets, bank cards and internet banking systems.

Electronic payment is a type of financial exchange that was facilitated by using electronic communications between the buyer and the supplier. An online environment is used for an electronic payment, which is a financial transaction. A system of financial exchange that is made possible by a digital financial instrument, such as encrypted credit card information or electronically signed checks backed by a bank, is known as an electronic payment system.

To a consumer, an electronic payment system is a convenient way of making a purchase or paying for a service without holding cash or having to go through the process of completing a cheque and producing some form of acceptable identification.

To a supplier of goods or services, and electronic payment is the receipt or outward movement of funds, linked into an inventory management, ordering or accounting system, eliminating the need of large cash holding, time-consuming clerical activities and offering easier management of cash flows.

To an account\ payment manager or bank, an electronic payment is a series of the process by which value exchange is captured, verified and accepted; a series of checks, balances to ensure integrity,

E-payment is based on electronic financial network, and communication technologies as a means to realize circulation and payment by making use of binary data stored in the bank computer systems.

Delali (2010) in Vassiliou (2004) defined electronic payment as a form of financial exchange that takes place between the buyer and seller facilitated by means of electronic communication. According to Cobb (2004), the value of electronic payment goes way beyond the immediate convenience and safety of cards to a greater sphere of contributing to overall economic development. The term electronic payment can be referred narrowly to e-commerce- a payment for buying and selling goods and services offered through the internet, or broadly to any type of electronic funds transfer (Massimo & Garcia 2008).

Ayodele (2007) defined e-payment as electronic transfer of cash via online transactions for business-to-business (B2B), business-to-consumer (B2C), person-to-person (P2P), and most recently administration-to consumer purposes. A payment addresses the payment of taxes toward the government.

Humphrey, Kim & Vale (2001) defined e-payment as cash and associated transactions implemented using electronic means. Typically, this involves the use of computer networks such as the internet and digital stored value system. This system allows bills to be paid directly from bank, and without the use of writing and mailing cheques.

Guttman (2003) defined e-payment as credit card details, or some other electronic means, as opposed to payment by cheque and cash. It is also defined as a payer's transfer of monetary claim on a party acceptable to the beneficiary (Worku 2010). Electronic payment can also be defined as convenient, safe and secure methods for payment of bills and other transactions by electronic means such as card, telephone, the internet, EFT and etc. Electronic payment gives consumers an alternative to paying bills and debts by cash, cheque, money order etc. Its main purpose is to reduce cash and cheque transactions. In the Nigeria context, e-payment is effecting payments from one end to another and through the medium of the computer without manual intervention beyond inputting the payment data, it is the ability to pay the suppliers, vendors and staff salaries electronically at the touch of a computer button (Agba, 2010).

19.3. Characteristics of an electronic payment system:

Following are the essential characteristics of an electronic payment system:

- 1. Acceptability:** - The payment infrastructure should not only be robust, but also available and accessible to a wide range of consumers and sellers of goods and services. The value stored in the electronic cash should be honoured and accepted by other banks and financial institutions for reconciliation.
- 2. Reliability:** - Users and businesses want a payment system that is reliable, because the availability of services and smooth running of an enterprise will depend on the availability and successful operation of the payment infrastructure. The users should be completely shielded infrastructures. The user should be completely shielded from a system or single point failure.
- 3. Security:** - Digital currency should be stored in a form that is resistant to replication, double-spending and tampering. At the same time, it should offer protection from the intruders trying to tap it to unauthorized use, when transmitted over internet.
- 4. Usability:** The user of the payment mechanism should be able to use it as easily as real currency. This requires that the payment system should be well integrated with the existing applications and processes that acquire the role of transacting parties in e-commerce.
- 5. Scalability:** - The payment system infrastructure should be scalable, to be able to handle the addition of new users and merchants, so that systems will perform normally without performance degradation and maintain the quality of service. It

should be able to offer the same performance and cost per transaction overheads with a growing number of customers and transactions.

- 6. Anonymity, privacy:** - This characteristic refers the desire of users to protect their privacy, identity and personal information. In some transactions, the identities of the parties could be protected by anonymising it. Anonymity means that it is not possible to discover someone's identity or to monitor an individual's spending patterns.
- 7. Applicability:** - Applicability of a payment system is defined as the extent to which it is accepted for payments at points of sale, or at online e-commerce sites. Debit cards and credit cards have high applicability, as one can pay with them in a variety of places. The applicability of a payment system may vary from country to country.
- 8. Authorization type:** - Authorization type is defined as the form of a control over the validity of transactions. The authorization type can be offline. Offline authorization means that users of the system can exchange money while not connected to a network, without a third party mediating the transaction. Paper cheques are an example of offline authorization.

19.4 Comparison of Electronic Payment System with Traditional Payment System: -

Compared with tradition payment systems, e-payment has the following features: -

1. E-payment introduces digital circulation to realize information transmission, so all means of e-payment are digitalized. But, traditional payment is realized through physical circulation such as cash circulation, bill transfer and bank exchange.
2. The working environment of e-payment is based on an open system platform i.e. internet, while the traditional payment is operated in a relatively closed system.
3. E-payment uses most advanced communication means, such as the internet and extranet. Whereas traditional payment uses traditional communication media.
4. E-payment has a very high requirement for both hardware and software facilities, generally including online terminals, relevant software and some other supporting facilities, while traditional payment does not have such a high requirement.
5. E-payment enjoys advantages for it is convenient, fast, efficient and economic. As long as the user has a computer connecting to the internet, he will be able to stay indoors and complete the whole payment within a very short time.

19.5 Advantages of Electronic Payment System

1. **Secure e-Payment Transactions:** Electronic payments are much more efficient and safer than their traditional, paper-based counterparts. e-payment methods and systems offer multiple ways of securing your payments, such as payment tokenization, encryption, SSL, and more. Although digital solutions are not immune to hackers and security breaches, most electronic payment providers also have a host of data experts and engineers working to keep your payment information safe.
2. **Saved Time and Resources:** By adopting electronic payment methods, your business saves time for its teams, its customers, and its leadership. Processing supplier payments the traditional way takes a lot of time. And we found that was just the case with one of our Mineral Tree clients. The House of Cheatham processes more than 750 invoices a month, averaging about 6 hours a week just to prepare payment runs. By switching to an electronic payment solution, they're able to prepare their weekly payment run in just 5 minutes.
3. **Speed of e-Payments:** Since electronic payments are made digitally, funds are transferred much faster relative to traditional payment methods like checks. e-payments allow users to make payments online at any time, from anywhere in the world, and also remove the need to go to banks. Faster electronic payments, like virtual cards, empower businesses to improve security, visibility, and efficiency all while lowering costs and saving time on manual processes.
4. **Complete Visibility into Electronic Payment Process:** Electronic payments provide complete visibility and transparency throughout the entire payment process for both your business and your suppliers, thus improving the supplier relationship. Transparency is an essential factor when it comes to supplier payments, electronic or otherwise. When you automate electronic payment processing, you gain greater insight into each step of the invoicing process. Automated processes provide greater control over outgoing cash flow compared to tedious, error-prone manual processes. This combination of process transparency, greater control over payments, and reduction of manual tasks means that it will be easier for your AP department to identify suspicious or fraudulent activity.
5. **Improved Supplier Relationships with e-Payments:** Unlike paper checks that take time to write, process, and eventually post to your supplier's bank account, electronic payments are fast, transparent, and secure. Paying suppliers on time and

offering them complete visibility into the payment process, will naturally improve your relationships with suppliers. Additionally, automating the payment process with electronic payments will lessen the incidence of late payments, which will result in fewer supplier questions for your AP staff. That's a big time save considering 43% of AP teams spend over 6 hours a week answering vendor questions regarding payments. Improving and maintaining a strong supplier relationship is crucial, especially in the midst of an industry-wide supply chain disruption.

19.6 Economic Benefit of Electronic Payment System in Nigeria

Electronic payment systems are pivotal to the digitalization of the financial system here in Nigeria, with numerous advantages ranging from financial inclusion, convenience in carrying out financial transactions to security of these transactions in a digital platform which would culminate to economic development of the economy. However, digital finance is not without its downsides, which constitute the problem this study seeks to resolve. Providers of digital finance services are profit-seeking corporations that use digital finance to maximise their profitability or to maximise the profitable opportunities of businesses affiliated with digital finance providers namely banks, financial and non-financial institutions. Corporate providers of digital finance services can discriminately use a more aggressive marketing tactic to persuade high- and middle income customers to use a new or existing digital finance platform or infrastructure and use a less-aggressive marketing tactic to persuade low-income and poor customers to use new or existing digital platforms or infrastructure if they believe the latter cannot afford the associated fees, thereby leading to lower financial inclusion for poor and low-income customers since the net monetary pay-off to digital finance providers is higher with high-and-middle income customers than with low-income and poor customers.

Electronic payment systems promote financial inclusion More than 2 billion people have no access to any financial services. Overall, only about 59 percent of men and 50 percent of women in developing countries have an account at a regulated financial institution. Women, the poor and small businesses often rely on informal financial services, even when they receive public transfers or remittances:

1. Electronic payment systems help overcome barriers to accessing financial services. Mobile money schemes, in particular, allow people who own a phone

but do not have a bank account to make and receive payments. In the right environment, these systems can take off and reach massive size rapidly.

2. Digital payments can reduce costs to recipients. For instance, farmers in Nigeria realized time savings for each payment equivalent to an amount that would feed a family of five for a week. Digital payments increase control, since senders of remittances can have a greater influence on how recipients use the money, including for savings.
3. Electronic payment systems can increase the incentive to save, through automatic deposits, text reminders, or default options. Text reminders increased savings in Bolivia, Peru, and the Philippines by up to 16 percent.
4. Digital payments improve risk management by making it easier to receive support from social networks that can act as safety nets. M-Pesa users were better able to absorb income shocks compared to nonusers.
5. Electronic payment systems speed up delivery, which is especially important in case of emergencies such as natural disasters. And they increase security compared to traveling with large amounts of cash, as is commonly necessary in low-income and middle-income countries. (World Bank Various years. Findex database).

19.7 Disadvantages of Electronic Payments System

1. **Technical difficulties:** Like any other technology-dependent programme, online payments are liable to technical issues or downtime. Even while tech maintenance activities are scheduled in advance and often occur at night, they may sometimes annoy online buyers. Many organisations encounter high bounce rates, particularly when it occurs unexpectedly.
2. **Threats to passwords:** There is a large risk that an online portal may access your private data or your bank account information if you are a registered user and often utilise online payments. Even if one-time passwords (OTPs) are used for the majority of transactions, some circumstances call for password security. You might be at risk of a privacy violation, especially if you work with many institutions.
3. **Cost of fraud:** Cybercriminals are adopting online payments as a preferred method of payment, just as more and more consumers are doing. Database exploits, phishing scams, and identity theft are all on the rise. Businesses deploy

several payment-security software programmes, at great expense, in an effort to stop these and boost security.

4. **Security concerns:** There are several security dangers associated with utilising online payments, as was covered in the preceding paragraph. Important financial data and information may be readily hacked by thieves if suitable security precautions aren't taken. Criminals may also easily evade capture since there are no verification mechanisms like face recognition or fingerprints.
5. **Lack of technology literacy:** The fact that many individuals, particularly the older population, lack basic computer literacy is one of the biggest drawbacks of online payments. They avoid utilising online payment methods because they lack sufficient understanding of how to use technology and devices. Many of them continue to utilise conventional payment methods because they are afraid of the difficulties involved. In developing nations like India, this is a major problem.
6. **Time and amount restrictions:** Some banks place a limit on the number of transactions
or the daily maximum amount that may be transferred. The majority of online transactions also have a deadline that you must meet (like receiving and accepting OTPs). For some people, all these restrictions may prove to be quite inconvenient.
7. **Uncertain transactions:** You may complain to your bank or the company that handles your online payments if you discover someone utilising your electronic funds. However, you cannot make a complaint or request a refund if you cannot locate the person's personal information or, for that matter, any information about them. In such cases, it becomes challenging.

19.8 Challenges of Electronic Payments

Despite the government's resolve to place the country in the map of global electronic markets, there are a number of factors that are militating against the effective migration of the country payment system in line with the government's new policy. Electronic payments despite its numerous benefits come with its own challenges even in the developed world. The challenges militating against e-payment as identified by Summanject (2009) generally revolve around:

- Integrity: to ascertain that transmitted financial information is unchanged in transit.

- Non-reputation: to ascertain that all parties have non-deniable proof of receipt.
 - Confidentiality: to ascertain that transactions are protected from possible eavesdroppers.
 - Reliability: to ascertain that there is reduced possibility of failure.
 - Authorization: to ascertain that individuals are recognized and granted the desired rights and privileges.
- a. Security:** refers to a set of processes and methodologies that are applied to guarantee the integrity, privacy, availability, confidentiality, authorization, access control and authentication of the information exchanged during e-payment. As rightly pointed out by Atanbasi (2012), the major challenge of e-payment in the country is security. Security in terms of platform, hackers and virus attacks. Also, the automation of transaction without direct contact from payer and payee makes e-payment vulnerable and provide an environment for security leaks. To ensure that output from the system is reliable and accurate, e-payment system should provide all the necessary mechanism to deal with expected security breaches.
- b. Infrastructure:** lack of infrastructure is the most intimidating challenge that confronts e-payment system. Most e-payment systems depend on IT infrastructure such as laptop, desktop, scanners, good internet connectivity, global software, etc. the provision of basic IT infrastructure is a major problem in developing countries.
- c. Lack of Uniform Platform by Banks and MDAs:** there is no compelling law mandating the banks to use common software platform. Every bank is left to use whatever platform that they felt will perform the electronic services on behalf of the clients. There is the problem of switches in effacing transfer from one bank to another. Interconnectivity has been a problem.
- d. Society's Culture:** culture is a collection of characteristics, human capabilities, habits, belief, art, attitude, knowledge, morals, custom, law and any capabilities of an individual or group. The differences in culture of payment have direct reflections on the scope of establishing e-payment system (Abdulla et al., 2015).
- e. Lack of Legal and Regulatory Framework:** Nigerian current laws do not accommodate electronic contracts and signatures. For the pursuit and prudential supervision of e-payment, a set of laws and regulations have to be considered in order to provide financial integrity, stability, soundness and competitiveness. The most

noticeable rules for e-payments are anti-money laundering, supervision of commercial banks and e-money institutions, central bank laws for payment systems, security and protection laws and cooperation and competition laws (Abdulla et al., 2015).

- a. **Lack of Seriousness by Banks:** some banks in Nigeria are very conservative; they use very few innovative products and marketing techniques. Imala (2009) attributed the slow pace of doing online business in Nigeria system to the failure of the banking sector. According to him, the inadequate enabling infrastructure in the nation's banking sector is largely responsible for the poor pace of growth that has been witnessed in the economy since the introduction of the new payment system. Therefore, the readiness of the commercial banks in the country to support the government on its new drive and policy become a source of major concern to social and financial analysis. The cause of the concern stems from the doubt over the capability of the banks to muster the financial muscle, strategic planning, technical knowhow and other logistic strength required for a meaningful hosting and implementation of an e-payment platform.
- b. **Lack of Political will:** the lack of understanding of the deliverables of e-payment systems to the economy by successive governments is responsible for the scrawny growth of e-payment in Nigeria. In addition, the MD of Interswitch Nigeria remarked that if government continues to fail to realize the importance of leveraging e-payment platforms to drive general administration and governance, it would be cumbersome for the gains of the technology that would be required to ensure penetration into the polity to be accessed. He further stated that in spite of the available channels to drive e-payment, several governments in the country do not possess the roadmap to leverage on the needs and demands of the populace

19.9 Mode/Method of Electronic Payment System

Crypto Currency: A crypto currency is a digital currency, which is an alternative form of payment created using encryption algorithms. The use of encryption technologies means that crypto currencies function both as a currency and as a virtual accounting system. To use crypto currencies, you need a cryptocurrency wallet.

Electronic Cheque: An electronic check, or e-check, is a form of payment made via the Internet, or another data network, designed to perform the same function as a conventional paper check. Since the check is in an electronic format, it can be processed in fewer steps.

Credit Card: A credit card is a card issued by a financial institution, typically a bank, and it enables the cardholder to borrow funds from that institution. Cardholders agree to pay the money back with interest, according to the institution's terms. Credit cards are issued in the following variety of categories:

- **Standard cards** simply extend a line of credit to their users for making purchases, balance transfers, and/or cash advances, and they often have no annual fee.
- **Premium cards** offer perks such as concierge services, airport lounge access, special event access, and more, but they usually have higher annual fees.
- **Rewards cards** offer cash back, travel points, or other benefits to customers based on how they spend.
- **Balance transfer cards** have low introductory interest rates and fees on balance transfers from another credit card.
- **Secured credit cards** require an initial cash deposit that is held by the issuer as collateral.
- **Charge cards** have no preset spending limit but often don't allow unpaid balances to carry over from month to month.

Debit Card: A debit card is a payment card that makes payments by deducting money directly from a consumer's checking account, rather than on-loan from a bank or card issuer. Debit cards offer the convenience of credit cards and many of the same consumer protections when issued by major payment processors such as Visa or Mastercard.

E-Wallet: E-wallet is a type of electronic card which is used for transactions made online through a computer or a smartphone. Its utility is same as a credit or debit card. An E-wallet needs to be linked with the individual's bank account to make payments.

Hyperlink: This is an item like a word or button that points to another location. When you click on a link, the link will take you to the target of the link, which may be a webpage, document or other online content. Websites use hyperlinks as a way to navigate online content.

E-Cash: Digital cash is a system of purchasing cash credits, storing the credits in your computer or digital wallet, and then spending them when making electronic purchases over the internet or in person on a mobile device at the point of sale. Digital cash allows individuals to make online transactions using digital currency. It is designed to be a convenient and secure alternative to traditional payment methods, such as credit cards or cash.

Examples of digital wallets include the following:

- Apple Pay
- Cash App
- Dwolla
- Google Pay
- PayPal
- Samsung Wallet
- Venmo
- Zelle

Smartcards: A smart card is a physical card that has an embedded integrated chip that acts as a security token. Smart cards are typically the same size as a driver's license or credit card and can be made out of metal or plastic. They connect to a reader either by direct physical contact -- also known as chip and dip or through a short-range wireless connectivity standard such as radio-frequency identification (RFID) or near-field communication.

19.10 Types of E-Payment

In Nigeria context, there are two types of e-payment namely:

- i. End to End processing: Here, all the processes from approvals to the receipt of value by the beneficiary are done electronically.

- ii. Manual e-payment or use of Mandate: It is the mixture of manual and electronic process where the available infrastructures cannot support the end-to-end processing.

There are many forms of e-payments these include cards, internet mobile payments, financial services kiosks, biometric payments, electronic payment networks (Osibote, 2010; Asaolu, Ayoola & Akinkoye, 2011). Economic Benefits of Electronic Payment System in Nigeria Delali (2010) in Fiallos & Wu (2005) noted that the arrival of the internet has taken electronic payments and transactions to an exponential growth level. Consumers could purchase goods from the internet and send unencrypted credit card numbers across the network, which did not provide much security and privacy. But a wide variety of new secure network payments schemes have been developed as consumers became more aware of their privacy and security.

19.11 Electronic Payment Gateway

What Is a Payment Gateway?

A payment gateway is a technology used by merchants to accept debit or credit card purchases from customers. The term includes not only the physical card-reading devices found in brick-and-mortar retail stores but also the payment processing portals found in online stores. Brick-and-mortar payment gateways also have begun accepting phone-based payments using QR codes or Near Field Communication (NFC) technology.

How Payment Gateways Work

The payment gateway is a key component of the electronic payment processing system, as it is the front-end technology responsible for sending customer information to the merchant acquiring bank, where the transaction is then processed.

In the past, terminals would accept credit cards using magnetic strips and required paper signatures from the customer. With the development of chip technologies, the signature phase could be removed in favour of a personal identification number (PIN) entered directly into the payment gateway hardware. Today, contactless purchases are also available, with many customers now using their phones as a payment device instead of plastic credit cards

Example of a Payment Gateway

Merchants can gain access to payment gateway systems through merchant acquiring bank partnerships or they can use their own payment gateway system. Large banks such as Bank of

America (BAC) and JPMorgan Chase (JPM) have sophisticated payment gateway systems that they offer to customers along with their own merchant acquiring bank services. Ultimately, merchants can choose a variety of payment gateway technologies as long as they are compatible with the merchant acquiring bank that is being used for payment processing.

One recent example of a payment gateway is Square (SQ), which emphasizes flexible mobile payments for retail businesses. Block Inc.'s Square Reader technology allows customers to easily accept payments at ad-hoc locations such as conventions or farmer's markets, or through roaming storefronts such as food trucks.

With the Square Reader payment gateway technology, a merchant can attach a small piece of hardware to their mobile phone, which allows the customer to swipe their payment card for processing through the mobile phone's electronic connection. The Square Reader sends the payment information to a merchant's acquiring bank, which then processes the information for the merchant momentarily.

It is likely that new products will continue to increase the versatility and speed of payment gateways. In recent years, blockchain startups have even introduced payment gateways for cryptocurrencies.

19.12 Types of Electronic Payment Gateways

Before you can choose the best fit for your website, think about your business needs and infrastructure. Some types of payment gateway are self-hosted, while others offer a full package service. The main difference between these four types of payment gateway is how they are integrated into your website. Some require more maintenance and upkeep, while others offer hands-off support from the host.

The four different types of payment gateway are:

- Hosted payment gateway
- Self-hosted payment gateway
- API-hosted payment gateway
- Local bank integration gateway

1. **Hosted Payment Gateway:** If you don't want to deal with the finer details of integrating and maintaining your website's payment gateway, a fully hosted service is probably your best bet. A hosted payment gateway works by directing the customer away from your checkout page. Instead, when the customer is ready to make a purchase, they click on a 'buy now' link which redirects to the host or **payment service provider (PSP)** page. This separate site is where the customer fills out payment details before being redirected back to your business website to complete the sale. One example of a popular hosted gateway is
2. **Pay-Pal.:** This type of payment gateway offers a high level of security with **PCI compliance** and fraud protection. It's also very user-friendly and easy to set up, with the host taking care of the details. However, because a hosted gateway is external, you won't be able to fully control your buyer's checkout experience.
3. **Self-hosted Payment Gateway:** If you prefer to have greater control over your user experience, you might be more interested in choosing a self-hosted payment gateway like Shopify or Stripe. The difference between a hosted and self-hosted gateway is that in the case of self-hosted, customer payment details are collected directly on the merchant website. These details are then encrypted and submitted to the third-party payment gateway for authorisation. One benefit is that a self-hosted gateway enables a faster checkout process, because the transaction is completed solely on the merchant site. There's no redirection to a separate site for payment, so the merchant is in full control over a user's payment experience. The disadvantage is that you won't have access to a full technical support team as you would with a hosted service.
4. **API-hosted Payment Gateway:** An API-hosted payment gateway is best for a merchant who wants to take complete control of their website design. Both the payment details and processing are handled directly on the merchant website, using an application programming interface or API. An API-hosted gateway offers a fully customisable checkout experience and can be integrated with a variety of setups including mobile devices.
5. **Local bank integration gateway:** This gateway redirects the customer to the merchant's website where all payment and contact information is input and exchanged. The customer is then redirected back to the merchant's site once payment has cleared alongside a payment notification.

19.13 Evaluation of E-Payment System in Nigeria

Looking at the aims for introducing electronic payment system in Nigeria, it is crystal clear that only few of the objectives have been achieved. These include among others the following: “Elimination of many risks associated with carrying large sums of money such as armed robber, fraud, and others. At least government organizations no longer pay cash to “contractors” and civil servants. It eliminates the use of cash to facilitate speedy payments for all transactions. But to a very large extent, the following objectives have not been meeting. It helps in tracking the implementation of government policies through the elimination of delays in government payment system. There are instances of delay in payment to contractors who are not ready to play the ball. There has been a complaint from some contractors handling projects in the rural areas over difficulties associated with the e-payment model. Minimize interaction of government officials and contractors to eliminate opportunity for corruptive tendencies. It will be difficult to eliminate this as interaction at which every level will continue formally or informally if Nigerians are to be honest with them.

In every case, there is need to ask the question. Who are the contractors? Is the due process of government working or not? Who are the officials subverting this and other laudable programmes of government? Can corruption really be stamped out of the system? It helps in achievement of economy and efficiency in government financial transactions. For as long as corruption remains within the polity, there can be no efficiency in the system. The EFCC and the judiciary will have to find a common ground to tackle this canker worm that has defiled all solution. China’s example could be the best solution.

However, this may also not work because of religious and tribal sentiment among some Nigerians. Enhancement of real time reporting and improve quality of financial reporting system in the public sector. It has been observed that since the implementation of the policy, there has been late returns or no response in respect of unapplied funds. The existing system cannot guarantee real-time reporting of finances; as a result, there can be no good financial reporting” (Ogedebe & babatunde, 2012:306).

Policy Recommendations The following were recommended for policy makers:

- i) The government of Nigeria should provide the much-needed leadership and support for electronic payments.

- ii) Applicable rules and regulations including those for electronic approval processes, consumer protection and e-transactions should be developed and standardized as needed.
- iii) The migration of our payments system towards a cashless society would require some reform and a lot of effort and sensitization especially for low income customers, who are current deeply rooted in using cash and see it as a convenient and easy way of receiving and making payments. The sensitization exercise would require the combined effort of various stakeholders including government, financial institutions and non-bank providers of payment services.
- iv) The cashless system of payments idea was well received by the majority of Nigerians, but with some concerns challenges which can hamper its success and must be properly addressed by providers
- v) Government, financial institutions and non-bank providers should systematically expand the necessary infrastructure by promoting the development of necessary technologies, recruiting experts and expanding high speed information network to enhance e-payment system in the country.

Conclusion

E-payment system has the prospect of helping to achieve economic and efficient government financial transactions and enhancement of real-time reporting and improvement of quality of financial reporting system in Nigeria. Despite the numerous benefits that e-payments bring to the nation, banks and individuals, it also has its challenges. The challenges as discussed in this paper can be categorized into four main groups. That is, security, infrastructure, legal and regulatory issues as well as socio-cultural issues. Also, the readiness of the commercial banks in the country to support the government on its new drive and policy has become a source of major concern to social and financial analysts. The cause of the concern stems from the doubt over the capability of the banks to muster the financial muscle, strategic planning, technical knowhow and other logistic strength required for a meaningful hosting and implementation of an e-payment platform in making Nigeria join the league of nations whose payment system conforms to internationally accepted regulatory, technical and operational standards.

Practice Questions

Multiple Choice Questions

1. An online transfer of cash for business to business, business to consumer, person to person and administration to consumer purposes is described as.....

- A. **Electronic Payment**
- B. Digital Accounting
- C. Financial Technology
- D. Electronic Billing

2. The card which enables a cardholder to borrow funds from its financial institution is.....

- A. debit card
- B. **credit card**
- C. hyperlink
- D. electronic cheque

3. In Nigeria context they are how many types of e -payment?

- A. **2**
- B. 3
- C. 5
- D. 7

4) The use of encrypted technologies means that _____ functions both as a currency and virtual accounting system.

- A. hyperlink
- B. e-wallet
- C. **cryptocurrency**
- D. self-hosted

5) One of the following is not a type of payment gateway

- A. hosted
- B. PayPal
- C. **zelle**
- D. local banks integration

6) The card that offers perks but usually have a higher annual fee is known as

- A standard card
- B. **premium card**
- C. reward card
- D. secured credit card

7) The front-end technology responsible for sending customers information to merchant acquiring bank where transaction is then processed is called?

- A. **payment gateway**
- B. manual e- payment
- C. E-payment
- D. radio frequency identification

8) Traditional payment is realised through the following except.....

- A. bills transfer
- B. cash circulation
- C. Bank exchange
- D. digital circulation**

9) All these are advantages of E-PAYMENT except

- A. complete visibility into e payment process
- B. save time and resources
- C. security concerns**
- D. secure e -payment transaction

10)The processing from approval to the receipt of value by the beneficiary is called.....

- A. use for mandate
- B. end to end processing**
- C. payment gateway
- D. Square reader

Theoretical Questions

1. Define and state any five economic benefits of Electronic Payment Systems in Nigeria.
2. Explain the various types, and Methods of Electronic Payment System in Nigeria.
3. Evaluate any three effects of the Risks associated with Electronic Payment System
4. Compare and Contrast the different types of Electronic Payment Gateways and Justify their appropriateness
5. Evaluate the Effectiveness of the e- Payment System in Nigeria

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