PGBA (S2) 07 - 02

FINANCIAL MANAGEMENT

SEMESTER 2

BUSINESS ADMINISTRATION

BLOCK - 2

KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY

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MASTER IN BUSINESS ADMINISTRATION

FINANCIAL MANAGEMENT

Block - 2
DETAILED SYLLABUS

UNIT - 8 : Risk in Capital Budgeting **Page 141 - 150**

Meaning and Types of Risk, Methods suggested for accounting for risk in Capital Budgeting, Risk Adjusted Discount Rate, Certainty Equivalent Approach, Probability Distribution Approach, Sensitivity Analysis, Decision Tree Approach and Simulation Analysis.

UNIT - 9 : Capital Rationing **Page 151 - 161**

Meaning and concept of Capital Rationing, Problem and Assumption of Capital Rationing, Objective of Capital Rationing, Types and features of Capital Rationing, Steps involved in Capital Rationing and Methods of Capital Rationing

UNIT - 10 : Working Capital Management **Page 162 - 176**

Concepts and importance of working capital, Determinants of working capital, Operating cycle, Approaches for working capital management and Estimation of working capital

UNIT - 11 : Cash Management **Page 177 - 191**

Meaning and concept of Cash and Cash management, Importance and objectives of Cash Management, Models for Determining Optimal Cash Needs, Cash Planning, Cash forecasting and Budgeting, Methods of Accelerating Cash Inflows and Methods of Slowing Cash Outflows and Cash Budget

UNIT - 12 : Inventory Management **Page 192 - 204**

Meaning and characteristics of of Inventory, Objective of inventory Management, Role of Inventory in working Capital, Purpose of Inventory, Cost associated with inventories, Inventory Management Techniques and Importance of Inventory Management Techniques.

UNIT - 13 : Receivables Management **Page 205 - 215**

Meaning of Receivables, Factors influencing the Size of Receivables, Objective of Receivables Management, Cost Associated with Maintaining Receivables, Credit policy Variables, Evaluation of credit policy and Forecasting the receivable.

UNIT - 14 : Dividend Decisions **Page 216 - 234**

Meaning and concept of dividend Decision,Determinants and types of dividend policy, Traditional Approach, Dividend Relevance Model, Miller and Modigliani Model, Stability of dividends, Forms of Dividends and stock Split

BLOCK INTRODUCTION

This is the *Second Block* of the course ***'Financial Management'.*** The Block is devided into seven units which are related to the different concepts in Financial Management.

This block comprises the following seven units :

The eight unit introduces us to the Introduction to Meaning and Types of Risk, Methods suggested for accounting for risk in Capital Budgeting, Risk Adjusted Discount Rate, Certainty Equivalent Approach, Probability Distribution Approach, Sensitivity Analysis, Decision Tree Approach and

The ninth unit gives us a broad overview of the Meaning and concept of Capital Rationing, Problem and Assumption of Capital Rationing, Objective of Capital Rationing, Types and features of Capital Rationing, Steps involved in Capital Rationing and Methods of Capital Rationing

The tenth unit gives us an idea on Concepts and importance of working capital, Determinants of working capital, Operating cycle, Approaches for working capital management and Estimation of working capital

The eleventh unit will help us in understanding the Meaning and concept of Cash and Cash management, Importance and objectives of Cash Management, Models for Determining Optimal Cash Needs,Cash Planning, Cash forecasting and Budgeting, Methods of Accelerating Cash Inflows and Methods of Slowing Cash Outflows and Cash Budget

The twelth unit gives us a broad overview of Meaning and characteristics of of Inventory, Objective of inventory Management, Role of Inventory in working Capital, Purpose of Inventory, Cost associated with inventories, Inventory Management Techniques and Importance of Inventory Management Techniques

The thirteenth unit will help us in understanding the concept of Meaning of Receivables ,Factors influencing the Size of Receivables, Objective of Receivables Management, Cost Associated with Maintaining Receivables, Credit policy Variables, Evaluation of credit policy and Forecasting the receivable.

The fourteenth unit gives us a broad overview of the Meaning and concept of dividend Decision, Determinants and types of dividend policy, Meaning and concept of dividend Decision, Determinants and types of dividend policy, Traditional Approach, Dividend Relevance Model, Miller and Modigliani Model, Stability of dividends, Forms of Dividends and stock Split.

The Block is devided into seven units :

UNIT - 8 : **Risk in Capital Budgeting**

UNIT - 9 : **Capital Rationing**

UNIT - 10 : **Working Capital Management**

UNIT - 11 : **Cash Management**

UNIT - 12 : **Inventory Management**

UNIT - 13 : **Receivables Management**

UNIT - 14 : **Dividend Decisions**

UNIT - 8 : RISK ANALYSIS IN CAPITAL BUDGETING

UNIT STRUCTURE

8.1 Learning Objectives

8.2 Introduction

8.3 Meaning and concept of Risk

8.4 Sources and Types of Risk

- 8.4.1 Sources of Risk
- 8.4.1 Types of Risk

8.5 Techniques for accounting for risk in Capital Budgeting

- 8.5.1 Risk Adjusted Discount Rate
- 8.5.2 Certainty Equivalent Approach
- 8.5.3 Probability Distribution Approach
- 8.5.4 Sensitivity Analysis
- 8.5.5 Decision Tree Approach

8.6 Let us Sum Up

8.7 Further Reading

8.8 Answers to Check Your Progress

8.9 Model Questions

8.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- define the meaning of risk
- outline the types of risk
- discuss the Sources of Risk
- describe the Methods for accounting for risk in Capital Budgeting

8.2 INTRODUCTION

In the previous unit 7, we discussed the concept capital budgeting, capital investment, the various types of investment criteria and capital rationing. In this unit we are going to discuss the sources, methods suggested for accounting for risk in capital budgeting.

Risk is inherent in almost every business decisions. Capital budgeting is used to ascertain the requirements of the long-term investments of a company. In capital budgeting decisions, as they involve costs and benefits extending over a long period of time during which many things can be changes in unanticipated ways, risk is intrinsic.

Risk analysis is one of the most complex aspects of capital budgeting. The variety of techniques suggested top handle risk in capital budgeting are of two types : (i) Analysis of stand-alone Risk (ii) Analysis of Contextual Risk.

This unit discusses the different techniques of risk analysis.

8.3 MEANING AND CONCEPT OF RISK

The existence of volatility in the occurrence of an expected incident is called “risk”. The **Risk** is prevalent in all the business decisions, but it is much more inherent in the capital budgeting decisions. These decisions are the long-term decisions, which involves huge cost and whose benefits are derived over a long period of time or during the lifetime of the project. In other words, risk of an investment is the variance associated with its returns. Risk may be defined as the variation of actual cash flows from the expected cash flows. In capital budgeting risk can be defined as the variability that is likely to occur in future between the estimated and actual returns.

The risk varies according to the nature of investments. A research and development project can be much riskier than the expansion project while; the expansion project can be much riskier than the replacement project. Hence, the firm must evaluate the risk before employing its resources in any long-term investment project.

Let us now discuss the sources and types of risks.

8.4 SOURCES AND TYPES OF RISKS

8.4.1 Sources of Risks

There are several sources of risk in a project. The sources are explained as follows :

1. **Project Specific Risk :** The earning and cash flows of the project may be lower than expected because of estimation error or some factors specific to the project like the quality of management.

2. **Competitive risk :** The unforeseen action of the competitors affects the earnings and the cash flows of the projects.
3. **Industry-specific risk :** The changes in the technology and the regulatory changes also affect the earnings and the cash flows of the projects.
4. **Market risk:** The unexpected changes in the GDP growth rate, interest rate etc has an impact on the functioning of the projects.
5. **International risk:** International risks are faced by the industries whose primary functions deals with exports and procure their raw materials from international markets. Due to the exchange rate risk or any political risk the earning and cash flows may be different than expected.

8.4.2 Types of Risks

Risk can be broadly classified into two categories : 1. Systematic Risk and 2. Unsystematic Risk.

1. **Systematic Risk :** It refers to that portion of variation in returns which is caused by factors that affects all securities. It may be due to changes in socio-economic, political conditions in the country. A significant political event, for example, could affect several of the assets in your portfolio. It is virtually impossible to protect yourself against this type of risk. Thus, we may have the following kinds of systematic risks :
   - **Market risk :** This is the most familiar of all risks. Also referred to as volatility, market risk is the day-to-day fluctuations in a stock's price. Market risk applies mainly to stocks and options.
   - **Interest rate risk :** Interest rate risk is the risk that an investment's value will change as a result of a change in interest rates. This risk affects the value of bonds more directly than stocks.
   - **Purchasing power risk :** It arises due to inflation which affects purchasing power of people.
2. **Unsystematic Risk :** Unsystematic risk is sometimes referred to as "specific risk", i.e. it is caused due to factors "unique or related to a firm or industry". This kind of risk affects a very small number

of assets. An example is news that affects a specific stock such as a sudden strike by employees. Diversification is the only way to protect yourself from unsystematic risk. The different types of unsystematic risks are :

- **Business risk :** It can be internal or external. Internal risk is caused due to improper product mix, lack of raw-materials etc.
- **Credit risk :** Credit risk is the risk that a company or individual will be unable to pay the contractual interest or principal on its debt obligations. This type of risk is of particular concern to investors who hold bonds in their portfolios. Government bonds, especially those issued by the federal government, have the least amount of default risk and the lowest returns, while corporate bonds tend to have the highest amount of default risk but also higher interest rates.
- **Financial risk :** It is associated with the capital structure of the company. A company with no debt financing has no financial risk.



CHECK YOUR PROGRESS

Q. 1 : Define Risk.

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Q. 2 : State the sources of Risk.

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Q. 3 : Name two types of Risk.

a.....

b.....

8.5 TECHNIQUES FOR ACCOUNTING FOR RISK IN CAPITAL BUDGETING

The following methods are generally suggested for accounting for the risk in capital budgeting :

1. Risk Adjusted Discount Rate
2. Certainty Equivalent Method
3. Probability Method

4. Sensitivity Method
5. Decision Tree Analysis
6. Simulation Technique

Let us now discuss this techniques in the following sub sections.

8.5.1 Risk Adjusted Discount Rate (RADR)

The risk-adjusted discount rate is based on the risk-free rate and a risk premium. Under this method, discount rate is adjusted in accordance with the degree of risk. That is, risk-premium rate is determined and added to the risk free rate otherwise used for calculating net present value.

Risk-adjusted discount rate = risk-free rate + risk premium

Risk free rate = computed based on the return on government securities

Risk premium= It is the additional return that investors require as compensation for assuming the additional risk associated with the project to be taken up for execution.

For example, the rate of interest (r) employed in the discounting is 10 per cent and the risk discount factor or degrees of risk (d) are 2, 4 and 5 per cent for mildly risky, moderately risky and high risk (or speculative) projects respectively then the total rate of discount (D) would respectively be 12 per cent, 14 per cent and 15 per cent.

That is RADR = 1/ (8+r+d). The idea is the greater the risk the higher the discount rate. That is, for the first year the total discount factor, D = 1 / (1+r+d) for the second year RADR = 1 / (1+r+d) 2 and so on.

Normally, risk discount factor would vary from project to project depending upon the quantum of risk. It is estimated on the basis of judgment and intention on the part of management, which in turn are subject to risk attitude of management. It may be noted that the higher the risk, the higher the risk adjusted discount rate, and the lower the discounted present value.

8.5.2 Certainty Equivalent Co-efficient Approach

This risk element in any decision is often characterized by the two Outcomes : the ‘potential gain’ at the one end and the ‘potential loss’ at the other. These are respectively called the focal gain and focal loss. In this connection, Shackle proposes the concept of “potential

surprise" which is a unit of measurement indicating the decision-maker's surprise at the occurrence of an event other than what he was expecting. He also introduces "another concept - the "certainty equivalent" of risky investment. For an investment X with a given degree of risk, investor can always find another risk less investment Xi such that he is indifferent between X arid Xi. The difference between X and Xi is implicitly the risk-discount.

The risk level of the project under this method is taken into account by adjusting the expected cash inflows and the discount rate. Thus the expected cash inflows are reduced to a conservative level by a risk-adjustment factor (also called correction factor). This factor is expressed in terms of Certainty - Equivalent Co-efficient which is the ratio of risk less cash flows to risky cash lows.

Thus Certainty —Equivalent Co-efficient;

$$= \frac{\text{Risk less cash flow}}{\text{Risky cash flows}}$$

8.5.3 Probability Distribution Approach

A probability is a relative frequency with which an event may occur in the future. When future estimates of cash inflows have different probabilities the expected monetary values may be computed by multiplying cash inflow with the probability assigned. The monetary values of the inflows may further be discounted to find out the present values.

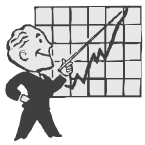
8.5.4 Sensitivity Analysis

The **Sensitivity Analysis** or **What-if Analysis** means, determining the viability of the project if some variables deviate from its expected value, such as investments or sales. In other words, since the future is uncertain and the entrepreneur wants to know the feasibility of the project in terms of its variable assumptions viz, investments or sales change, can apply the sensitivity analysis.

Whether to accept or reject the proposed project depends on its net present value (NPV). Hence, sensitivity analysis is calculated in terms of NPV. Firstly, the base-case scenario is developed; wherein the NPV

is calculated for the project based on the assumptions which are believed to be the most accurate. Then make some changes in the initial assumptions based on the other potential assumptions, and recalculate the NPV. Once the new NPV is calculated, analyze its sensitivity in terms of the changes made in the initial assumptions.

Sensitivity Analysis is very useful for a firm that shows the robustness and the vulnerability of the project due to the change in the values of underlying variables. It indicates whether the project is worth to be carried forward or not with the help of NPV value. If the NPV value is highly sensitive to the changes in variables, the firm can explore the variability of that critical factor.



CHECK YOUR PROGRESS

Q.4 : Define Risk Adjusted Discount Ratio.

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Q.5 : What is Sensitivity Analysis ?

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8.5.5 Decision Tree Analysis

Decision tree analysis is another technique which is helpful in tackling risky capital investment proposals. Decision tree is a graphic display of relationship between a present decision and possible future events, future decisions and their consequence. The sequence of event is mapped out over time in a format resembling branches of a tree. In other words, it is pictorial representation in tree from which indicates the magnitude probability and inter-relationship of all possible outcomes.

Elements of Decision Theory : Any decision has the following elements :

1. The Decision Maker are held constant throughout the simulation, whereas the exogenous variables are randomly determined and are beyond the control of the decision maker.

   - The next step is to specify the values of the parameters and assign probabilities to the random variables that arise from the external factors.
   - Randomly, select any value from the probability distribution of each of the exogenous variables.
   - Compute the NPV for both the randomly generated values of exogenous variables and the parameter values, as specified by the decision maker.
   - Repeat the step 3 and 4 again and again, to get a large number of simulated values of NPV.

This whole process of simulation analysis compels the decision maker to consider all the interdependencies and uncertainties characterizing the project. Thus, the viability of the project is determined on the basis of number of outcomes and the probabilities realized through a series of actions performed during the simulation analysis.



8.6 LET US SUM UP

In this unit we have discussed the following :

- Risk of an investment is the variance associated with its returns. Risk may be defined as the variation of actual cash flows from the expected cash flows
- The sources of risk in a project are :
  a. Project Specific Risk
  b. Competitive risk
  c. Industry-specific risk
  d. Market risk
  e. International risk
- Risk can be broadly classified into two categories : 1. Systematic Risk and 2. Unsystematic Risk.

- The methods for accounting for the risk in capital budgeting are :

a. Risk Adjusted Discount rate

b. Certainty Equivalent Method

c. Probability Method

d. Sensitivity Method

e. Decision Tree Analysis



8.7 FURTHER READING

1. P K Jain & M. Y Khan (2014); *Financial Management : Text, Problems and Cases.* Mcgraw Hill Education.
2. Prasanna Chandra (2011). *Financial Management : Theory and Practice*; McGraw Hill Education; 8 edition.
3. I.M Pandey(2010), *Financial Management*, Vikas Publishing House; 10th edition.



8.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q. 1 :

Risk may be defined as the variation of actual cash flows from the expected cash flows.

Ans to Q. 2 :

The sources of risk in a project are :

a. Project Specific Risk
b. Competitive risk
c. Industry-specific risk
d. Market risk
e. International risk

Ans to Q. 3 :

Risk can be broadly classified into two categories :

a. Systematic Risk and b. Unsystematic Risk

Ans to Q. 4 :

The risk-adjusted discount rate is based on the risk-free rate and a risk premium. Under this method, discount rate is adjusted in accordance with the degree of risk. That is, risk-premium rate is determined and added to the risk free rate otherwise used for calculating net present value.

Ans to Q. 5 :

The Sensitivity Analysis determines the viability of the project if some variables deviate from its expected value, such as investments or sales.



8.9 MODEL QUESTIONS

1. What do you mean by the term “Capital Budgeting” ?
2. Explain briefly the need for capital investment.
3. Discuss the significance of capital budgeting
4. What is risk ? Mention the different types of risks.
5. What are the different methods suggested for accounting for risk in Capital Budgeting ?
6. Explain any one of the following methods used in capital budgeting :
   a. Risk Adjusted Discount Rate method.
   b. Certainty Equivalent Approach
   c. Probability Approach
   d. Sensitivity Analysis
   e. Simulation Analysis
   f. Decision Tree Approach.

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UNIT - 9 : CAPITAL RATIONING

UNIT STRUCTURE

9.1 Learning Objectives

9.2 Introduction

9.3 Meaning and concept of Capital Rationing

9.4 Problem and Assumption of Capital Rationing

9.5 Objective of Capital Rationing

9.6 Types of Capital Rationing

9.7 Factors leading to Capital Rationing

9.8 Steps involved in Capital Rationing

9.9 Methods of Capital Rationing

9.10 Advantages of Capital Rationing

9.11 Disadvantages of Capital Rationing

9.12 Various Approaches to Capital Rationing

9.13 Let us Sum Up

9.14 Answers to Check Your Progress

9.15 Further Reading

9.16 Model Questions

9.1 LEARNING OBJECTIVES

After going through this unit, you will be able to :

- explain the meaning and concept of Capital Rationing
- outline the methods of Capital Rationing
- outline the types of Capital Rationing
- discuss the advantages and disadvantages of Capital Rationing
- explain the various approaches of capital rationing.

9.2 INTRODUCTION

This unit discusses about capital rationing, its concept and the various methods of it. Capital Rationing is a common practice in almost all companies because they have more profitable projects available for

investment as compared to the capital available. The unit also describes about the different approaches in capital rationing together with its advantages and disadvantages. The unit also focuses on the reasons behind capital rationing.

9.3 MEANING AND CONCEPT OF CAPITAL RATIONING

In simple words Capital Rationing is a form of Capital budgeting. In this we change the unlimited capital assumption of capital budgeting and thereby we try to choose projects with the finite capital that we have in hand. Capital rationing technique is used when a company has limited funds for investing in profitable investment proposals. It is of two types, Soft Capital Rationing and Hard Capital Rationing.

Capital rationing can be further defined as a process of distributing available capital among the various investment proposals in such a manner that a firm achieves maximum increase in its value.

It is the process of putting restrictions on the projects that can be undertaken by the company or the capital that can be invested by the company.

In other words, Capital Rationing refers to the situation where an organisation cannot undertake all the projects which are having positive net present value because of shortage of capital. It can also be mentioned as a strategy that firms implement to put certain limitation on the cost of new investments. It is also believed that Capital rationing is engaged when a firm has a low return in investment from its current investment due to high investment costs.



CHECK YOUR PROGRESS

Q.1. Define Capital rationing.

.....

.....

Q.2. Fill in the blanks :

a. Capital Rationing is a form of _____

b. _____ and _____ are two types of Capital Rationing

c. Capital Rationing is engaged when a firm has a _____ return on investment from its current investment due to high cost.

9.4 PROBLEM AND ASSUMPTION OF CAPITAL RATIONING

It is understood that if one desires to invest in all the projects they could all generate a profit and if a company is still relatively small and if one is unsure that if they can obtain the necessary financing, the reason is the problem of capital rationing. Wants and needs must be weighed and measured when there is scarcity of resources.

Assumptions :

The main assumption of capital rationing is that there are restrictions on capital expenditures either by internal financing or investment budget restrictions. Moreover firms do not have unlimited funds available to invest in the projects. Therefore it is assumed that capital rationing comes out with an optimal return on investment for the company by applying any mathematical technique like integer, linear or by normal trial and error process.

9.5 OBJECTIVES OF CAPITAL RATIONING

The objective of capital rationing is to select the group of projects that provides highest net present value as well as setting a higher ceiling on the cost of capital. The firm can therefore assume control over its resources and undertake fewer projects with a higher expected return on investment. In other words, the main objective is the maximisation of shareholders wealth.

9.6 TYPES OF CAPITAL RATIONING

Based on the source of restriction imposed on the capital, the two types of capital rationing are as follows :

a. Soft Capital Rationing
b. Hard Capital Rationing

Soft Capital Rationing : When a firm itself limits the amount of capital which is going to be invested in a given period of time, it is known as Soft Rationing. Moreover, soft rationing is a self-imposed restraint on capital spending. Risk is one possible reason why soft rationing must be imposed

in the business as any capital investment incurs loss. Other reasons in relation to this are as follows :

a. The promoter may have the notion that if they raise control of the too much capital they may lose control of the firm's operation. In the same way if a firm is constantly demonstrating high level of proficiency in generating returns, it may get a better valuation when raised in future.

b. The management may be worried if too much debt is raised it may increase the risk, raising the opportunity cost of capital.

c. Many Managers believe that taking decisions under imperfect market conditions i.e, they do not know about the opportunities that may be available the future. Thus, the firm must conserve some capital for the opportunity that may arise in future.

Because of firm's internal decision it is known as Soft Capital Rationing and companies usually implement this kind of rationing on a department basis.

Hard Capital Rationing : It is limitation on capital that is forced by factors external to the firm. Some medium sized companies are dependent on banks and institutional investors for their capital as many of them are not listed in stock exchange.

Again the companies large in size may face restrictions by existing investors such as banks who place a limit on debt amount that can be issued before they make a loan.

Hard rationing is the outcome of external constraints. An example of Hard Rationing-It is the capital expenditure limitations imposed by lenders upon borrowers.

Finally hard rationing arises because of market imperfections and because of limitations created by external parties.

9.7 FACTORS LEADING TO CAPITAL RATIONING

There are various reasons or factors leading to capital rationing, some of which are described below :

a. Increase in Cost of capital : The companies want to avoid the direct as well as indirect costs in order to issue new capital and

after a limit, the cost of raising further capital will increase because companies have limited assets to secure loans.

b. Lack of reliable forecast : This is another important factor which leads to capital rationing. Companies believe that the project's manager forecast a high cash flow estimates unreasonably so companies filter out the projects and a few are accepted.

c. Lack of managerial abilities and skilful employees might also be one of the reasons for capital rationing.

d. Unwillingness to broaden the equity share base for fear of losing control.

e. In order to avoid further risk, the company may be reluctant to take resort to financing by external equities.

Besides some internal factors there are some external factors which can lead to capital rationing, they are mentioned below :

a. Imperfection of capital market or deficiency in market information for making the required capital available.

b. Generally the government or the capital market itself will not supply unlimited amounts of capital to a company, even though the company has identified investment opportunities which would be able to produce the required return. Because of these reasons the company may not get sufficient amount of funds to carry out all the profitable projects.



CHECK YOUR PROGRESS

Q.3. Name the types of Capital Rationing ?

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Q.4. Name any two factors leading to Capital Rationing ?

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9.8 STEPS INVOLVED IN CAPITAL RATIONING

An effective capital rationing usually consists of the following steps :

a. Evaluating all the investment proposals using the capital budgeting techniques of Net present value (NPV), Internal Rate of Return (IRR) and Profitability Index (PI). The management sets maximum desired payback period and minimum desired rate of return for all the projects which are computed first then compared with the management's desired payback period and accounting rate of return.

b. The projects are required to be ranked and further analysed using Net present value (NPV) and Internal rate of return.

c. Select the project in descending order of the profitability till the capital budget exhaust based on a technique.

d. Selecting the best alternative by comparing the result of each technique with respect to total Npv.

9.9 METHODS OF CAPITAL RATIONING

The methods of capital rationing can be bifurcated in four steps. The steps are mentioned below :

a. Using the capital budgeting techniques of Net Present Value (NPV), Internal rate of return (IRR), and Profitability Index (PI) in evaluating of all the investment proposals.

b. Next ranking them based on various criterion i.e. NPV, IRR, and PI.

c. Selecting the projects in descending order of their profitability till the capital budget exhaust based on any technique.

d. Lastly, comparing the result of each technique with respect of total NPV and select the best alternative.



CHECK YOUR PROGRESS

Q.5. Give one assumption of Capital Rationing ?

.....

.....

Q.6. Mention the different methods of Capital Rationing ?

.....

.....

9.10 ADVANTAGES OF CAPITAL RATIONING

The various advantages of capital rationing are as follows :

- **Eradicating wastages :** Capital rationing prevents wastages of resources by not investing in each and every new project available for investment.
- **Budget :** Capital rationing introduces a sense of strict budgeting of corporate resources of a company. Whenever there is increase of capital in the form of more borrowings, the resources are properly handled and invested in profitable projects.
- **Fewer projects :** It ensures that less number of projects are selected by imposing capital restrictions which ultimately helps in keeping the number of active projects to a minimum and manage them all well.
- **Higher Returns :** Companies invest only in the projects where the expected return is high and eliminating projects with lower returns on capital, which is possible through capital rationing.
- **More stability :** As the company is not investing in every project, it helps in having adequate finances for tough times and ensures stability and increase in the stock price of the company.

9.11 DISADVANTAGES OF CAPITAL RATIONING

The various disadvantages of capital rationing are as follows :

- **Efficient Capital Markets :** Under efficient capital markets theory, all the projects that increase shareholders wealth or company's value should be invested therein. However by following capital rationing and investing in certain projects this theory is violated.
- **Small Projects :** Capital Rationing may lead to the selection of small projects rather than large scale investments.
- **Cost of Capital :** Capital rationing places a selective criteria on the cost of capital of the projects selected. In order to follow such restriction a firm has to be very accurate in calculating the cost of capital and any miscalculation could result in selecting a less profitable projects.
- **Intermediate Cash Flows :** While evaluating the projects, capital rationing does not add intermediate cash flows from a project. It bases its decision only on final returns from the project.

Even though capital rationing has disadvantages but it is followed widely in selecting investment projects.

9.12 VARIOUS APPROACHES TO CAPITAL RATIONING

Capital Rationing is a method which is used to select a project mix in a situation when the total funds actually available for investment are less than the total investment needed by all the projects under consideration. The two basic approaches used in Capital Rationing are as follows :

a. **Internal Rate of Return Approach :** This approach involves graphing project IRRs in descending order against the total investment. This graph is also known as Investment opportunities schedule. With the help of drawing a cost of capital line and then imposing a budget constraint, the group of acceptable projects can be determined. The main problem in this technique is that it does not guarantee the maximum return to the firm. It simply provides a satisfactory solution to capital rationing problems.

b. **Net Present Value Approach :** This approach is based on the use of present values to determine the projects that will maximise owner's

wealth. Firstly, the projects are ranked on the basis of IRRs and then evaluation of the present value of the benefits from each project is ascertained to determine the combination of projects with the highest overall present value.

Again any portion of the firm's budget that is not used does not increase the firm's value, so, the unused money can be either invested in marketable securities or can be returned to the owners in the form of cash dividends.



9.13 LET US SUM UP

After going through the unit we have come through the following :

In this unit we have discussed the following :

- Capital rationing is defined as a process of distributing available capital among the various investment proposals in such a manner that a firm achieves maximum increase in its value
- The main assumption of capital rationing is that there are restrictions on capital expenditures either by internal financing or investment budget restrictions.
- The objective of capital rationing is to select the group of projects that provides highest net present value as well as setting a higher ceiling on the cost of capital.
- There are two types of capital rationing :
  a. Soft Capital Rationing
  b. Hard Capital Rationing
- The factors leading to capital rationing are :
  a. Increase in Cost of capital
  b. Lack of reliable forecast
  c. Lack of managerial abilities and skilful employees
- The various advantages of capital rationing are as follows :
  a. Eradicating wastages
  b. Budget

c. Fewer projects
d. Higher Returns
e. More stability

- The various disadvantages of capital rationing are as follows:
  a. Efficient Capital Markets
  b. Cost of Capital
  c. Intermediate Cash Flows
- The two basic approaches used in Capital Rationing are as follows:
  a. Internal Rate of Return approach
  b. Net Present Value approach



9.14 FURTHER READING

1. S. K. Gupta & R. K. Sharma (2016), Financial Management : Theory and Practice, 8th Edition, Kalyani Publishers.
2. Arindam Banerjee 2016), Financial Management, 1st Edition; Oxford University Press.
3. M Y Khan (2017), Financial Management, 7th Edition McGraw Hill Education.
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5. R. M Shrivastava (2010),Financial Management And Policy , Himalaya Publishing House.



9.15 ANSWER TO CHECK YOUR PROGRESS

Ans to Q. 1 :

Capital Rationing is a form of Capital budgeting. Capital rationing technique is used when has limited fund for investing in profitable investment proposals.

Ans to Q. 2 :

a. Capital budgeting
b. Hard and Soft Capital rationing
c. Low

Ans to Q. 3 :

1. Hard Capital Rationing
2. Soft Capital Rationing

Ans to Q. 4 :

1. Increase in Cost of capital
2. Lack of reliable forecast

Ans to Q. 5 :

1. The main assumption of capital rationing is that there are restrictions on capital expenditures either by internal financing or investment budget restrictions.

Ans to Q. 6 :

1. Using the capital budgeting techniques of Net Present Value (NPV), Internal rate of return (IRR), and Profitability Index (PI) in evaluating of all the investment proposals.
2. Next ranking them based on various criterion i.e. NPV, IRR, and PI
3. Selecting the projects in descending order of their profitability till the capital budget exhaust based on any technique.
4. Lastly, comparing the result of each technique with respect of total NPV and select the best alternative.



9.16 MODEL QUESTIONS

1. Define Capital Rationing.
2. Give two advantages and two disadvantages of Capital rationing.
3. Explain the types of Capital Rationing.
4. What are the steps involved in capital rationing ?
5. Describe the various methods of Capital Rationing.
6. What are the different approaches of Capital Rationing ?
7. What are the assumptions of Capital Rationing ?
8. Mention the factors that lead to Capital Rationing.

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UNIT - 10 : WORKING CAPITAL MANAGEMENT

UNIT STRUCTURE

10.1 Learning Objectives
10.2 Introduction
10.3 Components of current assets and current liabilities
10.4 Concepts of working capital
10.5 Importance of Working capital management
10.6 Need for working capital
10.7 Determinants of working capital
10.8 Operating cycle
10.9 Approaches for working capital management
10.10 Estimation of working capital
10.11 Let Us Sum Up
10.12 Further Reading
10.13 Answers to Check Your Progress
10.14 Model Questions

10.1 LEARNING OBJECTIVES

After going through this unit, you will be able to :

- discuss the meaning and concept of working capital
- know the various components of working capital
- describe the objectives of working capital
- discuss the various approaches required for working capital
- outline the various determinants of working capital
- know the factors requiring consideration while estimating working capital.

10.2 INTRODUCTION

This unit discusses the concept of working capital together with its objectives. Every business needs funds for two purposes for its establishments and to carry out its day to day operations. Long term funds are required to create production facilities through purchase of fixed assets

such as land, building etc. Funds are also needed for the purchase of short term purposes of raw materials, wages, and other day to day expenses etc. these funds are working capital. The various determinants of the working capital are discussed in the unit. It also throws the impact on various factors requiring consideration while estimating working capital. The importance of working capital is also discussed in this unit.

10.3 COMPONENTS OF CURRENT ASSETS AND LIABILITIES

The term working capital refers to the gross working capital and represents the amount of funds invested in current assets. Thus, the gross working capital is the capital invested in total current assets of the enterprise.

The components of the current assets are as follows :

1. Cash in hand and bank balance.
2. Bills receivables.
3. Sundry Debtors
4. Short term loans and advances.
5. Inventories of stocks are Raw Materials, Work in progress, Stores and spares and finished goods.
6. Prepaid expenses
7. Temporary Investment of surplus funds
8. Accrued Incomes.

The components of current liabilities are as follows :

1. Bills payable.
2. Sundry creditors
3. Accrued or outstanding expenses
4. Short term loans, advances and deposits.
5. Dividends payable
6. Bank overdraft.
7. Provision for taxation



CHECK YOUR PROGRESS

Q.1. Define Working Capital.

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.....

Q.2. Give three components of current assets.

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Q.3. Give two components of current liabilities.

.....

10.4 CONCEPTS OF WORKING CAPITAL

In the words of Shubin, “Working capital is the amount of funds necessary to cover the cost of operating the enterprise.” Also, Circulating capital means current assets of a company that are changed in the ordinary course of business from one form to another, such as Cash to inventories, inventories to receivables etc. In simple words working capital refers to that part of the firm’s capital which is required for financing short term or current asset such as cash, marketable securities, debtors and inventories. It is also known as short term capital, circulating capital or revolving capital. There are basically two concepts of working capital :

a. Balance sheet concept.
b. Operating cycle or circular flow concept.

Now, this **balance sheet** concept has two interpretations of working capital :

1. Gross working capital : It is the capital invested in total current assets of the enterprise.
2. Net working capital : It is the excess of current assets over current liabilities, or Net working capital = Current assets – Current liabilities.

When the current asset exceeds current liabilities the working capital is positive and the negative working capital results when the current liabilities are more than the current assets.

Again, the above mentioned **operating cycle** refers to that part of firm's capital which is required for financing short term or current assets such as cash, marketable securities, debtors, and inventories.

The gross working capital concept is financial or going concern concept whereas net working capital is an accounting concept of working capital. These two concepts of working capital are not exclusive rather both have their own merits. The gross concept is sometimes preferred to the net concept of working capital for the following reasons :

1. It enables the enterprise to provide correct amount of working capital at the right time.
2. The gross concept of working capital is more useful in determining the rate of return on investment in working capital.
3. Every management is more interested in the total current assets with which it has to operate than the sources from where it is made available.

The net working capital is also important for the following reasons :

1. It is a qualitative concept which indicates the firm's ability to meet its operating expenses and short term expenses.
2. It is an indicator of the financial soundness of an enterprise.
3. It suggests the need for financing a part of the working capital requirements out of permanent sources of funds.

Rather gross and net concepts of working capital are important aspects of the working capital management. The net working capital may be suitable only for proprietory form of organisation such as sole-trader or partnership firm but the gross concept is very suitable to the company form of organisation.

10.5 IMPORTANCE OF WORKING CAPITAL MANAGEMENT

Working capital is the life blood and the nerve centre of a business. The circulation of blood is essential in the human body and as such working capital is also very essential to maintain smooth running of a business. The various importance's of working capital are as follows :

a. Solvency of the business : Adequate working capital helps in maintaining solvency of the business by providing the flow of production uninterruptedly.

b. Easy loans : A concern having adequate working capital, high solvency can arrange loans from banks and others on easy and favourable terms.

c. Goodwill : Sufficient working capital enables a business concern to make prompt payments and helps in creating and maintaining goodwill.

d. Cash discounts : Adequate working capital also enables concern to avail cash discounts on the purchases and hence it reduces costs.

e. The regular supply of raw materials is possible due to sufficient working capital.

f. Ability to face crisis : The Adequate working capital enables a concern to face business crisis in emergencies because during such periods there is much requirement of working capital.

g. Regular payment of salaries wages and other day to day commitments : Enough working capital enables regular payment of salaries wages and other day to day expenses which also raises the morale of its employees also increases their efficiency, and enhances production and profits.

h. High Morale : An environment of security, confidence, high morale and overall efficiency in a business can be created through adequacy of working capital.

i. Exploitation of favourable market condition : Only concerns with adequate working capital can exploit this condition such as purchasing its requirement in bulk when the prices are lower.

Finally, sufficiency of working capital enables a concern to pay quick and regular dividend to its investors as they are not under much pressure to plough back profits.

10.6 NEED FOR WORKING CAPITAL

The need for working capital cannot be overemphasised. The need for working capital arises due to the time gap between production and realisation of cash from sales. There is an operating cycle involved in the

sales and realisation of cash. There are time gaps in purchase of raw materials and production, production and sales and sales and realisation of cash.

Working capital is needed for the following purposes :

a. To pay wages and salaries

b. To incur day to day expenses and overhead costs such as fuel, power and office expenses etc

c. For the purchase of raw materials components and spares.

d. To meet the selling costs as packaging, advertising etc.

e. To provide credit facilities to the customers.

f. To maintain the inventories of raw materials, work in progress finished stock.

For need of working capital in a business, one has to study the business from various concerns. The amount needed as working capital in a new concern depends primarily upon its size. Greater the size of the business unit generally larger will be the requirements of working capital and keeps on increasing with the growth and expansion of business.

10.7 DETERMINANTS OF WORKING CAPITAL

The working capital requirements of a concern depends upon large number of factors such as size of business, the character of their operations, the length of production cycle and the state of economic situation etc. the other following factors generally influencing the working capital requirements are as follows :

1. **Nature or Character of business :** The requirement of working capital depends upon the nature of its business. Just like trading and financial firms require less investment in fixed assets but large amount of investments in current assets like inventories, cash etc as such the requirement of working capital is more than the public utility undertakings like electricity, water supply and railways need very limited working capital because they offer cash sales only and supply services. But the manufacturing firms require relatively sizable amount of working capital between these two extremes.

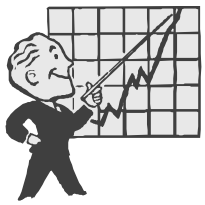
2. **Production policy :** The production should be kept steady by accumulating inventories during slack period and with a view to meet high demand during the peak season. If the policy is to keep production steady by accumulating inventories it will require higher working capital. The demand is subject to wide fluctuations due to seasonal variations and in such cases the requirements of working capital depend upon the production policy.
3. **Size of Business :** This requirement of a concern is directly influenced by the size of its business which may be measured in terms of scale of operations. Greater the size of business unit, generally larger will be the requirements of working capital. But however, in some cases even a smaller concern may need more working capital due to inefficient use of available resources.
4. **Seasonal variations :** When the raw material is not available to some industries they have to buy the raw materials in bulk during the season so as to ensure an uninterrupted flow and likewise a huge amount is blocked in the form of material inventories which gives rise to more working capital requirements.
5. **Manufacturing process :** In this factor the requirement of working capital increases in direct proportion to length of manufacturing process. Longer the period of manufacture, larger is the amount of working capital required and vice-versa. If the manufacturing process is longer than the raw materials and other supplies will be carried for a longer period and the cost of progressive increment of labour and service will also increase before the final product is obtained.
6. **Working Capital cycle :** In a manufacturing concern the working capital cycle starts with buying of raw materials and ends with the realisation of cash by the sale of finished products. This cycle involves purchasing, storing, service cost, debtors, and conversion of finished stock into sales and it continues so on. The longer the period of cycle larger is the requirement of working capital.
7. **Credit policy :** The requirement of working capital is considerably influenced by the firm's dealings with debtors and creditors. A concern purchasing its requirements on credit and selling its

product on cash requires lesser amount of working capital. Whereas the concern buying its requirements for cash and allowing credit to its customers shall need larger amount of working capital.

8. **Rate of stock turnover :** A firm having a high rate of stock turnover will need lower amount of working capital as compared to a firm having a low rate of turnover. For example : the precious stone dealers have to maintain a large variety of stocks and the movement of stock is very slow. Thus the working capital requirement of such a dealer shall be higher as compared to a provision store.

9. **Price level changes :** Generally the rising prices will require the firm to maintain larger amount of working capital as more funds will be required to maintain the same current assets. Some firms may be affected much while some others may not be affected at all by the rise in prices.

   Certain other factors like management ability, irregularities of supply, import policy, asset structure, importance of labour, banking facilities etc also influence the requirements of working capital.



CHECK YOUR PROGRESS

Q.4. Give two importance of Working Capital.

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Q.5. Mention three needs of Working Capital.

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10.8 OPERATING CYCLE

Working capital refers to that part of firm's capital which is required for financing short term or current assets such as cash, marketable securities debtors and inventories. Funds which are invested in current assets keep revolving fast and are easily converted to cash and this cash flow out again in exchange for other current assets. Therefore, it is known as revolving or circulating capital. The circular flow concept of working capital is based upon this operating or working capital cycle. The cycle starts with the purchase of raw material and other resources and ends with the realisation of cash from the sale of finished goods. It involves purchase of raw materials and stores, its conversion into stock of finished goods through work- in- progress progressive increment of labour and service costs, debtors and receivables and finally realisation of cash and the cycle continues again from purchase of raw materials and so on. The speed or time required to complete one cycle determines the requirements of working capital. The longer the period of cycle, larger is the requirement of working capital and vice-versa.Working capital cycle is one of the essential parameters to be recorded in working capital management.

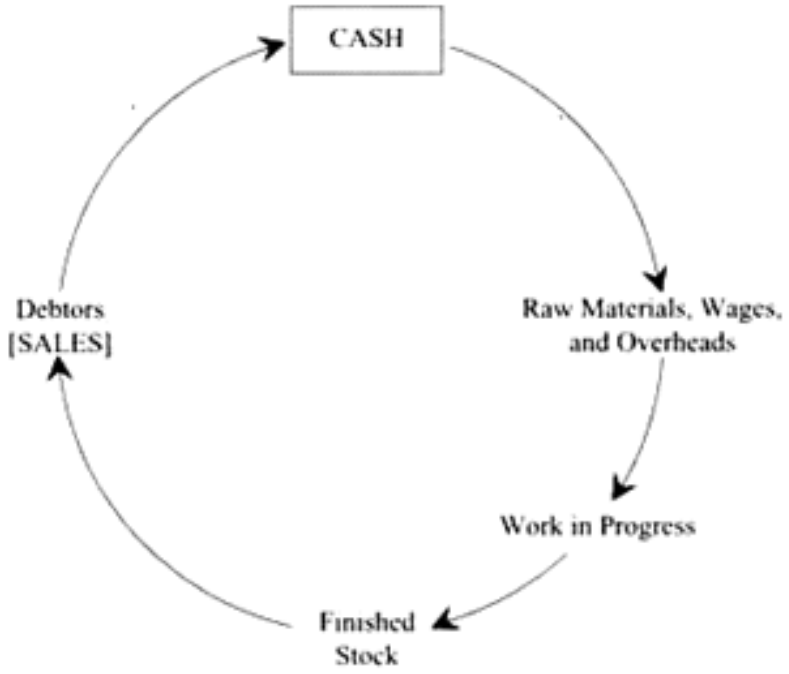


Fig 10.1 : Operating Cycle of Working Capital

10.9 APPROACHES FOR WORKING CAPITAL MANAGEMENT

There are three basic approaches for determining working capital management :

a. Matching or Hedging approach
b. Conservative approach
c. Aggressive approach.

Hedging or matching approach :

The term “Hedging” usually refers to two-off selling transactions of a simultaneous but opposite nature which counterbalance the effect of each other. According to this approach, the maturity of sources of funds should match the nature of assets to be financed. Therefore, it is also known as ‘matching concept’. The requirement of working capital in this approach is classified in two categories.

1. Fixed working capital which is the minimum amount required to carry out the normal business operation. It does not vary over time.
2. Temporary working capital which is required to meet special exigencies and it fluctuates over time.

Hedging approach suggests that the permanent working capital requirements should be financed with funds from long term sources while the temporary or seasonal working capital requirements should be financed with short term funds.

Conservative Approach :

This approach suggests that the entire estimated investment in current assets should be financed from long term sources and the short term sources should be used only for emergency requirements. The short term funds will be used only to meet emergencies. The various distinct features of this approach are as follows :

a. Liquidity is severally greater.
b. Risk is minimised and
c. The cost of financing is relatively more as interest has to be paid even on seasonal requirements for the entire period.

Aggressive Approach :

This approach suggests that the entire estimated requirements of current asset should be financed from short- term sources and even a part of fixed assets investments be financed from short term sources. The aggressive approach makes the finance-mix more risky, less costly and more profitable.



CHECK YOUR PROGRESS

Q.6. Mention two approaches for Working Capital Management ?

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Q.7. Write four determinants of Working Capital ?

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10.10 ESTIMATION OF WORKING CAPITAL

Working capital is the life blood of a business. No business can be successfully run without an adequate working capital. To avoid any shortage of working capital at once an estimate of working capital requirements is very necessary in advance so that arrangements can be made to procure the adequate working capital. A large number of factors have to be considered while estimating the working capital requirements. The following factors have to be taken into consideration while making an estimate of working capital requirements :

1. Total costs incurred on material wages and overheads.
2. The length of the production cycle i.e. the time taken for conversion of raw material into finished goods.
3. The length of time for which raw materials are to remain in stores before they are issued to production.
4. The length of sales cycle during which finished goods are to be kept waiting for sales.

5. The amount of cash required to pay day to day expenses of the business.
6. The average period of credit allowed to customers.
7. The average credit period expected to be allowed by suppliers
8. The average amount of cash required to make advance payments if any
9. Time-lag in the payments of wages and other expenses.



CHECK YOUR PROGRESS

Q.8. What is Operating Cycle ?

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Q.9. Mention one factor required for estimating working capital ?

a) .....

.....



10.11 LET US SUM UP

In this unit we have discussed the following :

- The term working capital refers to the gross working capital and represents the amount of funds invested in current assets. It is the amount of funds necessary to cover the cost operating the enterprise.
- The various importance's of working capital are as follows :
  a. Solvency of the business
  b. Easy loans
  c. Goodwill
  d. Cash discounts
  e. Ability to face crisis
  f. Regular payment of salaries wages
  g. Exploitation of favorable market condition

- Working capital is needed for the following purposes :
  a. To pay wages and salaries
  b. To incur day to day expenses and overhead costs such as fuel, power and office expenses etc
  c. For the purchase of raw materials components and spares.
  d. To meet the selling costs as packaging, advertising etc.
  e. To provide credit facilities to the customers.
  f. To maintain the inventories of raw materials, work in progress finished stock.
- The factors influencing the working capital requirements are :
  a. Nature or character of business policy
  b. Size of Business
  c. Seasonal variations
  d. Manufacturing process
  e. Working Capital cycle
  f. Credit policy
  g. Rate of stock turnover
- The volume of working capital depends on the amount blocked in current assets. These amounts are released over a time period and gradually changes shape from one item to another. This changing process rotates in a cyclical order. The length of the cycle or the time taken to rotate the cycle once is known as the working capital cycle or the operating cycle.
- There are three basic approaches for determining working capital management :
  a. Matching or Hedging approach
  b. Conservative approach
  c. Aggressive approach.



10.12 FURTHER READING

1. S. K. Gupta & R. K. Sharma (2016), Financial Management : Theory and Practice, 8th Edition, Kalyani Publishers.
2. Arindam Banerjee 2016), Financial Management, 1st Edition; Oxford University Press

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5. R. M Shrivastava (2010),Financial Management And Policy , Himalaya Publishing House.



10.13 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q. 1. :

The term working capital refers to the gross working capital and represents the amount of funds invested in current assets. Thus, the gross working capital is the capital invested in total current assets of the enterprise.

Ans to Q. 2. :

1. Cash in hand and bank balance.
2. Bills receivables.
3. Sundry Debtors

Ans to Q. 3. :

1. Bills payable.
2. Sundry creditors

Ans to Q. 4. :

1. Easy loans : A concern having adequate working capital, high solvency can arrange loans from banks and others on easy and favourable terms.
2. Ability to face crisis : The Adequate working capital enables a concern to face business crisis in emergencies because during such periods there is much requirement of working capital.

Ans to Q. 5. :

a. To pay wages and salaries
b. To incur day to day expenses and overhead costs such as fuel, power and office expenses etc.
c. To provide credit facilities to the customers.

Ans to Q. 6. :

a. Matching or Hedging approach

b. Conservative approach

Ans to Q. 7. :

1. Nature or character of business.
2. Working capital cycle.
3. Credit policy.
4. Price level changes.

Ans to Q. 8. :

Operating cycle : Funds which are invested in current assets keep revolving fast and are easily converted to cash and this cash flow out again in exchange for other current assets. Therefore it is known as revolving or circulating capital.

Ans to Q. 9. :

1. The length of the production cycle i.e. the time taken for conversion of raw material into finished goods.



10.14 MODEL QUESTIONS

1. Explain the various determinants of working capital.
2. What the various needs of working capital.
3. Describe the three approaches of working capital.
4. Name some factors essential for estimating the working capital
5. Describe the operating cycle.

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UNIT - 11 : CASH MANAGEMENT

UNIT STRUCTURE

11.1 Learning Objectives

11.2 Introduction

11.3 Meaning and concept of Cash and Cash management

11.4 Importance of Cash Management

11.5 Objectives of Cash Management

11.6 Motives for Holding Cash

11.7 Models for Determining Optimal Cash Needs

11.8 Cash Planning

11.9 Cash forecasting and Budgeting

11.10 Methods of Accelerating Cash Inflows

11.11 Methods of Slowing Cash Outflows

11.12 Cash Budget

11.13 Let us Sum Up

11.14 Further Reading

11.15 Answers to Check Your Progress

11.16 Model Questions

11.1 LEARNING OBJECTIVES

After going through this unit, you will be able to :

- discuss the meaning and concept of Cash and Cash Management
- outline the objectives of Cash Management
- describe the importance of Cash Management
- discuss the motives of Holding Cash
- explain the Concept of Cash planning, Cash forecasting and Budgeting
- explain the methods of cash inflow and outflow.

11.2 INTRODUCTION

Cash is one of the current assets of a business. To keep the business going, cash is needed at all times and sufficient cash is necessary for meeting its obligations. As because in case of any shortage of cash will hamper the operations of a concern. Cash is considered as one of the most unproductive of all the assets while current assets like inventory will help the business in increasing its earning capacity whereas cash in hand will not add anything to the concern. It is because of this that cash management has assumed much importance.

11.3 MEANING AND CONCEPT OF CASH AND CASH MANAGEMENT

In simple words Cash means only money in the form of currency (cash in hand). For Some Cash means both Cash in hand and Cash at bank. Some even take marketable securities too as part of cash which can be easily converted into cash. These viewpoints reflect the degree of freedom of the persons using the cash.

By the term ‘cash’ we mean coins, currency, cheques, draft, and deposits in banks. The broader view of cash includes near cash assets such as short term marketable securities and time deposits in banks.

Cash itself does not produce goods or services. It is a medium to acquire other assets. It is also considered as an asset which is used in manufacturing goods or providing services.

A business has to keep required cash for meeting various needs. The assets acquired by cash again help the business in producing cash. The goods manufactured are sold to acquire cash. A critical level of cash is required to be maintained by a firm as because if at a time it does not have sufficient cash with it, it will have to borrow from the market for reaching the required level. There remains a gap between cash inflows and cash outflows. Sometimes cash receipts are more than the payments or may be vice-versa at another time. A financial manager tries to synchronise the cash inflow and cash outflows.

Cash Management has assumed importance because it is the most significant of all the current assets. Cash is required to meet business

obligation. Cash Management deals with the Cash inflows and outflows, Cash flows within the firm, Cash balances held by the firm at a point of time.



CHECK YOUR PROGRESS

Q.1. Define Cash.

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.....

Q.2. Fill in the blanks :

a. Cash is one of the _____ assets of business.

b. Cash means both _____ and _____

c. Marketable securities are securities which can easily converted to _____

11.4 IMPORTANCE OF CASH MANAGEMENT

As discussed earlier, cash is one of the current assets of a business. It is the common denominator for all the other forms of current assets as well as current liabilities. Sundry debtors, inventories and so on are ultimately liquidated in the form of cash.

Cash management is one of the most significant components of working capital management. Effective management of cash is important in the sense that firm/companies need to meet their obligations on time. Failure to do so may earn a bad reputation for the company, in extreme cases brings the possibility of litigation and subsequent liquidation of the company.

Cash management is significant because of the following reasons :

- **Cash planning and management :** If the company keeps too much cash, the returns will be negligible. On the other hand, if the company lacks adequate cash reserve, it may fail to pay obligations on time. So,

proper synchronisation between cash inflows and outflows should be maintained at all time.

- **Maintenance of optimum cash balance :** The company should identify the level of optimum cash balance that it should maintain. The cost of maintaining excess cash vis-a vis the danger of keeping inadequate cash should be identified for determining the optimum cash balance.
- **Investment of excess cash :** Extra cash, which the company may not require immediately, should be invested in suitable financial instruments. This earns the company some return, rather than keeping it idle.

11.5 OBJECTIVES OF CASH MANAGEMEMNT

Companies devote time and energy to manage cash with other important objectives, which are as follows :

1) **Meet the payments schedule :** Default in making payments by the due date may bring serious trouble for the company. It may also result in a bad reputation. The company should maintain adequate cash balance to meet the payment schedule.
2) **Maintain credit rating :** Suppliers prefer companies with a good credit rating as customers. Timely payment to suppliers helps in improving the credit rating and receiving additional discounts from suppliers.
3) **Meet contingencies :** Firms also keep some cash balance to meet contingencies such as strikes sudden rise in demand and so on.

11.6 MOTIVES FOR HOLDING CASH

The various motives for holding cash are : Transactions motive, Precautionary motive, Compensation motive and Speculative motive. These motives are described below :

1) **Transaction Motive :** A firm needs cash for making transactions in the day to day operations. The cash is needed to make purchases, pay expenses, dividend etc. The cash needs arise due to the fact that there is no complete synchronisation between the cash receipts and cash payments. The transaction needs of cash can be predictable because the expected payments in the near future can be estimated.

If more cash is needed for payments than receipts, it may be raised through bank overdraft. And if more cash receipts are there it can be spent on marketable securities. The maturity of securities can be adjusted to the interest or dividend payments in future.

2) **Precautionary Motive :** A firm also keep certain amount of cash for meeting certain emergency or contingencies. Though cash inflows and outflows can be anticipated but there may be variations in these estimates. As for example : sudden increase in cost of raw materials, strikes, may need additional cash with a shorter notice; again a debtor who has to pay after seven (7) days may inform of his inability to pay, on the other hand a supplier who used to give credit for 20 days may not have the stock to supply. In these situations cash receipts will be less than expected and cash purchases will b more as cash payment may have to be made. These contingencies often arise in business. A firm should be in a position to raise finance at a short period so as to meet the contingencies.

   There are a couple of factors that influences the amount of cash balance to be held under the precautionary motive- first, the predictability of cash flows and second the availability of short-term credit. Increased unpredicta-bility in future cash flows increases the need to maintained a higher cash balance with precautionary motive.

3) **Compensation Motive :** A firm may also maintain some cash balance with a motive to compensate banks and other financial institutions for providing certain services and loans. This motive is termed as compensation motive.

4) **Speculative Motive :** This motive relates to holding of cash for investing in profitable opportunities as and when they arise. These opportunities do not come in a regular manner but it can be scientifically predicted. For example: the prices of share and debenture may be low at a time with an expectation that these will go up shortly. Similarly the prices of raw materials may fall and the firm may like to make purchases in the future when the price really declines. And these opportunities can be availed only when a firm has cash balance in hand. Therefore, these transactions are considered speculative because prices may not move in a direction in which we supposed it to be. The main motive of a firm is to make investment at times and not to indulge in speculative transaction.

11.7 MODELS FOR DETERMINING OPTIMAL CASH NEEDS

There are a number of mathematical models which have been developed to determine the optimal cash balance such as : Operating cycle model, Inventory model, stochastic model, and probability model. The objective of these models is to ensure that the firm should not keep extra cash and should also not face any cash shortage. However, the Inventory model as developed by William. J. Baumol and the stochastic model by M. H. Miller and Daniel Orr are mainly used to determine the optimum balance of cash and these are described below :

William J. Baumol's model

This model (An inventory theoretical approach) is basically used in inventory management but it has its application in determining optimal cash needs also. Baumol found similarities in inventory management and cash management. The economic order quantity (EOQ) model of cash management was developed by William J. Baumol in 1952. EOQ implies the optimum level of cash that a company should hold at a given point of time. As in case of inventory management an Economic Order Quantity (EOQ) involves trade off between carrying costs and ordering cost, similarly in case of optimal cash balance it involves the trade off between opportunity cost or holding cash (i.e. the interest foregone by not investing in financial securities) and the transaction cost (i.e. the cost of converting marketable securities into cash for example brokerage, taxes etc).

According to Baumol's model, the optimum cash balance is that point at which the transaction cost and the holding cost are lowest. The optimum cash balance can be determined by using the formula :

$$C \quad \sqrt{\frac{2UP}{S}} \qquad C = \sqrt{(2 \times U \times P/S)}$$

Where, C = Optimum Cash Balance, U = Annual cash disbursement, P = Fixed cost per transaction, S = Opportunity cost of one rupee per annum (or per month)

The model is based on the following assumptions :

a. The cash needs of the firm are known as certainity.
b. The holding cost is known with certainity and is constant.
c. The transaction cost remains constant.
d. The use of cash over the period of time is uniform.

Miller-Orr Model :

The Miller and Orr model overcomes the shortcomings of Baumol model. M.H Miller and Daniel Orr (A model of the Demand for Money) expanded on the Baumol model and developed Stochastic model for firms with uncertain cash inflows and cash outflows. The Miller Orr (MO) model aims towards determining the optimum cash balance level that minimizes the cost of cash management. The model may be described by the following equation :

$$C = bE(N)/t + iE(M)$$

Where, C = Total cost of cash management, b = Fixed cost per conversion, E(N) = Expected number of conversions, t = Number of days, i = The lost opportunity cost, E(M) = Average daily cash balance.

The MO model assumes that the cash balance fluctuates between the upper bound and the lower bound. According to the model, as the cash balance reaches upper bound, a part of the cash balance should be converted into marketable securities, by investing in them. On the other hand when the cash balance reaches the lower level, a part of marketable securities should be converted into cash to keep the cash balance at the optimum level.

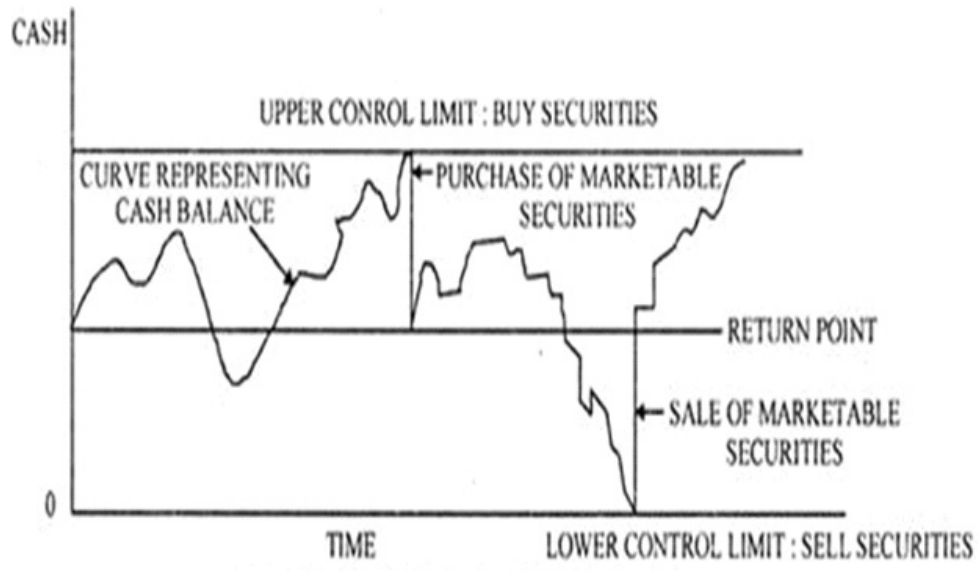


Fig 11.1 Miller Orr Model

CHECK YOUR PROGRESS

Q.3. Mention two objectives of Cash Management ?

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Q.4. What are the motives of Cash Management ?

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11.8 CASH PLANNING

Cash planning is a technique to plan and control the use of cash. A projected cash flow statement may be prepared based on the present business operations and anticipated future activities. The cash inflows from various sources may be anticipated and cash outflows will determine the possible uses of cash.

11.9 CASH FORECASTING AND BUDGETING

A Cash budget is the most important device for the control of receipts and payments of cash. A cash budget is an estimate of cash receipts and disbursements during a future period of time. It is a forecast of expected cash intake and outlay. Cash budget is an analysis of flow of cash in a business over a future, short or long period of time.

The short-term forecasts can be made with the help of cash flow projections. The finance manager will make estimates of likely receipts in the near future and the expected disbursement in that period. The estimates of cash flows can help the planners to make arrangements for cash needs even if it is not possible to make exact forecasts. At times, the expected cash receipts may fall short or payment may exceed and a financial manager should keep in mind the sources from where he will meet short-term needs. The long term cash forecasts indicate company's

future financial needs for working capital, capital projects etc. and is also essential for cash planning.

Both the short term and long term cash forecast may be made with the help of following methods :

a. Receipts and disbursements method.

b. Adjusted net income method.

1. **Receipts and Disbursement Method :** In this method the receipts and payments of cash are estimated. The cash receipts may be from cash sales, collections from debtors, sale of fixed assets, receipts of dividend, or other income of all the items, it is difficult to forecast sales. The sales may be on cash as well as credit basis. Cash sales will bring receipts at the time of sale while credit sales will bring cash later on. Any fluctuation in sales will disturb the receipts of cash. Payments may be made for cash purchases, purchase of fixed assets etc.

   This method is to be equalled over a short as well as long periods. Any shortfall in receipts will have to be met from banks or other sources. The payments are to be made by outsiders, so there may be some problem in finding out the exact receipts at a particular period. So, because of uncertainty the reliability of this method may be reduced.

2. **Adjusted Net Income Method :** This method has three sections-sources of cash, uses of cash and adjusted cash balance. It helps in projecting the company's need for cash at some future date and to see whether the company will be able to generate sufficient cash. The estimation of working capital movement becomes difficult because items like receivables and inventories are influenced by factors such as fluctuations in raw material costs etc. This method helps in keeping a control on working capital and anticipating financial requirements.

11.10 METHODS OF ACCELERATING CASH INFLOWS

Cash management will be successful only if cash collections are accelerated and cash disbursement as far as cash possible are delayed. The following methods of cash management will help :

Methods of accelerating cash inflows

1. Prompt payment by customers which is possible only by prompt billing. The customers must be promptly informed about the amount payable and the time by which it should be paid. Cash discount can also attract prompt payment by the customers.

2. Quick conversion of payment into cash is yet another method by which the cash inflows can be accelerated. An efficient cash management will be possible only if the time taken in deposits float is reduced and make the money available for use.

3. Decentralised collection system can accelerate collections, as it saves the mailing time and processing time as well and thus reduces the financial requirements.

4. Lock box system is another technique of reducing mailing processing and collecting time. Under this system the firm hires a post box in a post office and the parties are asked to send the cheques in that post box number. A local bank is authorised to operate the post box. This system ultimately expedites the collection process and avoids delays due to mailing and processing time at the accounting department. By transferring clerical function to the bank the firm may reduce its cost improves internal control and reduces the possibility of fraud.



CHECK YOUR PROGRESS

Q.5. Give the importance of cash management ?

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Q.6. What do you mean by cash planning ?

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11.11 METHODS OF SLOWING CASH OUTFLOWS

A company can keep cash by effectively controlling disbursements. By slowing down the payments the cash outflows can be controlled. It can be done by delaying on making payments on the last due date only. If the credit is for 10 days then payment should be made on 10th day only.

Again, by issuing drafts to the suppliers instead of cheques, company can delay payments. When a cheque is issued then the company will have to keep a balance in its account so that the cheque is paid, whenever it comes. But a draft is payable only on presentation to the issuer. It takes a number of days before it is actually paid .Some economy can be exercised on payroll funds also. It can be done by reducing the frequency of payments. If the payments are made weekly then this period can be extended to a month. The finance manager can also plan the issuing of salary cheques and disbursements.

Centralisation of payments i.e. cheques issued from the main office will take time for the cheques to be cleared through post. Also, an efficient use of cash is also possible by inter-bank transfers that mean if the company has account with more than one bank then it will help in avoiding excess amount in one bank. Again, float is a difference between the balance shown in company's cash book (bank column) and balance in pass book of the bank. Whenever a cheque is issued the balance at bank in cash book is reduced. Until the time the cheques are not presented to bank for payment there will be a balance in the bank. If the company can make the estimate correctly it can make use of this float.

11.12 CASH BUDGET

A cash budget is an estimate of cash receipts and disbursements of cash during a future period of time. A cash budget is an analysis of flow of cash in a business over a future short or long period of time. It is a forecast of expected cash intake and outlay. The cash budget pin points the period when there is likely to be excess or shortage of cash. Thus, a firm by preparing a cash budget can plan the use of excess cash and make arrangements for the necessary cash as and when required. Cash receipts from various sources are anticipated. The estimated cash collections for sales debts, bills receivables and other income and sale of investments will be taken into account. The amounts to be spent on purchase of materials,

payments to creditors, meeting various revenue and capital expenditure needs should be considered.

The cash budget should be co-ordinated with other activities of the business. The functional budgets may be adjusted according to the cash budget. The available funds should be fruitfully used and the concern should not suffer for want of funds.



CHECK YOUR PROGRESS

Q. 7. What are the models of optimal cash needs ?

a. .....

b. .....

c. .....

Q. 8. Define Cash forecasting and Cash Budgeting.

a. .....

b. .....



11.13 LET US SUM UP

After going through the unit we have come through the following :

- Cash Management deals with the Cash inflows and outflows, Cash flows within the firm, Cash balances held by the firm at a point of time.
- Cash management is significant because of the following reasons :
  a. Cash planning and management
  b. Maintenance of optimum cash balance
  c. Investment of excess cash
- The objectives of Cash Management are :
  a. Meet the payments schedule
  b. Maintain credit rating
  c. Meet contingencies

- The various motives of a firm are attributed as: Transactions motive, Precautionary motive, Compensation motive and Speculative motive.
- There are a number of mathematical models which have been developed to determine the optimal cash balance such as: Operating cycle model, Inventory model, stochastic model, and probability model.
- Cash planning is a technique to plan and control the use of cash.
- A cash budget is an estimate of cash receipts and disbursements during a future period of time.
- Methods of accelerating cash inflows are :
  a. Prompt payment by customers
  b. Quick conversion of payment into cash
  c. Decentralized collection system
  d. Lock box system
- A cash budget is an estimate of cash receipts and disbursements of cash during a future period of time. A cash budget is an analysis of flow of cash in a business over a future short or long period of time.



11.14 FURTHER READING

1. S. K. Gupta & R. K. Sharma (2016), Financial Management: Theory and Practice, 8th Edition, Kalyani Publishers.
2. Arindam Banerjee 2016), Financial Management, 1st Edition; Oxford University Press.
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11.15 ANSWER TO CHECK YOUR PROGRESS

Ans to Q. 1. :

Cash means only money in the form of currency (cash in hand). It is needed at all times to keep the business going. Cash is one of the current assets of a business.

Ans to Q. 2. :

a. Current

b. Cash in hand and Cash at Bank

c. Cash

Ans to Q. 3. :

1. Meet the payment schedule
2. Maintain credit Rating

Ans to Q. 4. :

1. Transaction Motive
2. Precautionary Motive

Ans to Q. 5. :

1. Maintenance of optimum cash Balance
2. Investment of excess cash

Ans to Q. 6. :

Cash planning is a technique to plan and control the use of cash. A projected cash flow statement may be prepared based on the present business operations and anticipated future activities.

Ans to Q. 7. :

1. Operating Cycle Model
2. Inventory Model
3. Stochastic Mo

Ans to Q. 8. :

A cash budget is an estimate of cash receipts and disbursements during a future period of time. It is a forecast of expected cash intake and outlay. Cash budget is an analysis of flow of cash in a business over a future, short or long period of time.



11.16 MODEL QUESTIONS

1. Define Cash.
2. What do you understand by Cash Management ? How can it be undertaken ?
3. Name various motives for holding cash
4. Define cash budget.
5. What are the objectives of cash management ?
6. What is the importance of cash management ?
7. What are the methods of cash management ? Explain.
8. What do you mean by cash planning ?

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UNIT - 12 : INVENTORY MANAGEMENT

UNIT STRUCTURE

12.1 Learning Objectives
12.2 Introduction
12.3 Meaning and concept of Inventory
12.4 Characteristics of Inventory
12.5 Objective of inventory Management
12.6 Role of Inventory in working Capital
12.7 Purpose of Inventory
12.8 Cost associated with inventories
12.9 Inventory Management Techniques
12.10 Importance of Inventory Management Techniques
12.11 Let us Sum Up
12.12 Further Reading
12.13 Answers to Check Your Progress
12.14 Model Questions

12.1 LEARNING OBJECTIVES

After going through this unit, you will be able to :

- state the meaning and concept of Inventory
- outline the characteristics of Inventory
- discuss the role of inventory in working capital
- discuss the cost associated with inventories
- explain the various tools and techniques of inventory management
- know the importance of inventory management techniques

12.2 INTRODUCTION

This unit discusses the concept of inventory together with its nature and importance. This unit will help us to know the role of inventory in working capital. In addition to this, the unit will discuss about various inventory techniques like ABC analysis, VED analysis, Determination of Economic Order Quantity etc.

In this unit we shall also discuss the concept of various cost associated with techniques.

12.3 MEANING AND CONCEPT OF INVENTORY

In simple words inventories are probably the most strategic component in the structure of working capital of many of the business enterprises. It constitutes the major component of current assets in many business enterprises, especially the manufacturing concerns.

Every enterprises needs inventory for smooth running of its activities. It is also a link between production and distribution processes. The investment in inventories constitutes the most significant part of current assets or working capital in most of the undertaking. The unforeseen fluctuations in demand and supply of goods also necessitate the need for inventory. The purpose of inventory management is to ensure availability of materials in sufficient quantity as and when required and also to minimise investment in inventories.

Let us discuss some definition of inventory from dictionary and other general definitions :

The meaning of inventory is an itemized list of current assets as

1. a catalogue of the property of an individual or estate;
2. a list of goods on hand. Inventory is the collection of any item or resource used in an organisation.

The dictionary meaning of inventory is ‘stock of goods or a list of goods.’ In accounting language it may mean stock of finished goods only, and in a manufacturing concern it may include raw materials, work in progress and stores etc. In retail companies, inventories are carried for immediate sale to customers. And in service oriented companies, inventory generally refers to the material to be sold and the supplies necessary to manage the service.

A set of policies and controls is followed by the organisation to monitor the issues like :

- Determining the current levels of inventory
- Determining the levels of inventory that should be maintained
- Determine when stock should be replenished
- Determining the size of each other to replenish the inventory.

Therefore, a proper planning of purchasing, handling, storing and accounting should form a part of inventory management.



CHECK YOUR PROGRESS

Q.1. Define Inventory.

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Q.2. Fill in the blanks :

a. Inventory Management is another _____ element of working capital.

b. Investment in _____ constitutes the most significant part of current assets.

c. Inventory is a link between _____ and _____Tprocesses.

12.4 CHARACTERISTICS OF INVENTORIES

To understand the meaning of the word inventory we may study it from the usage side or from the side of point of entry in the operations. It includes the following things :

a. Raw material form a major input into the organisation so as to carry out the production process uninterruptedly. The quantity of raw materials required will be determined by the rate of consumption and the time required for replenishing the supplies.

b. Secondly the work in progress is that stage of stocks which are in between raw materials and finished goods. It depends upon the time taken in the manufacturing process. The more the time taken in manufacturing the more will be the amount of work in progress.

c. Consumables are the materials which are needed to smoothen the process of production and these do not directly enter production but they act as catalysts etc.

d. Finished goods are the goods which are ready for consumers. The stock of finished goods provides a buffer between production and market. The main purpose of maintaining inventory is to ensure proper supply of goods to consumers.

e. Spares also form a part of inventory, and stocking policies of spares are different from industry to industry. The costly spares parts like engines maintenance spares etc are rather kept for further use and are not discarded.

12.5 OBJECTIVE OF INVENTORY MANAGEMENT

The main objectives of inventory management are operational and financial. Operational means that the materials and spares should be available in sufficient quantity so that the work is not disrupted for want of inventory. The financial objective means that investments in inventories should not remain idle.

The basic objective of keeping a supply of inventory and effectively managing it are the following :

a. **To allow flexibility in production scheduling :** A stock of inventory relieves the strain on the production system. Wherever the set-up cost is high, companies prefer to keep a large inventory so that the set-up cost is minimised.

b. **To meet variation in product demand :** The demand for the product is not known beforehand always, so in case of sudden variation in demand the ready inventory comes handy in meeting them.

c. **To maintain independence of operation :** The number of set-ups or the cost of production can be reduced when the inventory is ready in the work station. So, independence of workstation is desirable to reduce the number of set-ups.

d. **To keep a buffer stock in case of deviation in raw material delivery time :** There can be loss of production due to delay in delivery of raw material by the supplier, in such a case, the company may keep a buffer stock in order to avoid stoppage of production line and loss of earning. Other objectives of inventory management are as follows :

1. To avoid both over-stocking and under-stocking of inventory.
2. To maintain investments in inventories at the optimum level as required by the operational and sales activities.
3. To eliminate duplication in ordering or replenishing stocks. This is possible with the help of centralising purchases.
4. To minimise losses through deterioration, pilferage, wastages etc
5. To ensure right quality goods at reasonable prices. Suitable quality standards will ensure proper quality of stocks.
6. To facilitate furnishing of data for short-term and long-term planning and control of inventory.
7. To keep material cost under control so that they contribute in reducing cost of production and overall costs.

12.6 ROLE OF INVENTORY IN WORKING CAPITAL

Inventories are probably the most strategic component in the structure of working capital of many of the business enterprises. Inventory constitutes the major component of current assets in many business enterprises, basically the manufacturing concerns. Thus, it is very important to have proper control and management of inventories.

Inventory provides a cushion for future price fluctuations. In the area of working capital the efficient control of inventory is one of the most serious issues to the manufacturing concerns, because a large portion of current assets of companies are blocked in inventories. The turnover of working capital is largely governed by the turnover of inventories. Thus, for maximising the value of the company, an efficient inventory management is important.

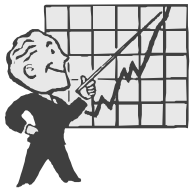
A proper inventory control not only helps in solving the acute problem of liquidity but also increases profits and causes substantial reduction in the working capital of the concern.

12.7 PURPOSE OF INVENTORY

Every business enterprise has to maintain a certain level of inventories to facilitate uninterrupted production and smooth running of the business. In case of shortages, the firm has to buy as soon as it receives orders. It

means loss of time and delays in execution of orders which may sometime lead to loss of customer and business as well. In order to reduce ordering costs and availing quantity discounts, a firm has to maintain inventories. There are basically three purposes of holding inventories :

The transaction motive facilitates continuous production and timely execution. The precautionary motive necessitates the holding of inventories for meeting the unpredictable changes in demand and the speculative motive induces to stock inventories for taking the advantage of price fluctuations, quantity discounts etc.



CHECK YOUR PROGRESS

Q.3. Give two objectives of Inventory Management.

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Q.4. Mention three main purposes of holding inventories.

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12.8 COST ASSOCIATED WITH INVENTORIES

Inventories block the firm's funds and incurrence of capital and other costs. Excess inventory may lead to additional working capital requirement ultimately increasing the cost. The various costs and risks involved in holding inventories are as follows :

- **Holding Cost :** This broad category includes the costs for storage facilities, insurance, handling, breakage, pilferage, depreciation, taxes and the opportunity cost. It is observed that high holding costs have a tendency to favour low inventory levels and frequent replacement.
- **Ordering Cost :** Ordering cost includes the managerial and clerical cost needed to prepare the purchase and production order. It includes

all the overhead cost details such as floating tenders inviting quotations, maintaining record and so on.

- **Capital Cost :** The firm has to arrange for additional funds to meet the cost of inventories which can be arranged either from own resources or from outsiders. In both the situations the firm incurs a cost. In the first case there is opportunity cost and in the later the firm has to pay interest to the outsiders.
- **Set-up Cost (Production change) :** It is often seen that different products need different set-ups to initiate the production. It includes arrangements of necessary equipment, filing documentation, changing previous moulds etc.
- **Shortage Cost :** Stoppage of production and cancellation of orders may result in loss of opportunity. These are referred as shortage costs. It is not easy to measure the exact quantification of such costs.

12.9 INVENTORY MANAGEMENT TECHNIQUES

Companies follow an inventory system that defines the operating structure and policies for maintaining and controlling goods to be stocked. The system tracks the suppliers and flow the commodities end-to-end. Also, if any error creeps in during the execution process the system should be able to identify and rectify the same.

The two models : fixed order quantity models (for eg- EOQ) and Fixed time period models. The re-order takes place on reaching the stock level at some minimum in case of fixed order models and in case of fixed time models the re-order takes place at a regular time interval.

EOQ is the quantity fixed at the point where the total cost of ordering and the cost of carrying the inventory, will be the minimum. If the quantity of purchases is increased the cost of ordering decreases, while the cost of carrying increases. But here the total of both the costs should be kept at minimum.

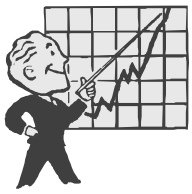
EOQ may also be worked out mathematically by using the following formula :

EOQ = $\sqrt{}$(2AB/C), where,

A = Annual units consumed

B = Buying or ordering cost

C = Cost of carrying one unit expressed as percentage.



CHECK YOUR PROGRESS

Q.5. Mention two costs associated with inventories.

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Q.6. What are the tools and techniques of inventory management ?

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12.10 IMPORTANCE OF INVENTORY MANAGEMENT TECHNIQUES

Effective inventory management requires an effective control system, for inventories. The problem of liquidity can be solved by proper inventory control and also increases profit and causes substantial reduction in the working capital of the concern. The main tools of inventory management and control are :

a. Determination of stock levels.

b. Selecting a proper system of ordering for inventory

c. Determination of Economic order quantity

d. ABC analysis

e. VED analysis

f. Classification and codification of inventories

g. Preparation of inventory reports, etc

- **Determination of stock levels :** An efficient inventory management requires that a firm should maintain an optimum level of inventory where inventory costs are the minimum and at the same time there is no stock-out which may result in loss of sale or stoppage of production. The various levels are Minimum level, re-ordering level, Maximum level, Danger level, Average stock level, Determination of safety stocks.

- **Ordering system of Inventory :** The main problem of inventory is to decide the re-order point. The re-order point is the inventory unit quantity that triggers the purchase of a predetermined amount of replenishment inventory.

- **Economic Order Quantity :** The quantity to be purchased must be neither small or big, because costs of buying and carrying materials are very high.EOQ is the size of the lot to be purchased which is economically viable. In determining economic order quantity it is assumed that cost of managing inventory is made up solely of two parts, i.e. ordering cost and carrying costs.

- **ABC analysis :** The materials are divided into a number of categories for adopting a selective approach for material control. Under ABC analysis the materials are divided into three categories i.e. A.B.C. It is seen that almost 10% of the items contribute to 70% of value of consumption; this category is known as 'A' Category. About 20% of items contribute 20 percent of value of consumption and this is known as category 'B'. And category 'C' covers about 70% of items of materials which contribute only 10% of value of consumption.

- **VED analysis :** This analysis is generally used for spare parts. Requirement of spare parts is different from that of materials. The demand for spares depends upon the performance of the plant and machinery. Spare parts are classified as vital (V), essential (E) and desirable (D). The stocking of D types of spares can be avoided at times, whereas E type of spares can be kept at low figures. But V types of spares are necessary for smooth functioning and non-availability of it may cause havoc in the organisation.

- **Codification of inventories :** For proper recording and control of inventory, a proper classification and codification of various types of material is necessary. The inventories should be first classified and then code numbers should be assigned which may help in their

identification. This is useful not only for large concern but also small concerns. If there is any problem in classification it may lead to reduction in production. The codification helps in maintaining secrecy of description.

- **Inventory Reports :** By preparing periodical inventory reports the management can have effective inventory control and take corrective actions wherever necessary.

Likewise there are many more tools and techniques in relating to inventory management which may help in reduction of cost control and smooth functioning of the organisation. These tools and techniques play a very important role in smooth functioning of the organisation.



CHECK YOUR PROGRESS

Q.7. What is EOQ ?

.....

.....

Q.8. What is the basic purpose of holding inventory ?

a. .....

b. .....



12.11 LET US SUM UP

After going through the unit we have come through the following :

- Inventory is an itemized list of current assets as :
  1. a catalogue of the property of an individual or estate;
  2. a list of goods on hand. Inventory is the collection of any item or resource used in an organisation.
- The basic objective of keeping a supply of inventory and effectively managing are :
  a. To allow flexibility in production scheduling

b. To meet variation in product demand
c. To maintain independence of operation
d. To keep a buffer stock in case of deviation in raw material delivery time

- There are basically three purposes of holding inventories:
  1. The transaction motive facilitates continuous production and timely execution
  2. The precautionary motive necessitates the holding of inventories for meeting the unpredictable changes in demand and
  3. The speculative motive induces to keep inventories for taking the advantage of price fluctuations, quantity discounts etc.
- The various costs and risks involved in holding inventories are as follows :
  a. Holding Cost
  b. Ordering Cost
  c. Capital Cost
  d. Set-up Cost (production change)
  e. Shortage Cost
- The tools of inventory management and control are :
  a. Determination of stock levels.
  b. Selecting a proper system of ordering for inventory
  c. Determination of Economic order quantity
  d. ABC analysis
  e. VED analysis
  f. Classification and codification of inventories
  g. Preparation of inventory reports



12.12 FURTHER READING

1. S. K. Gupta & R. K. Sharma (2016), Financial Management : Theory and Practice, 8th Edition, Kalyani Publishers.
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12.13 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q. 1. :

The meaning of inventory is an itemized list of current assets as 1. a catalogue of the property of an individual or estate; 2. a list of goods on hand. Inventory is the collection of any item or resource used in an organisation.

Ans to Q. 2. :

a. Crucial
b. Inventories
c. Production and Distribution

Ans to Q. 3. :

a. To meet variation in product demand.
b. To minimise losses through deterioration, pilferage, wastages etc.

Ans to Q. 4. :

a. Transaction Motive
b. Precautionary Motive
c. Speculative Motive

Ans to Q. 5. :

a. Ordering Costs and
b. Capital Costs

Ans to Q. 6. :

a. Determination of stock levels.
b. Selecting a proper system of ordering for inventory
c. Determination of Economic order quantity
d. ABC analysis
e. VED analysis

Ans to Q. 7. :

EOQ is the quantity fixed at the point where the total cost of ordering and the cost of carrying the inventory, will be the minimum. If the quantity of purchases is increased the cost of ordering decreases, while the cost of carrying increases. But here the total of both the costs should be kept at minimum.

Ans to Q. 8. :

The basic purposes of holding of inventories for meeting the unpredictable changes in demand and the speculative motive induces to keep inventories for taking the advantage of price fluctuations, quantity discounts etc.



12.14 MODEL QUESTIONS

1. What is inventory ?
2. Mention the objectives of Inventory Management ?
3. What are the various characteristics of inventory management ?
4. What are the different costs associated with inventory management ?
5. Explain the tools and techniques of inventory management.

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UNIT - 13 : RECEIVABLES MANAGEMENT

UNIT STRUCTURE

13.1 Learning Objectives

13.2 Introduction

13.3 Meaning of Receivables

13.4 Factors influencing the Size of Receivables

13.5 Objective of Receivables Management

13.6 Cost Associated with Maintaining Receivables

13.7 Credit policy Variables

13.8 Evaluation of credit policy

13.9 Forecasting the receivable

13.10 Let us Sum Up

13.11 Further Reading

13.12 Answers to Check Your Progress

13.13 Model Questions

13.1 LEARNING OBJECTIVES

After going through this unit, you will be able to :

- discuss the meaning of receivables
- explain the factors influencing the size of receivables
- outline the objectives of receivable management
- discuss the cost associated with maintaining receivables
- explain the credit policy variables
- know the factors helping in forecasting receivables

13.2 INTRODUCTION

This unit discusses the concept of receivables. Receivables constitute a significant portion of current assets of a firm. But, for this investment in receivables a firm has to incur certain costs. And it has a risk of bad debts also. Therefore a proper control and management of receivables is necessary. This unit mentions about the proper definition of receivables,

also the objectives and the various costs associated with the receivables. It explains the dimensions of receivables management. The unit also specifies that the size of the receivables can be forecast with the help of various factors which are described in details in the chapter ahead.

13.3 MEANING OF RECEIVABLES

In simple words, receivables represent amount owed to a firm as a result of sale of goods or services in the usual course of business. Receivables form a part of current assets of a firm. These are also known as Trade receivables, accounts receivables, or book debts. The period of credit and the extent of receivables depend on the credit policy followed by the firm. Every firm has a dream of achieving greater heights and to face the competition in the world of business, at any point of time. So, the main purpose of maintaining or investing in receivables is to meet competition and to increase the sales and profit.



CHECK YOUR PROGRESS

Q.1. Define Receivables.

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Q.2. Fill in the blanks :

a. Receivables are also known as _____

b. Risk of _____ is involved in receivable management

c. One of the cost associated with receivable management is _____

13.4 FACTORS INFLUENCING THE SIZE OF RECEIVABES

The factors which influence or affect the size of receivables directly or indirectly are as follows :

1. **Size of credit sales :** The size of receivables can be increased or decreased by the volume of credit sales which is considered as one of the important factor. It can be implied that if an organisation sells

only on cash basis as in the case of Bata shoe Company then there will be no receivables. In case of credit sales out of the total sales, if the proportion of credit sale is of high receivables will also be high and if the figure of credit sale is less than the receivables will also be less.

2. **Credit policies :** A firm with a conservative pattern of credit policy will have a low size of receivables while in case of a firm with a liberal credit policy the size of the receivables will be more. If collections are prompt then even if credit is liberally extended the size of receivables will remain under control. And there is always a possibility of bad debt in case the receivables remain outstanding for a longer period.

3. **Terms of trade :** This is yet another important factor on which the size of receivables depends. The period of credit allowed and the rates of discount given are linked with receivables. If the credit period allowed is more, then receivables is more. The terms of trade once allowed cannot be changed without adversely affecting sales opportunities.

4. **Expansion plans :** When a concern wants to expand its activities, it will have to enter new markets. To attract more of customers the firm will give incentives in the form of credit facilities which can be reduced once it gets permanent customers. In the early stages of expansion the credit facilities provided is more which is essential for increasing sale and hence size of receivables will be more.

5. **Relation with profits :** When sales increase beyond a certain level the additional costs incurred are less than increase in revenues. It is advantageous to increase sales because it will ultimately bring more profits. The size of receivables increases with increase in profits.

6. **Credit collection efforts :** Efforts should be made in order to give periodical reminders to the customers if they fail to pay in time. And if adequate attention is not paid towards credit collection then the concern can land itself in a serious financial problem. An efficient credit collection method will reduce the size of receivables or vice-versa.

7. **Habits of customers :** The size of receivables is also related with the paying habits of customers. The customers may be in the habit of delaying payments even though they are financially sound. The concern should remain in touch with the customers and should make the customers realise the urgency of the firm's needs.

13.5 OBJECTIVE OF RECEIVABLE MANAGEMENT

The main objective of receivable management is to take a sound decision as regards investment in debtors. Receivables management is the process of making decision relating to investment in trade debtors. It is seen that certain investment in receivables is necessary to increase the sales and the profits of a firm. But it is also found that such investment in the receivables involves cost consideration also. There is also risk of bad debts too.

The other important reason of maintaining or investing in receivables is to meet competition and to increase the sales and profit. Again a sound managerial control requires proper management of liquid assets and inventory and these assets are a part of working capital of the business. It is already mentioned that the receivables result from credit sales. A concern is required to allow credit sales in order to expand its sales volume as the increase in sales is also essential to increase profitability.

13.6 COST ASSOCIATED WITH MAINTAINING RECEIVABLES

The allowing of credit to customers means giving of funds for the use of customers. For maintaining receivables the following costs can be incurred by the concern :

1. **Cost of Financing Receivables :** The customers are allowed to use the capital of the concern, only when the goods and services are provided on credit. The receivables are financed from the funds supplied by shareholders for long term financing and through retained earnings.
2. **Cost of collection :** For receivable management, a proper collection of receivables is essential. The customers who do not pay the money on time are sent reminders for early payments. Sometimes some persons are sent for collecting the amount and in some cases legal recourse are necessary to be taken for collecting receivables. All these costs required to be incurred by a concern are known as collection costs.
3. **Bad debts :** Sometimes some customers fail to pay the amounts due and such amounts are known as bad debts. Now at times a concern may be able to reduce bad debts through efficient collection machinery, but cannot rule out all together.

13.7 CREDIT POLICY VARIABLES

The most important factor that determines the amount of account receivables is the credit policy followed by the firm. This factor is controllable by the finance manager. The terms of sale, the quality of the customer and the collection efforts and so on, are part of the credit policy. Credit policy consists of a set of rules used for regulation of credit terms. Merchants who bring in large volume of sales, and particularly those engaged in wholesale business approach the company for seeking credit terms. Credit is the time lag allowed by the supplier to the buyer for payment of goods sold. To grant appropriate credit limit to each such customer, it is necessary to evolve a procedure for evaluation of the customers. In sanctioning the credit limit factors such as the merchant's assets, selling capacity bank reference and past dealings are considered. Credit terms of each customer should be reviewed every year, and sanction should be renewed with appropriated modification if needed. In reviewing the credit policy, a company may consider extending the credit period or offering cash discount facility with a view to increasing the sales demand for the company's products.

A major cost of extending the credit period is the cost of financing the additional investment blocked by the extended credit facility. Other costs include increase in costs of account maintenance and risk of bad debts.



CHECK YOUR PROGRESS

Q.3. Mention the objectives of Receivables.

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Q.4. What are the factors involving the size of variables.

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13.8 EVALUATION OF CREDIT POLICY

Evaluation of credit policy after formulation is very important. It is necessary to find out the credit worthiness of customers. The following are the ways to formulate the same.

a. **Collecting Credit information :** The foremost step will be to gather credit information about the customers. This information should be such that proper analysis about the financial position of the customer is possible. The credit information will surely help in improving the quality of receivables but the cost of collecting information should not increase the reduction of bad debts losses.

   The information may be available from financial statements, credit rating agencies, reports from banks, etc. The balance sheet will help in finding out short term and long term position of the concern. Similarly the income statement will show the profitability position of the concern. A proper analysis of financial statements will be helpful in determining the creditworthiness of customers. The credit rating agencies supply information about various concerns through sources and keep the information up to date.

   Credit information may be available with banks too. The banks have their credit departments to analyze the financial position of a customer. The credit limit allowed, frequency of amount deposited etc may be also help in knowing about the customers. In case of old customers, business's own records may help to know their credit worthiness. The frequency of payments, cash discounts availed etc. may help to form an opinion about the quality of credit.

b. **Credit Analysis :** After the information is gathered, the finance manager should analyze and find out the credit worthiness of the potential customers and also see that whether they satisfy the norms of the concern or not. This analysis will determine the degree of risks involved, the capacity of the customer to borrow and their willingness to pay.

c. **Credit Decision :** After analyzing the creditworthiness of the customer, the finance manager has to take decision whether the credit is to be extended or not. It is only in marginal cases that decision of credit becomes difficult to be made. In such cases the benefit of

extending the credit should be compared to the likely bad debt losses and then a decision should be taken. Various alternative facilities must be given to the customers who are below the company's credit standards rather than out rightly refusing them. They must be allowed to pay on delivery of goods, invoices must be sent through banks etc. Such a course may help in retaining the customers at present.

d. **Financing Investments in Receivables :** Account receivable block a part of working capital. Efforts should be made that funds are not tied up in receivables for longer periods. The finance manager should make efforts to get the receivables financed so that working capital needs are met in time.

The banks allow raising of loans against security of receivables. The quality of receivables will determine the amount of loan. The bank will accept receivables of dependable parties only. Another method of getting funds against receivables is their outright sale to the bank. The bank will credit the amount to the party after deducting discount and will collect the money from the customers later.

13.9 FORECASTING THE RECEIVABLES

A concern should be very clear about its credit policies as to the size of the receivables on the basis of present policies. This is an important estimation which will help the concern in planning its working capital. Even though it is not possible to forecast the exact receivables in the future but some estimation is possible on the basis of past experience and credit policies etc. There are some factors which will help in forecasting receivable, they are discussed below :

1. **Credit Period allowed :** The ageing of receivables is helpful in forecasting. The size of the receivables will be higher depending on the period of amount due. There will be increase in profits with the increase in receivables and that leads to increase in costs too. The bad debts and collection expenses will also be more. And if credit period is less then the size of the receivables will also be less.
2. **Effect of Cost of goods sold :** Sometimes an increase in sales results in decrease in cost of goods sold. The increase in sales will also increase the amount of receivables and the estimate for sales will enable the estimation of receivables too.

3. **Forecasting Expenses :** The receivables are associated with a number of expenses. These expenses are administrative expenses on collection of amounts, bad debts etc. The increase in receivables will bring more profits by increasing sales. If the costs of receivables are more than the increase in income, further credit sales should not be allowed. And if revenue earned is more than cost, the sales should be expanded.

4. **Average size of receivables :** It helps in forecasting receivable. Average size of receivables is calculated as :

   Average size of receivables = Estimated annual sales × Average collection period.

5. **Forecasting Average collection period and discounts :** The credit collection policies spells out the time for making payments and the time allowed for availing discounts. If the average collection period is more then the size of receivables will be more and vice-versa. The formula is given below :

   Average collection period = Trade debtors × No of working days/Net sales.

   The Average collection period should be kept under control by the concern and the number of customers availing discounts should be determined. If 40 percent of the customers are not availing discount facility it means that the payments by 40 percent customers are over due. These factors will also be helpful in forecasting the size of receivables.



CHECK YOUR PROGRESS

Q.5. Mention two costs associated with receivables management ?

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Q.6. What is credit policy ?

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13.10 LET US SUM UP

After going through the unit we have come through the following :

- Receivables represent amount owed to a firm as a result of sale of goods or services in the usual course of business.
- The factors which influence or affect the size of receivables are:
  1. Size of credit sales
  2. Credit policies
  3. Terms of trade
  4. Expansion plans
  5. Relation with profits
  6. Credit collection efforts
  7. Habits of customers
- For maintaining receivables the following costs can be incurred by the concern :
  1. Cost of Financing Receivables
  2. Cost of collection
  3. Bad debts
- Evaluation of credit policy after formulation is very important. It is necessary to find out the credit worthiness of customers. The following are the ways to evaluate credit policy :
  a. Collecting Credit information
  b. Credit Analysis
  c. Credit Decision
  d. Financing Investments in Receivables
- There are some factors which help in forecasting receivable: Credit Period allowed :
  a. Effect of Cost of goods sold:
  b. Forecasting Expenses
  c. Forecasting Average collection period and discounts
  d. Average size of receivables



13.11 FURTHER READING

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2. Arindam Banerjee 2016), Financial Management, 1st Edition; Oxford University Press.
3. M Y Khan (2017), Financial Management, 7th Edition McGraw Hill Education.
4. Rajiv Srivastava & Anil Mishra (2011); Financial Management, 2nd Ediotion, Oxford University Press.
5. R. M Shrivastava (2010), Financial Management And Policy, Himalaya Publishing House.



13.12 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q. 1. :

Receivables constitute a significant portion of current assets of a firm. But, for this investment in receivables a firm has to incur certain costs. And it has a risk of bad debts also.

Answer to Q. 2. :

a. Trade receivables
b. Bad debts
c. Cost of collection

Ans to Q. 3. :

a. To meet variation in product demand.
b. To minimise losses through deterioration, pilferage, wastages etc.

Ans to Q. 4. :

a. Transaction Motive
b. Precautionary Motive
c. Speculative Motive

Ans to Q. 5. :

a. Ordering Costs and

b. Capital Costs

Ans to Q. 6. :

a. Determination of stock levels.

b. Selecting a proper system of ordering for inventory

c. Determination of Economic order quantity

d. ABC analysis

e. VED analysis.



13.13 MODEL QUESTIONS

1. What is Receivables ?
2. Mention the objectives of receivable Management ?
3. What are the various credit policy variables ?
4. What are the different costs associated with Receivables Management ?
5. What are the various ways to evaluate the credit policy ?
6. What are the factors that influence the size of the receivables ?

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UNIT - 14 : DIVIDEND DECISION

UNIT STRUCTURE

14.1 Learning Objectives

14.2 Introduction

14.3 Meaning and concept of dividend Decision

14.4 Determinants of dividend policy

14.5 Stability of Dividend

14.6 Forms of Dividend

14.7 Types of dividend policy.

14.8 Traditional Approach.

14.9 Dividend Relevance Model / Approach

14.10 Dividend Irrelevance Model / Approach

14.11 Stock Split

14.12 Let Us Sum Up

14.13 Further Reading

14.14 Answers to Check your progress

14.15 Model Questions

14.1 LEARNING OBJECTIVES

After going through this unit, you will be able to :

- discuss the meaning and concept of dividend decision
- outline the determinants of dividend policy
- describe the different types of dividend policy
- discuss the various models related to dividend
- explain the different forms of dividend
- describe the stability of dividends.

14.2 INTRODUCTION

Dividend is that part of profit which is distributed among the shareholders by the company in which the shareholders are the members. It is a kind of reward given by the company to its shareholders for the investments made by them in shares of the company. Companies usually follow a set of policies to decide the quantum of dividends to be paid to shareholders. These are termed as dividend policies. Dividend decisions are important decisions for any company.

Dividend is a right of shareholders to participate in the profits and surplus of the company for their investment in the share capital of the company, and they should receive fair amount of the profits.

Therefore a company should distribute a reasonable amount as dividend to its members and retain the rest for its growth and survival.

14.3 MEANING AND CONCEPT OF DIVIDEND DECISION

Dividend policy is one of the most critical areas of decision making for companies. According to one school of thought, dividend decision does not affect the shareholders wealth and hence the valuation of the firm and according to another school of thought, dividend decision materially affects the shareholders wealth and also the valuation of the firm. The views of these schools of thoughts are under two groups :

a. The theory of Irrelevance and
b. The theory of Relevance.

Shareholders and management of the company play a major role in formulating the dividend policy. In case of ONGC the major shareholder is the government of India and it plays major role in structuring the dividend policy. For eg : Infosys Ltd a leading player in the information technology sector prescribes distribution of up to 50 percent of profit after tax (PAT) as dividend. It is usually found that the dividend policy of a company is formulated by the top management. For eg: the Board of directors, major shareholders etc.

Before declaring dividend the board takes several critical factors into consideration including cash flow position, future capital expansion plans, taxation and so on.



CHECK YOUR PROGRESS

Q.1. Define Dividend.

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Q.2. What is the meaning of dividend decision ?

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Q.3. Fill in the blanks :

a. _____ and _____ of a company plays an important role in decision policy.

b. Dividend decisions are important decision for any _____

14.4 DETERMINANTS OF DIVIDEND POLICY

The payment of dividend involves some legal as well as financial consideration. It is difficult to determine a general dividend policy which can be followed by different firms at different times because dividend decision has to be taken considering the special circumstances of an individual case. The main factors are as follows :

a. **Legal Restrictions :** These provisions require that dividend can be paid only out of current profits or past profits after providing for depreciation or out of the moneys provided by government for payments of dividend. Legal provisions relating to dividends as laid down in sections 93, 205, 205A, 206, 207 of the Companies Act 1956 are significant because they lay down a framework within which dividend policy is formulated.

b. **Magnitude and Trend of earnings :** The amount and trend of earnings is an important aspect of dividend policy. As dividends can be paid only out of present or past year's profits, earnings of a company fix the upper limits on dividends. The past trend of the company's earnings should be noted while making the dividend decision. The dividend should be paid out of current year's earnings only as the

previous year's earnings become a part of permanent investments in order to earn current profits in business.

c. **Desire and types of shareholders :** Desire of shareholders for dividend depends upon their economic status. Investors such as retired persons, widows and other economically weaker persons view dividends as a source of funds to meet their day to day living expenses. To benefit such investors the companies should pay regular dividends. On the other hand a wealthy investor in a high income tax bracket may not benefit by high current dividend income. Such an investor may be interested in lower current dividends and high capital gains.

d. **Age of the company :** The dividend decisions are also influenced by the age of the company. For a newly established company it has to limit payment of dividend and retain a part of earnings for financing its future growth and development, while older companies which have sufficient reserves can afford to pay liberal dividends.

e. **Nature of Industry :** This factor also considerably affects the dividend policy as certain industries have a considerably steady and stable demand irrespective of the prevailing economic conditions. Firms which expect regular earnings follow a consistent dividend policy. Again if the earnings are uncertain as in the case of luxury goods, conservative policy should be followed. Thus industries with steady demand of their products can follow a higher dividend payout ratio while cyclical industries should follow a lower payout ratio.

f. **Taxation policy :** A higher or lower rate of business taxation affects the net earnings of the company (after tax) and thereby its dividend policy. Thus, a taxation policy of the government also affects the dividend decision of a firm.

g. **Dividend Destribution Tax :** Dividend Destribution Tax (DDT) is an additional amont of tax (under section 115 of Income Tax Act, 1961) to be paid, in addition to the income tax chargeable in respect of the total income or even if there is no income tax payable on total income computed in accordance with Income Tax Act, 1961, by every company which declares, distributes or pays dividend to its share-holders for a particular assesment year.

h. **Inflation :** Inflation acts as a constraint in the payment of dividends. When price rises, funds generated by depreciation would not be adequate to replace fixed assets, and hence to maintain the same assets, and keep capital intact, substantial part of the current earnings would be retained. Or else, the inflated book profits in the days of rising prices would amount to payments of dividend much more than warranted by the real profits out of the equity capital.

i. **Requirements of institutional investors :** The requirements of the institutional investors such as banks, financial institutions, banks insurance etc also affects the dividend policy of the company. These investors usually favour a policy of regular payments of cash dividend and stipulate their own terms with regard to payment of dividend on equity shares.

j. **Liquid Resources :** The availability of the liquid resources also affects the dividend policy. Although the firms may have a sufficient amount of funds to declare dividends but still may not be desirable to pay dividends if it does not have sufficient liquid resources. If the company does not have liquid resources it is better to declare stock dividend i.e. issue bonus shares to the existing shareholders.

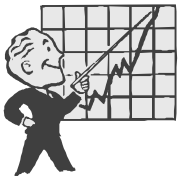
k. **Government Economic policy :** The dividend policy of a firm has also to be adjusted to the economic policy of the government. In 1974 and 1975 the companies were allowed to pay not more than 33 % dividend out of their profits or 12% on the paid up value of the shares, whichever was lower.

l. **Future financial Requirements :** The future financial requirements of a company must also be taken into consideration while making a dividend decision. As for example if a company has high profitable investment opportunities it can convince the shareholders to accept with limited amount of dividends and plough back the profits to increase the future earnings but when the company has no such opportunity then it would not be justified in retaining the substantial part of its current earnings by paying less amount of dividend to the shareholders.

14.5 STABILITY OF DIVIDEND

One of the most important guideline or principle in the formulation of a dividend policy is Stability of Dividends. It simply refers to the payment of dividends regularly and shareholders generally prefer such payments of

dividends. Some companies follow a policy of constant dividend per share, whereas some companies follow policy of constant pay-out ratio, and some follow constant low dividend per share plus an extra dividend in the years of high profit. Now it is seen that a policy of constant dividend per share is most suitable to concern whose earnings are expected to be stable over a number of years or in those companies where there are sufficient reserves to pay dividends in the years of low profits. The policy of constant payout ratio i.e paying a fixed percentage of net earnings every year may be supported by a firm because it is related to a firm whose ability is there to pay dividends. Again, the policy of constant low dividend per share is suitable to the firm having fluctuating earnings from year to year.



CHECK YOUR PROGRESS

Q.4. Give the determinants of dividend policy ?

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Q.5. What do you mean by stability of dividend ?

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14.6 FORMS OF DIVIDEND

There are various forms of dividend. In ordinary course of business dividends paid are known as Profit dividends, while dividends paid out of capital are known as Liquidation dividends. Dividend may be classified as Cash dividend, Scrips Dividend, Property dividend, and Stock dividend.

- **Cash Dividend :** It is a usual method of paying dividends. Payment of dividend in cash results in outflow of funds and reduces the company's net worth though the shareholders get an opportunity to invest the cash in any manner they desire. That is the reason the shareholders prefer to receive dividends in cash. But in other hand the firm must provide for adequate liquid resources so that its liquidity position is not adversely affected on account of cash dividends.

- **Scrips or Bond dividend :** A scrips dividend promises to pay the shareholders at a future specific date. In case of insufficiency of funds to pay dividend in cash it may issue bonds for amounts due to the shareholders. The main objective of this dividend is to postpone the immediate payment of cash. It is also accepted as a collateral security.
- **Property Dividend :** These dividends are paid in the form of some assets other than cash. This dividend is distributed under exceptional circumstances and is also not popular in India.
- **Stock dividend :** It means the issue of bonus shares to the existing shareholders. If there is lack of liquid resources in a company, it is better to declare stock dividend. It amounts to capitalisation of earnings and distribution of profits among the existing shareholders without affecting the cash position of the firm.

14.7 TYPES OF DIVIDEND POLICY

There are various types of dividend policy which are described below :

1. **Regular Dividend Policy :** The dividend which is paid at the usual rate is known as regular dividend. The investors who prefer to get regular dividends are the retired persons, widows, economically weaker section etc. This also creates confidence among the shareholders. A regular dividend policy aids in long term financing and renders finance easier.

   However, regular dividends can be maintained only by companies of long standing and stable earnings.

2. **Irregular Dividend policy :** On account of uncertainty of earnings, unsuccessful business operations, Lack of liquid resources, and fear of adverse effects of regular dividends on the financial standing of the company, some of the companies follow irregular dividend payments.
3. **No dividend Policy :** A company may follow a policy of paying no dividend because of its unfavourable working capital position or on account of requirements of funds for future expansion.
4. **Stable dividend policy :** It means payment of certain amount of dividend regularly. A stable dividend policy may be established in any

of the following three forms: Constant dividend per share, Constant pay out ratio, Stable rupee dividend plus extra dividend.

The term Stability of dividends means consistency or lack of variability in the stream of dividend payments. It means payment of certain minimum amount of dividend regularly. The three forms of stable dividend policy are :

a. **Constant dividend per share :** Some companies follow a policy of paying fixed dividend per share irrespective of any earnings. Such firms usually create a reserve for dividend equalisation to enable them pay the fixed dividend even in a year when the earnings are not sufficient or when there are losses.

b. **Constant payout ratio :** Constant pay-out ratio means payment of a fixed percentage of net earnings as dividend every year. The amount of dividend in such a policy fluctuates in direct proportion to the earnings of the company.

c. **Stable rupee dividend plus extra dividend :** Some companies follow a policy of paying constant low dividend per share plus an extra dividend in the year of high profits.

A stable dividend policy has its importance for both the investors and the company on the following grounds :

a. It stabilises the market value of shares.

b. It creates confidence among the investors.

c. It meets the requirements of institutional investors who prefer companies with stable dividends.

d. It results in a continuous flow to the national income stream and thus stabilises the national economy.

Together with the advantages the stable dividend policy suffers from certain limitations. It is not easier to change the stable dividend policy followed by the company. The financial standing of the company is damaged in the minds of the investors, if the stable dividends are not paid to the shareholders on any account. It adversely affects the market price of shares of the company.

14.8 TRADITIONAL APPROACH

According to the traditional approach expounded by Graham and Dodd, the stock market places considerably more weight on dividends than on retained earnings, For them, the stock market is overwhelmingly in favour of liberal dividends as against niggardly dividends. Their view is expressed quantitatively in the following valuation model :

$$P = m (D + E/3)$$

Where,

P = Market price per share

D = Dividend per share

E = Earnings per share

m = a Multiplier.

As per this model in the valuation of shares the weight attached to dividends is equal to four times the weight attached to retained earnings. In the model prescribed, E is replaced by D+R (where R = Internal Rate of Return) so that

$$P = m \{D + (D+R)/3\}$$
$$= m \{4D/3\} + m \{R/3\}$$

These weights provided by Graham and Dodd are based on their subjective judgements and not on objective empirical analysis. Notwithstanding the subjectivity of these weights, the major contention of the traditional approach is that a liberal payout policy has a favourable impact on stock prices.



CHECK YOUR PROGRESS

Q.6. Mention two types of dividend policy ?

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Q.7. What is stable dividend policy ?

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14.9 DIVIDEND RELEVANCE MODEL / APPROACH

The other school of thought on dividend decision holds that the dividend decisions considerably affect the value of the firm.

The theories relating to the relevance concept is described below :

1. Walter's Approach
2. Gordon's Approach

1. Walter's Approach :

This approach supports the doctrine that dividend decisions are relevant and affect the value of the firm. Prof. Walter's model is based on the relationship between the firm's return on investment i.e. (r), and the cost of capital or the required rate of return i.e. (k).

If r > k i.e. if the firm earns a higher rate of return on its investment than the required rate of return, the firm should retain the earnings. Such firms are termed as growth firms and this would maximise the value of shares.

If r < k i.e. in case of declining firms which do not have profitable investments, the shareholders would stand to gain if the firm distributes its earnings as dividends.

If r = k i.e. in case of normal firms the dividend policy will not affect the market value of shares as shareholders will get the same return as expected. And there would be no change in the value of the firm with the change in the dividend rate.

Assumptions :

a. Earnings and dividends do not change while determining the value.

b. The firm has a very long life.

c. Both internal rate of return and the cost of capital of the firm are constant.

d. No external sources of funds are used by the firm to make investments. They are financed only through retained earnings.

Formula for determining the value of a share :

The equation is based on the following share valuation model :

$P = D/(K_e - g)$, where,

P = price of equity share.

D = Initial dividend per share

K_e = Cost of equity capital

g = Expected growth rate of earnings

Criticism of Walter's model :

a. The assumption that the firm do not use external source of funds for investment is not true in the real world. Firms do raise funds through external financing.

b. Secondly, the Internal Rate of Return (r) do not remain constant, it changes with the change in investments.

c. The assumption that the cost of capital (k) will remain constant also does not hold good. As the firm's risk doesnot remain constant so also k will also never remain constant.

2. Gordon's Approach :

Myron Gordon has also developed a model suggesting that dividends are relevant and the dividend decision of the firm affects its value. The implication of his model is described below :

a. When r > k i.e., the firm earns higher rate of return on its investment than required rate of return, the price per share decreases as the dividend payout ratio increases.

b. When r = k i.e., the firms earns a higher rate of return on its investment than required rate of return, the price per share remains unchanged as it is not affected by dividend policy.

c. When r < k i.e., the firm earns a higher rate of return on its investment than required rate of return, the price per share increases as the dividend payout ratio decreases.

Assumptions :

a. The firm is an all equity firm.

b. The rate of return on the firm investment is constant.

c. The cost of capital for the firm remains constant and is greater than the growth rate.

d. Corporate taxes do not exist.

e. The firm has a perpetual life.

f. No external financing is used, only retained earnings represent the source of financing investments.

The formula for basic valuation is as follows :

$P = E (1-b)/ ke – br$

Where, P = Price of shares, E = Earnings per share, b = Retention ratio, ke = cost of equity capital, br = g = Growth rate i.e. rate of return on investment.

14.10 DIVIDEND IRRELEVANCE MODEL / APPROACH

Modigliani and Miller (MM) model maintain that dividend policy has no effect on the market price of the shares and the value of the firm is determined by the earning capacity of the firm or its investment policy. As observed by the MM, "Under conditions of perfect capital markets, 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 the shares."

Assumptions of MM Hypothesis

The MM Hypothesis of irrelevance of dividends is based on the following assumptions :

a. There are capital markets.

b. Investors behave rationally.

c. There are no floatation and transaction costs.

d. Information about the company is available to all without any cost.

e. The firm has a rigid investment policy.

f. There are either no taxes or there are no differences in the tax rate applicable to dividends.

g. No investor is large enough to effect the market price of shares.

h. There is no risk or uncertainty in regard to the future of the firm. (This assumption was dropped later)

The Argument of MM

The Argument given by MM in support of their hypothesis is that whatever increase in the value of the firm that results from the payment of dividend, will be exactly off set by the decline in the market price of shares because of external financing and there will be no change in the total wealth of the shareholders. For example, if a company having investment opportunities distributes all its earnings among the shareholders, it will have to raise additional funds from external sources. This will result in the increase in number of shares or payment if interest charges, resulting in fall in the earnings per share in the future. This MM model can be explained with the help of above formula :

$$Po = \frac{1}{(1 + Ke)} (D1 + P1)$$

Where : Po = Market price per share at the beginning of the period.

D1 = Dividend to be received at the end of the period.

P1 = Market price per share at the end of the period.

Ke = Cost of equity capital.

Criticism of MM Approach

MM hypothesis has been criticised on account of various unrealistic assumptions as given :

a. Perfect capital market does not exist in reality.

b. The firms have to incur floating costs while issuing securities.

c. Information about the company is not available to all the persons.

d. Taxes do exit and there is normally different tax treatment.

e. The firms do not follow a rigid investment policy.

f. Shareholders may prefer current income as compared to further gains.

14.11 STOCK SPLIT

Stock split is a process adopted by companies to increase the number of freely floated shares, without issuing new shares. This can be done by splitting the existing shares into smaller denominations. An equity share of face value of Rs 10 may be split into 10 equity shares of Rs 2 each. After the stock split the par value of shares gets changed. However, the share capital remains unchanged.

Many companies prefer stock split with an exponential rise in the Indian share market.

The advantages of stock split are as follows :

a. Stock split brings down the par value as well as the market value of shares. This makes the shares readily available or more accessible to large number of investors and the volume of transaction in the stock market also increases. The right price of a share can also be determined. It indicates increase in share liquidity.

b. The share price of the companies having high growth rise fast. Stock split also gives indication towards the possibility of a higher profit in the future.

The disadvantages of stock split are as follows :

a. The price of the share generally comes down due to stock split. The investors may perceive the stock as cheap and act negatively.

b. The stock split may result in increased administrative and legal cost for the company.



CHECK YOUR PROGRESS

Q.8. Give two advantages of Stock Split ?

a. .....

b. .....

Q.9. Define— Stock Split.

a. .....



14.12 LET US SUM UP

In this unit we have discussed the following :

- Dividend is a right of shareholders to participate in the profits and surplus of the company for their investment in the share capital of the company, and they should receive fair amount of the profits.
- Dividend may be classified as Cash dividend, Scrips Dividend, Property dividend, and Stock dividend.
- The determinants of dividend policies are :
  a. Legal Restrictions
  b. Magnitude and Trend of earnings
  c. Desire and types of shareholders
  d. Age of the company
  e. Nature of Industry
  f. Taxation policy
  g. Inflation
  h. Requirements of institutional investors
  i. Liquid Resources
  j. Government Economic policy
  k. Future financial Requirements.
- There are various types of dividend policy which are described below :
  1. Regular Dividend Policy
  2. Irregular Dividend policy
  3. No dividend Policy
  4. Stable dividend policy
- The three forms of stable dividend policy are :
  a. Constant dividend per share
  b. Constant payout ratio
  c. Stable rupee dividend plus extra dividend
- The theories relating to the relevance concept is described below :
  1. Walter's Approach
  2. Gordon's Approach

- Modigliani and Miller Model, "Under conditions of perfect capital markets, 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 the shares."
- Stock split is a process adopted by companies to increase the number of freely floated shares, without issuing new shares.



14.13 FURTHER READING

1. S. K. Gupta & R. K. Sharma (2016), Financial Management: Theory and Practice, 8th Edition, Kalyani Publishers.
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3. M Y Khan (2017), Financial Management, 7th Edition McGraw Hill Education.
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14.14 ANSWER TO CHECK YOUR PROGRESS

Ans to Q. 1. :

Dividend is a right of shareholders to participate in the profits and surplus of the company for their investment in the share capital of the company, and they should receive fair amount of the profits.

Ans to Q. 2. :

Dividend policy is one of the most critical areas of decision making for companies. According to one school of thought, dividend decision does not affect the shareholders wealth and hence the valuation of the firm and according to another school of thought, dividend decision materially affects the shareholders wealth and also the valuation of the firm.

Ans to Q. 3. :

a. Shareholders and Management

b. Company

Ans to Q. 4. :

Some determinants of dividend policy are given below :

a. Legal Restriction

b. Desire and types of shareholders

c. Nature of Industry

d. Age of the Company

e. Government's Economic Policy

Ans to Q. 5. :

One of the most important guideline or principle in the formulation of a dividend policy is Stability of Dividends. It simply refers to the payment of dividends regularly and shareholders generally prefer such payments of dividends.

Ans to Q. 6. :

a. Regular Dividend Policy.

b. Stable Dividend Policy.

Ans to Q. 7. :

The term Stability of dividends means consistency or lack of variability in the stream of dividend payments. It means payment of certain minimum amount of dividend regularly.

Ans to Q. 8. :

The two advantages of Stock Splits are :

- Stock split brings down the par value as well as the market value of shares.
- The share price of the companies having high growth rise fast. Stock split also gives indication towards the possibility of a higher profit in the future.

Ans to Q. 9. :

Stock split is a process adopted by companies to increase the number of freely floated shares, without issuing new shares. This can be done by splitting the existing shares into smaller denominations.



14.15 MODEL QUESTIONS

1. Define Dividend.
2. What do you understand by Dividend decision ?
3. Name various determinants of the dividend policies.
4. Define Stock Split.
5. What are the Disadvantages of stock split ?
6. What are the various forms of dividend ?
7. Name the two theories of dividend ?
8. What is stability of dividend ?
9. What do you understand by a stable dividend policy ? Why it should be followed ?
10. Explain the two theories of dividend policy in details.
    a. Dividend Relevance Model
    b. Miller and Modigliani Model
11. Explain the various factors which influence the dividend decision of a firm.

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